

**AN INVESTIGATION INTO THE NEUROLOGICAL AND NEUROBEHAVIOURAL
EFFECTS OF LONG-TERM AGRICHEMICAL EXPOSURE AMONG DECIDUOUS FRUIT
FARM WORKERS IN THE WESTERN CAPE, SOUTH AFRICA**

VOLUME II: APPENDICES

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APPENDIX 3.1 - CLASSIFICATION OF AGRICHEMICALS

The Nomenclature and Classification of Agrichemicals

Table A.3.1.1 lists the classification of agrichemicals by usage proposed by the International Programme on Chemical Safety (IPCS), a joint programme of the World Health Organisation (WHO), the International Labour Organisation (ILO) and the United Nations Environment Programme (UNEP) ⁴⁹. This classification is not exclusive in that some chemical agents may have more than one use. For example, oxamyl is used as an insecticide, acaricide and nematocide.

Table A.3.1.1 - Classification of Pesticide by use (IPCS, 1990)

- | | |
|---------------------------|--------------------------|
| * Acaricide | * Molluscicide |
| * Algicide | * Nematocide |
| * Anthelmintic | * Other |
| * Bacteriocide | * Plant Growth Regulator |
| * Fumigant | * Repellent |
| * Fungicide | * Rodenticide |
| * Herbicide | * Synergist |
| * Insect Growth Regulator | * Termiticide |
| * Insecticide | |

South African sources make use of the categories of seed treatments to define fungicides used to pre-treat grain seed used for planting (AVCASA communication).

Because some sources use the term pesticide to refer only to those chemicals used to combat pests (insects and fungi), the term pesticide may be interpreted more narrowly than is intended. Therefore "Agrichemical" is preferred as a generic term for all chemicals used in agriculture to either combat unwanted pests of weeds, or to promote plant growth and production.

The second important aspect of classification of pesticides is the chemical class of the agent concerned. Table A.3.1.2 lists the classification of agrichemicals by chemical class used by the IPCS ⁴⁹.

Table A.3.1.2 - Classification of Pesticide by chemical class (IPCS, 1990)

- | | |
|--------------------|-------------------|
| * Acid amide | * Organophosphate |
| * Arsenic compound | * Other |
| * Bromide | * Phenoxy |
| * Carbamate | * Pyrethroid |
| * Dinitrophenol | * Organotin |
| * Heterocyclic | * Thiocarbamate |
| * Organomercury | * Urea |
| * Organochlorine | |

Agrichemicals of similar chemical structure and class may have similar toxicological profiles. This phenomenon is familiar to many clinician, particularly in the case of the organophosphate insecticides. However, this consistency is not always the case, and

chemical structure may not be at all related to biological effect, either in plants or in humans. This makes chemical classification extremely difficult to effect meaningfully.

A modification of both the above classifications is proposed that will incorporate the chemical classification of agents and their function as agrichemicals, as well as taking into account a characteristic profile of their health effects. This classification includes some specific agents with known toxicity profiles and is listed in Table A.3.1.3¹³. This classification should have the most utility from a public health point of view for researchers and practitioners wishing to make sense of a vast array of diverse agrichemicals available for use.

Table A.3.1.3 Classification of agrichemicals

1. Insecticides

- * Organophosphates (eg: parathion, malathion and dichlorvos)
- * Carbamates (eg: carbaryl)
- * Organochlorines
eg: DDT, lindane, heptachlor, aldrin, dieldrin and hexachlorobenzene
- * Pyrethroids
- * Insect Growth Regulants (IGR)
- * Dinitrophenols (DNOC)
- * Heavy metal (antimony salt)
- * Organotin compounds
- * Sulphur
- * Miscellaneous

2. Fungicides

- * Pthalimides (eg: Captan)
- * Dithiocarbamates
- * Dinitrophenol
- * Hexachlorobenzene
- * Triazoles
- * Copper salts
- * Organochlorine
- * Heterocyclic
- * Sulphur
- * Ureas
- * Miscellaneous

3. Herbicides

- * Dinitrophenols and derivatives
- * Chlorphenoxyacetic herbicides (eg: 2,4D and 2,4,5T)
- * Dipyridyls (eg: Paraquat and diquat)
- * Ureas
- * Triazines
- * Amides
- * Dithiocarbamates
- * Heterocyclics
- * Organochlorines
- * Glycine derivative (eg: Glyphosate)
- * Miscellaneous

4. Rodenticides

- * Warfarin
- * Sodium Fluroacetate
- * Miscellaneous (eg: red squill, strychnine)

5. Fumigants

- * Methyl Bromide
- * Dibromochloropropane (DBCP) and Ethylene Dibromide (EDB)
- * Phosphine

6. Plant Growth Regulators

eg: Gibberelic acids, Cyanamide, carbamates.

7. Miscellaneous - arsenicals

It may be possible to classify certain agrichemicals in more than one functional category depending on their usage. For example, nematicides include both fumigants and some insecticides, while organophosphates may be both insecticides, nematicides and acaricides.

REFERENCE

International Programme on Chemical Safety (IPCS). (1991). The WHO Recommended Classification of Pesticides by hazard and Guidelines to the Classification 1990-91. WHO, Geneva

APPENDIX 3.2 - CALCULATION OF BIOLOGICAL EQUIVALENTS (BE'S)

BE's are the total quantity of active ingredient (kg) of a generic agrichemical multiplied by the inverse of its oral LD50 as registered with the Dept of Agriculture (g/kg). An example is illustrated below for a formulation that contains two types of dipyridyl herbicide, paraquat and diquat.

In 1989, twelve thousand kg of a combination dipyridyl was also used containing 80g of active ingredient diquat per kg and 120g of active ingredient paraquat per kg.

Total Quantity used = 12 X 1000 kg
 Concentration of active diaquat = 80 g/kg
 Concentration of active paraquat = 120 g/kg
 Oral LD50 diquat = 231 mg/kg
 Oral LD50 paraquat = 150 mg/kg

To calculate biological equivalents:

$$\begin{aligned}
 \frac{\text{Total Quant X Conc Active Ingrid}}{\text{Oral LD50}} &= \frac{12 \times 80}{231} + \frac{12 \times 120}{150} \\
 &= 4,156 + 9,6 \\
 &= 13,756
 \end{aligned}$$

Hence from the combination agent there were 13,756 biological equivalent units.

APPENDIX 3.3 SECTOR-SPECIFIC AGRICHEMICAL USAGE IN THE SOUTHERN REGION OF SA.

Table A.3.1.4 - Hectares* by crop sector for major crops found in the Western Cape

Sector	Hectares
Pome fruit	22 500
Stone fruit	13 200
Citrus fruit	41 500
Vines	102 000
Potato	70 000
Wheat	1 830 000

{Source: AIS, 1990}

* Hectarage nationally in SA for crops found substantially in W Cape.
Only crop sectors of importance in the W Cape are listed.

The hectarage in Western Cape for these crops is thought to be somewhat lower than that listed in the table above:

Total deciduous fruit 48 450 ha
Grain 1 545 500 ha
Vegetables 20 770 ha
Wine grapes 91 000 ha

{Source: WESGRO, 1991}

As is clear, hectarage for deciduous fruit, grapes and grains are fairly consistent. Data for citrus and vegetables / potatoes are inconsistent because most production nationally occurs outside the W Cape.

However, data that follows on agrichemical use by sector is based on national usage and hectarage for each crop sector nationally is used in tables A.3.2 onward as denominator for calculating quantity per hectare.

Table A.3.2 - Patterns of Agrichemical Usage in the Southern Cape Region: POME SECTOR 1989 - Insecticides.

<u>Agrichemical Type</u> (Number of diff types)	<u>BES</u>	<u>BES/hectares</u> <u>x10³</u>	<u>Quantity</u> (kg)	<u>Kg/hectare</u>
Organophosphates (17)	3 531	156.93	112 005	4.98
Carbamates (5)	19	0.84	11 650	0.52
Organochlorines (1)	264	11.73	19 238	0.86
Dintrophenols (DNOC) (1)	944	41.96	31 158	1.38
Pyrethroids (9)	6	0.27	1 191	0.05
Insect Growth Regulators	-	-	-	-
Miscellaneous (3)	0.5	<0.02	270	0.01
Oil	-	-	844 908	37.55
TOTAL	4 765	211.78	1 020 420	45.35

Table A.3.3 - Patterns of Agrichemical Usage in the Southern Cape Region: STONE FRUIT SECTOR 1989 - Insecticides.

<u>Agrichemical Type</u> (Number of diff types)	<u>BEs/hectares</u> <u>X10⁻³</u>	<u>BEs/hectares</u> <u>x10⁻³</u>	<u>Quantity</u> <u>(kg)</u>	<u>Kg/hectare</u>
Organophosphates (17)	553	41.89	32 498	2.46
Carbamates (5)	1	0.08	190	0.01
Organochlorines (2)	185	14.02	13 490	1.02
Dinitrophenols (DNOC) (1)	47	3.56	1 553	0.12
Pyrethroids (6)	1	0.08	208	0.02
Insect Growth Regulators	-	-	-	-
Miscellaneous (1)	0.2	0.02	120	0.01
Oil	-	-	49 583	3.76
TOTAL	787	59.65	97 640	7.40

Table A.3.4 - Patterns of Agrichemical Usage in the Southern Cape Region: POME SECTOR 1989 - Fungicides.

<u>Agrichemical Type</u> (Number of diff types)	<u>BEs/hectares</u> <u>X10⁻²</u>	<u>BEs/hectares</u> <u>x10⁻²</u>	<u>Quantity</u> <u>(kg)</u>	<u>Kg/hectare</u>
Dithiocarbamates (3)	38	1.69	70 656	3.14
Ergosterol Biosyn Inhibitors (4)	0.5	<0.02	1 375	0.06
Copper (1)	29	1.29	41 940	1.86
Pthalic Acid (3)	6	0.27	77 742	3.46
Carbamates (1)	0.4	0.02	3 550	0.16
Heterocyclics (1)	0.3	0.01	280	0.01
Miscellaneous (7)	4.39	0.21	15 094	0.67
Sulphur (1)	-	-	320 056	14.22
TOTAL	85	3.78	530 790	23.59

Table A.3.5 - Patterns of Agrichemical Usage in the Southern Cape Region: STONE FRUIT SECTOR 1989 - Fungicides.

<u>Agrichemical Type</u> (Number of diff types)	<u>BEs/hectares</u> <u>X10³</u>	<u>BEs/hectares</u> <u>x10³</u>	<u>Quantity</u> <u>(kg)</u>	<u>Kg/hectare</u>
Dithiocarbamates (3)	25	1.89	25 216	1.91
Ergosterol Biosyn Inhibitors (1)	0.2	0.02	325	0.02
Copper (3)	56	4.24	73 410	5.56
Carbamates (1)	<0.1	0.01	150	0.01
Miscellaneous (5)	2.	0.15	5 761	0.44
Sulphur (3)	-	-	86 060	6.52
Organochlorines (1)	2	0.15	2 750	0.21
TOTAL	84	6.36	193 690	14.67

Table A.3.6 - Patterns of Agrichemical Usage in the Southern Cape Region: POME SECTOR 1989 - Herbicides.

<u>Agrichemical Type</u> (Number of diff types)	<u>BEs/hectares</u> <u>X10³</u>	<u>BEs/hectares</u> <u>x10³</u>	<u>Quantity</u> <u>(kg)</u>	<u>Kg/hectare</u>
Dipyridyls (Paraquat) (4)	71	3.16	12 343	0.55
Chlorphenoxy (1)	5	0.22	3 800	0.17
Ureas (1)	<0.1	<0.01	80	<0.01
Miscellaneous herbicides (3)	0.2	<0.01	903	0.04
Glycine (Roundup) (2)	9	0.40	38 875	1.73
Triazines (3)	10	0.44	47 506	2.11
TOTAL	101	4.49	103 510	4.60

Table A.3.7 - Patterns of Agrichemical Usage in the Southern Cape Region: STONE FRUIT SECTOR 1989 - Herbicides.

<u>Agrichemical Type</u> (Number of diff types)	<u>BEs/hectares</u> <u>X10⁻²</u>	<u>BEs/hectares</u> <u>x10⁻²</u>	<u>Quantity</u> <u>(kg)</u>	<u>Kg/hectare</u>
Dipyridyls (Paraquat) (4)	15	1.14	9 680	0.73
Ureas (1)	<0.1	0.01	280	0.02
Miscellaneous herbicides (3)	<0.1	0.01	405	0.03
Glycine (Roundup) (2)	6	0.45	25 097	1.90
Triazines (1)	<0.1	0.01	266	0.02
TOTAL	21	1.59	35 730	2.71

Table A.3.8 - Patterns of Agrichemical Usage in the Southern Cape Region: POME SECTOR 1989 - Acaricides.

<u>Agrichemical Type</u> (Number of diff types)	<u>BEs/hectares</u> <u>X10⁻²</u>	<u>BEs/hectares</u> <u>x10⁻²</u>	<u>Quantity</u> <u>(kg)</u>	<u>Kg/hectare</u>
Acid amides (1)	<0.1	<0.01	230	0.01
Heterocyclics (1)	2	0.09	7 100	0.32
Organochlorine (1)	<0.1	<0.01	527	0.02
Organotin (4)	78	3.47	14 485	0.64
Miscellaneous (2)	5	0.22	8 943	0.40
Pyrethroids (1)	4	0.18	200	0.01
TOTAL	88	3.91	31 480	1.40

Table A.3.9 - Patterns of Agrichemical Usage in the Southern Cape Region: STONE FRUIT SECTOR 1989 - Acaricides.

<u>Agrichemical Type</u> (Number of diff types)	<u>BEs/hectares</u> <u>X10⁻²</u>	<u>BEs/hectares</u> <u>x10⁻²</u>	<u>Quantity</u> (kg)	<u>Kg/hectare</u>
Organotin (3)	15	1.14	4 315	0.33
Miscellaneous (2)	2	0.15	3 668	0.28
TOTAL	17	1.29	7 983	0.60

Table A.3.10 - Patterns of Agrichemical Usage in the Southern Cape Region: POME SECTOR 1989 - Adjuvants/Miscellaneous.

<u>Agrichemical Type</u> (Number of diff types)	<u>BEs/hectares</u> <u>X10⁻²</u>	<u>BEs/hectares</u> <u>x10⁻²</u>	<u>Quantity</u> (kg)	<u>Kg/hectare</u>
Heterocyclics	0.2	0.01	853	0.04
Miscellaneous	3	0.13	5 998	0.27
Protein	-	-	660	0.03
TOTAL	3	0.14	7 510	0.34

Table A.3.11 - Patterns of Agrichemical Usage in the Southern Cape Region: STONE FRUIT SECTOR 1989 - Adjuvants/Miscellaneous.

<u>Agrichemical Type</u> (Number of diff types)	<u>BEs/hectares</u> <u>X10⁻²</u>	<u>BEs/hectares</u> <u>x10⁻²</u>	<u>Quantity</u> (kg)	<u>Kg/hectare</u>
Heterocyclics (4)	0.4	0.03	337	0.03
Miscellaneous (3)	0.6	0.05	246	0.02
Protein (1)	-	-	82	0.01
Sulphur (1)	-	-	196 803	14.91
TOTAL	1	0.08	197 470	14.97

Table A.3.12 Leading agrichemicals used in the Southern Region in POME FRUIT by kg in 1989.

<u>Generic name (Type)</u>	<u>Quantity (kgX1000)</u>	<u>Distribution of Usage</u>
Sulphur (2)	321 152	Grade IV toxin (relatively non-toxic)
Mineral Oil (Adjuvant and insecticide)	844 908	Grade IV toxin (relatively non-toxic)
Captab (3) (Pthalic Acid fungicide)	77 743	Grade IV
Azinphos- methyl (3) (Org Phos insecticide)	55 545	Grade I.
Simazine (2) (Triazine herbicide)	47 430	Grade IV.
Metiram (2) (Dithiocarb fungicide)	41 560	Grade III.
Copper Salts (2) (Fungicide)	40 630	Include grade II and III materials.
Glyphosate (2) (Herbicide)	38 875	Grade III.
Mancozeb (1) (Dithiocarbamate fungicide)	29 096	Grade IV.
Chlorpyrifos (3) (Org Phos insecticide)	20 736	Grade II.
DNOC (1) (Growth regulant and insecticide)	31 158	Grade I. Not used in Kouebokkeveld.
Endosulfan (4) (OrganoChlorine insecticide)	19 238	Grade I.
Paraquat (2) (Dipyridyl herbicide)	10 155	Grade II. But major cause of death due to accidental poisoning.

Table A.3.13 Leading agrichemicals used in the Southern Region in POME FRUIT by biological equivalents in 1989.

<u>Generic name (Type)</u>	<u>Biologic X103</u>	<u>Distribution of Usage</u>
Azinphos- Methyl (3) (OrganoPhos insecticide)	3 086	Grade I
DNOC (1)	944	Grade I
Endosulfan (4) (OrganoChlorine insecticide)	264	Grade I
Vanmidothion (1) (OrganoPhos insecticide)	178	Grade II
Chlorpyrifos (3) (OrganoPhos insecticide)	139	Grade II
Methidathion (1) (OrganoPhos insecticide)	69	Grade I
Paraquat (2)	68	Grade II
Azocyclotin (2)	61	Grade II
Copper Salts (6)	29	Grade II-III.

Table A.3.14 - Patterns of Agrichemical Usage in the Southern Cape Region: VINE SECTOR 1989 - Insecticides.

<u>Agrichemical Type (Number of diff types)</u>	<u>BEs/hectares X10⁻²</u>	<u>BEs/hectares x10⁻²</u>	<u>Quantity (kg)</u>	<u>Kg/hectare</u>
Organophosphates (11)	168	1.65	24 249	0.24
Carbamates (6)	24	0.24	5 275	0.05
Organochlorines (1)	3	0.03	238	<0.01
Pyrethroids (8)	1	0.01	240	<0.01
Insect Growth Regulators	-	-	-	-
Miscellaneous (2)	7	0.07	4 635	0.05
Sulphur	-	-	20 150	0.20
TOTAL	204	2.00	54 790	0.54

Table A.3.15 - Patterns of Agrichemical Usage in the Southern Cape Region: VINE SECTOR 1989 - Fungicides.

<u>Agrichemical Type</u> (Number of diff types)	<u>BEs/hectares</u> <u>X10²</u>	<u>BEs/hectares</u> <u>x10²</u>	<u>Quantity</u> <u>(kg)</u>	<u>Kg/hectare</u>
Dithiocarbamates (8)	6	0.06	47 120	0.46
Ergosterol Biosyn Inhibitors (3)	2	0.02	5 572	0.05
Copper (4)	123	1.21	104 657	1.03
Pthalic Acid (1)	0.4	<0.01	4 250	0.04
Carbamates (1)	<0.1	<0.01	100	<0.01
Heterocyclics (6)	3.3	0.03	11 555	0.11
Miscellaneous (8)	4.70	0.05	5 073	0.05
Sulphur (5)	-	-	1 959 732	19.21
Dinitrophenol (1)	0.5	<0.01	540	0.01
Urea (2)	0.4	<0.01	624	0.01
Organochlorine (1)	0.1	<0.01	800	0.01
TOTAL	141	1.38	2 149 780	21.08

Table A.3.16 - Patterns of Agrichemical Usage in the Southern Cape Region: VINE SECTOR 1989 - Herbicides.

<u>Agrichemical Type</u> (Number of diff types)	<u>BEs/hectares</u> <u>X10⁻²</u>	<u>BEs/hectares</u> <u>x10⁻²</u>	<u>Quantity</u> <u>(kg)</u>	<u>Kg/hectare</u>
Dipyridyls (Paraquat) (2)	156	1.53	25 440	0.25
Chlorphenoxy (1)	11	0.11	7 680	0.08
Miscellaneous herbicides (4)	0.2	<0.01	1 632	0.02
Glycine (Roundup) (2)	20	0.20	86 983	0.85
Triazines (1)	18	0.18	88 850	0.87
Heterocyclic (1)	0.3	<0.01	600	0.01
TOTAL	206	2.02	211 190	2.05

Table A.3.17 - Patterns of Agrichemical Usage in the Southern Cape Region: VINE SECTOR 1989 - Nematocides.

<u>Agrichemical Type</u> (Number of diff types)	<u>BEs/hectares</u> <u>X10⁻²</u>	<u>BEs/hectares</u> <u>x10⁻²</u>	<u>Quantity</u> <u>(kg)</u>	<u>Kg/hectare</u>
Ethylene Dibromide (1)	19	0.18	5 592	0.05
Carbamates (1)	7 500	72.82	7 500	0.07
Organophosphate (2)	98	0.95	1 670	0.02
Methyl Bromide	-	-	-	-
TOTAL	7 618	73.96	14 760	0.14

Table A.3.18 - Patterns of Agrichemical Usage in the Southern Cape Region: VINE SECTOR 1989 - Growth Regulants.

<u>Agrichemical Type</u> (Number of diff types)	<u>BEs/hectares</u> <u>X10⁻²</u>	<u>BEs/hectares</u> <u>x10⁻²</u>	<u>Quantity</u> <u>(kg)</u>	<u>Kg/hectare</u>
Cyanamide (1)	27.87	0.27	3 484	0.03
TOTAL	27.87	0.27	3 484	0.03

Table A.3.19 - Patterns of Agrichemical Usage in the Southern Cape Region: VINE SECTOR 1989 - Acaricides.

<u>Agrichemical Type</u> (Number of diff types)	<u>BEs/hectares</u> <u>X10⁻²</u>	<u>BEs/hectares</u> <u>x10⁻³</u>	<u>Quantity</u> <u>(kg)</u>	<u>Kg/hectare</u>
Organochlorine (1)	1	0.01	4 300	0.04
Organotin (1)	0.2	<0.01	120	<0.01
Miscellaneous (2)	0.3	<0.01	581	0.01
TOTAL	1.5	0.01	5 001	0.05

Table A.3.20 - Patterns of Agrichemical Usage in the Southern Cape Region: VINE SECTOR 1989 - Adjuvants/Miscellaneous.

<u>Agrichemical Type</u> (Number of diff types)	<u>BEs/hectares</u> <u>X10⁻²</u>	<u>BEs/hectares</u> <u>x10⁻³</u>	<u>Quantity</u> <u>(kg)</u>	<u>Kg/hectare</u>
Heterocyclics (3)	<0.1	<0.01	35	<0.01
Miscellaneous (2)	<0.1	<0.01	12	<0.01
TOTAL	<0.1	<0.01	47	<0.01

Table A.3.22 - Patterns of Agrichemical Usage in the Southern Cape Region: WHEAT SECTOR 1989 - Insecticides.

<u>Agrichemical Type</u> (Number of diff types)	<u>BEs/hectares</u> <u>X10⁻²</u>	<u>BEs/hectares</u> <u>x10⁻³</u>	<u>Quantity</u> <u>(kg)</u>	<u>Kg/hectare</u>
Organophosphates (10)	650	0.36	55 499	0.03
Pyrethroids (4)	1.4	<0.01	363	<0.01
TOTAL	651	0.36	55 860	0.03

Table A.3.23 - Patterns of Agrichemical Usage in the Southern Cape Region: WHEAT SECTOR 1989 - Fungicides.

<u>Agrichemical Type</u> (Number of diff types)	<u>BEs/hectares</u> <u>X10⁻²</u>	<u>BEs/hectares</u> <u>x10⁻²</u>	<u>Quantity</u> <u>(kg)</u>	<u>Kg/hectare</u>
Ergosterol Biosyn Inhibitors (6)	9	<0.01	20 611	0.01
Copper (2)	25	0.01	21 250	0.01
Carbamates (1)	<0.1	<0.01	1 152	<0.01
Heterocyclics (1)	11	0.01	9 412	0.01
Miscellaneous (2)	2	<0.01	2 225	0.01
Organochlorine (4)	26	0.01	40 929	0.02
TOTAL	73	0.04	95 580	0.05

Table A.3.24 - Patterns of Agrichemical Usage in the Southern Cape Region: WHEAT SECTOR 1989 - Herbicides.

<u>Agrichemical Type</u> (Number of diff types)	<u>BEs/hectares</u> <u>X10⁻²</u>	<u>BEs/hectares</u> <u>x10⁻²</u>	<u>Quantity</u> <u>(kg)</u>	<u>Kg/hectare</u>
-				
Dipyridyls (Paraquat) (4)	165	0.09	26 648	0.01
Chlorphenoxy (5)	189	0.10	118 426	0.06
Ureas (10)	2	<0.01	5 240	<0.01
Miscellaneous herbicides (8)	166	0.09	47 732	0.03
Glycine (Roundup) (1)	2	<0.01	8 334	<0.01
Triazines (1)	<0.1	<0.01	450	<0.01
TOTAL	525	0.29	206 830	0.11

Table A.3.25 - Patterns of Agrichemical Usage in the Southern Cape Region: WHEAT SECTOR 1989 - Seed Treatments.

<u>Agrichemical Type</u> (Number of diff types)	<u>BEs/hectares</u> <u>X10⁻²</u>	<u>BEs/hectares</u> <u>x10⁻²</u>	<u>Quantity</u> <u>(kg)</u>	<u>Kg/hectare</u>
Dithiocarbamates (2)	13	0.01	7 960	<0.01
Ergosterol Biosyn Inhibitors (3)	0.3	0.01	620	<0.01
Miscellaneous (3)	4	<0.01	8 410	<0.01
TOTAL	17	0.01	16 990	0.01

Table A.3.26 - Patterns of Agrichemical Usage in the Southern Cape Region: CITRUS SECTOR 1989 - Insecticides.

<u>Agrichemical Type</u> (Number of diff types)	<u>BEs/hectares</u> <u>X10⁻²</u>	<u>BEs/hectares</u> <u>x10⁻²</u>	<u>Quantity</u> <u>(kg)</u>	<u>Kg/hectare</u>
Organophosphates (16)	1 245	30.00	42 775	1.03
Carbamates (3)	90	2.17	1 960	0.05
Organochlorines (2)	1	0.02	95	<0.01
Pyrethroids (1)	56	1.35	2 880	0.07
Insect Growth Regulators (2)	0.2	<0.01	1 041	0.03
Miscellaneous (1)	<0.1	<0.01	45	<0.01
Oil	-	-	327 320	7.89
TOTAL 10.61	2 034	49.01	440 268	

Table A.3.27 - Patterns of Agrichemical Usage in the Southern Cape Region: CITRUS SECTOR 1989 - Fungicides.

<u>Agrichemical Type</u> (Number of diff types)	<u>BEs/hectares</u> <u>X10⁻³</u>	<u>BEs/hectares</u> <u>x10⁻³</u>	<u>Quantity</u> <u>(kg)</u>	<u>Kg/hectare</u>
Dithiocarbamates (1)	0.6	0.01	4 800	0.12
Ergosterol Biosyn Inhibitors (1)	0.2	<0.01	495	0.01
Copper (1)	10	0.24	8 670	0.21
Miscellaneous (2)	4.20	0.10	11 830	0.29
TOTAL	15	0.36	25 780	0.62

Table A.3.28 - Patterns of Agrichemical Usage in the Southern Cape Region: CITRUS SECTOR 1989 - Herbicides.

<u>Agrichemical Type</u> (Number of diff types)	<u>BEs/hectares</u> <u>X10⁻³</u>	<u>BEs/hectares</u> <u>x10⁻³</u>	<u>Quantity</u> <u>(kg)</u>	<u>Kg/hectare</u>
Dipyridyls (Paraquat) (1)	45	1.08	6 800	0.16
Chlorphenoxy (1)	11	0.27	4 032	0.10
Ureas (1)	1	0.02	7 040	0.17
Glycine (Roundup) (2)	3	0.07	14 182	0.34
Triazines (3)	0.5	0.01	2 400	0.06
TOTAL	61	1.47	35 030	0.84

Table A.3.29 - Patterns of Agrichemical Usage in the Southern Cape Region: CITRUS SECTOR 1989 - Nematocides.

<u>Agrichemical Type</u> (Number of diff types)	<u>BEs/hectares</u> <u>X10⁻³</u>	<u>BEs/hectares</u> <u>x10⁻³</u>	<u>Quantity</u> <u>(kg)</u>	<u>Kg/hectare</u>
Carbamates (1)	3 960	95.42	3 960	0.10
Organophosphate (2)	26	0.63	750	0.02
TOTAL	3 986	96.05	4 710	0.12

Table A.3.30 - Patterns of Agrichemical Usage in the Southern Cape Region: CITRUS SECTOR 1989 - Growth Regulants.

<u>Agrichemical Type</u> (Number of diff types)	<u>BEs/hectares</u> <u>X10⁻²</u>	<u>BEs/hectares</u> <u>x10⁻²</u>	<u>Quantity</u> <u>(kg)</u>	<u>Kg/hectare</u>
Arsenical (1)	20	0.48	1 283	0.03
Miscellaneous (1)	0.2	<0.01	20	<0.01
TOTAL	20.2	0.49	1 303	0.03

Table A.3.31 - Patterns of Agrichemical Usage in the Southern Cape Region: CITRUS SECTOR 1989 - Adjuvants/Miscellaneous.

<u>Agrichemical Type</u> (Number of diff types)	<u>BEs/hectares</u> <u>X10⁻²</u>	<u>BEs/hectares</u> <u>x10⁻²</u>	<u>Quantity</u> <u>(kg)</u>	<u>Kg/hectare</u>
Heterocyclics	-	-	40	<0.01
Miscellaneous	-	-	150 504	3.63
Protein	-	-	5 061	0.12
TOTAL	-	-	155 615	3.75

Table A.3.32 - Patterns of Agrichemical Usage in the Southern Cape Region: POTATO SECTOR 1989 - Insecticides.

<u>Agrichemical Type</u> (Number of diff types)	<u>BEs/hectares</u> <u>X10⁻²</u>	<u>BEs/hectares</u> <u>x10⁻²</u>	<u>Quantity</u> <u>(kg)</u>	<u>Kg/hectare</u>
Organophosphates (1)	5	0.07	70	<0.01
Pyrethroids (7)	0.7	<0.01	188	<0.01
TOTAL	5.7	0.08	258	<0.01

Table A.3.33 - Patterns of Agrichemical Usage in the Southern Cape Region: POTATO SECTOR 1989 - Fungicides.

<u>Agrichemical Type</u> (Number of diff types)	<u>BEs/hectares</u> <u>X10³</u>	<u>BEs/hectares</u> <u>x10³</u>	<u>Quantity</u> <u>(kg)</u>	<u>Kg/hectare</u>
Dithiocarbamates (1)	1	0.01	888	0.01
Copper (1)	1	0.01	1 020	0.01
Miscellaneous (2)	2	0.03	16 250	0.23
Sulphur (1)	-	-	9 768	0.14
Organochlorine (2)	1	0.01	7 770	0.11
Urea (1)	<0.1	<0.01	125	<0.01
TOTAL	5	0.07	35 820	0.51

Table A.3.34 - Patterns of Agrichemical Usage in the Southern Cape Region: POTATO SECTOR 1989 - Herbicides.

<u>Agrichemical Type</u> (Number of diff types)	<u>BEs/hectares</u> <u>X10³</u>	<u>BEs/hectares</u> <u>x10³</u>	<u>Quantity</u> <u>(kg)</u>	<u>Kg/hectare</u>
Dipyridyls (Paraquat) (1)	10	0.14	1 500	0.02
Ureas (1)	0.2	<0.01	665	0.01
Miscellaneous herbicides (1)	<0.1	<0.01	75	<0.01
Amide (3)	4	0.06	4 584	0.07
Triazines (1)	0.2	<0.01	1 170	0.02
TOTAL	14	0.02	8 000	0.11

Table A.3.32 - Patterns of Agrichemical Usage in the Southern Cape Region: POTATO SECTOR 1989 - Nematocides.

<u>Agrichemical Type</u> (Number of diff types)	<u>BEs/hectares</u> <u>X10⁻²</u>	<u>BEs/hectares</u> <u>x10⁻²</u>	<u>Quantity</u> <u>(kg)</u>	<u>Kg/hectare</u>
Ethylene Dibromide (1)	59	0.84	16 776	0.24
Carbamates (2)	4 121	58.87	4 325	0.06
Organophosphate (1)	381	5.44	6 480	0.09
TOTAL	4 561	65.16	27 580	0.39

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APPENDIX 3.4 - EXAMPLES OF OCCUPATIONAL AGRICHEMICAL EXPOSURE HISTORIES: APPLICATION OF A JEM

AGRICHEMICAL EXPOSURE : APPLICATION OF A JOB-EXPOSURE MATRIX

Example 1:

Mr JH, a 27 year old male, has worked on one farm all his life. The farm is a predominantly pome fruit producer. He started work at the age of 18. His total working years equals 9.

His job activities in the course of this job involve the following:

- a) Spraying chemicals while driving a tractor / mist blower. This included mixing of chemicals outdoors, but not indoors, as part of his job tasks. [K = 0.8; table 3.11]
He performed this activity for 2 years, for 4 days a week for 4 months of the year.

Cumulated days = 206 -----> * 0.8 = 164.8 weighted days

- b) Application of agrichemicals (insecticides) by means of a handgun. This also involved the mixing of agrichemicals outdoors as part of the same task. [K=0.8]
He performed this activity for 2 years for 3 days per week for 3 months.

Cumulated days = 77 -----> * 0.8 = 61.6 weighted days

- c) Mixing of agrichemicals outdoors [K=0.8] as a dedicated task for 3 years, for 4 days a week for 6 months of the year.

Cumulated days = 310 -----> * 0.8 = 248 weighted days

- d) Thinning of fruit trees [k=0.1] over 3 seasons - this meant working as a thinner for most days of the month for 3 months every season.

Cumulated days = 194 -----> * 0.1 = 19.4 weighted days

TOTAL CUMULATED WEIGHTED DAYS = 164.8 + 61.6 + 248 + 19.4 = 493.8

All these were in pome fruit farming. [Kg OP/hectare/year = 4.98]

Hence the Total Cumulated Weighted Kg OP/hectare days= 4.98
----- * 493.8
365

= 6.737 Kg OP / hectare

Since this was Mr JH's only job his

- Cumulated exposure is 6.737 Kg OP/hectare.
- Average lifetime exposure intensity is $6.737/9 = 0.749$
(Using Berberian, intensity = $\log(1+6.737/9) = 0.559$)
- Peak exposure = 103 days maximum in a year (mist blower, and mixing, same peak).

Example 2:

Mr LH is 30 years old. He has worked on four different farms in the course of his life. His first job started when he was 19 years old. His working life totals 11 years.

First job: (Worked on a pome fruit farm from age 19 to 23)

- a) Spraying chemicals while driving a tractor / mist blower. This included mixing of chemicals indoors as part of his job tasks. [K = 1.0; table 3.11]
He performed this activity for 4 years, for 5 days a week for 5 months of the year.

Cumulated days = 430 -----> * 1.0 = 430 weighted days

- b) Thinning of fruit trees [k=0.1] over 4 seasons - this meant working as a thinner for most days of the month for 3 months every season.

Cumulated days = 258 -----> * 0.1 = 25.8 weighted days

TOTAL CUMULATED WEIGHTED DAYS = 430 + 25.8 = 455.8 [POME]
Peak exposure in this job was 108 days in year (mist blower spraying).

Second job: (Worked on a pome fruit farm from age 23 to 24)

- a) Drove a tractor without spraying any chemicals for one year. No exposure to agrichemicals.

Cumulated days = 0 ----->

- b) Thinning of fruit trees [k=0.1] over 1 season - this meant working as a thinner for most days of the month for 3 months in the season.

Cumulated days = 65 -----> * 0.1 = 6.5 weighted days

TOTAL CUMULATED WEIGHTED DAYS = 6.5 [POME]
Peak exposure in this job was 6.5 days in the year

Third job: (Worked on a grape farm from age 24 to 26)

- a) Spraying chemicals while driving a tractor / mist blower. This included mixing of chemicals indoors as part of his job tasks. [K = 1.0; table 3.11]
He performed this activity for 2 years, for 5 days a week for 5 months of the year.

Cumulated days = 215 -----> * 1.0 = 215 weighted days

- b) Vineyard maintenance [k=0.05] over 2 seasons - this meant working in the vineyards for most days of the month for about 2.5 months every season.

Cumulated days = 108 -----> * 0.05 = 5.4 weighted days

TOTAL CUMULATED WEIGHTED DAYS = 215 + 5.4 = 220.4 [VINE]
Peak exposure in this job was 108 days in year (mist blower spraying).

Fourth job: (Worked on a pome fruit farm from age 26 to 30)

- a) Spraying chemicals while driving a tractor / mist blower. This included mixing of chemicals indoors as part of his job tasks. [K = 1.0; table 3.11]
He performed this activity for 4 years, for 5 days a week for 5 months of the year.

Cumulated days = 430 -----> * 1.0 = 430 weighted days

- b) Thinning of fruit trees [k=0.1] over 4 seasons - this meant working as a thinner for most days of the month for 2.5 months every season.

Cumulated days = 215 -----> * 0.1 = 21.5 weighted days

TOTAL CUMULATED WEIGHTED DAYS = 430 + 21.5 = 451.5 [POME]
Peak exposure in this job was 108 days in year (mist blower spraying).

Lifetime exposure:

1. Jobs 1, 2 and 4 in POME fruit farming:

Summing cumulated days over all pome jobs ----> 455.8 + 6.5 + 451.5
= 913.8 pome weighted days

Hence Total Cumulated Weighted Kg OP days/hectare years= 4.98 * 913.8
= 4550.7 Kg OP days / hectare years [Pome exposures]
or = 12.468 Kg OP/hectare [Pome exposures]

2. Job 3 in vineyards:

For vineyards, cumulated days are 220.4.

Hence Total Cumulated Weighted Kg OP days/hectare years= 0.24 * 220.4
= 52.9 Kg OP days / hectare years
or = 0.145 Kg OP/hectare [Vine exposures]

3. Total cumulative exposure

Summing Mr LH's job experiences over his working life:

- Cumulated exposure days (weighted for activity but unweighted for crop sector) is 913.8 + 220.4 = 1134.2 weighted days.
- Cumulated exposure weighted for crop sector is 12.468 + 0.145 = 12.613 Kg OP/hectare.
- Average lifetime intensity of exposure is 12.613/11 = 1.147
(Using Berberian, intensity = $\log(1+12.613/11) = 0.764$)
- Peak exposure = 108 days maximum exposure experienced in his first, third and last jobs.

Presenting this in a tabulated form:

I. Cumulative Exposure:

	Crop Sector	Cumulated days Weighted for job	Peak	Kg OP appl per ha yr	Kg OP/ ha
JOB 1:	Pome	455.8	108	4.98	6.219
JOB 2:	Pome	6.5	6.5	4.98	0.089
JOB 3:	Vine	220.4	108	0.24	0.145
JOB 4:	Pome	451.5	43	4.98	6.160
ALL JOBS:		===== 876.2 =====	===== 108 =====		===== 12.613 =====

II. Average Lifetime Intensity of Exposure

	Cumulative exposure	Working life yrs	Av lifetime Intens exp	
			Method 1	Method 2
Cumulated days weighted for job	876.2	11	79.7	4.391
Kg OP per hectare	12.613	11	1.15	0.764

$$\text{Method 1: Av lifetime int exp} = \frac{\text{Cumulative exposure}}{\text{Working life years}}$$

$$\text{Method 2: Av lifetime int exp} = \log \left[1 + \frac{\text{Cumulative exposure}}{\text{Working life years}} \right]$$

III. Peak Exposure

From the table above, the PEAK exposure was 108 spraying days.

Example 3:

Mr GP is a 45 year old farm worker. He has held 3 jobs in his life. He started work at the age of 13. His working life totals 32 years.

First job: (Worked on a pome fruit farm from age 13 to 19)

- a) Thinning of fruit trees [k=0.1] over 6 seasons - this meant working as a thinner for most days of the month for 3 months every season.

Cumulated days = 387 -----> * 0.1 = 38.7 weighted days

- b) Gardening work [K=0.05] over 6 years for 2 days a month.

Cumulated days = 144 -----> * 0.05 = 7.2 weighted days

TOTAL CUMULATED WEIGHTED DAYS = 38.7 + 7.2 = 45.9 [POME]

Peak exposure in this job was 65 days in a year (thinning).

Second job: (Worked for the municipality from age 19 to 27)

- a) Drove a truck without any contact with agrichemicals for one year. No exposure to agrichemicals.

Cumulated days = 0 ----->

Third job: (Worked on a pome fruit farm from age 27 to 45)

- a) Spraying chemicals while driving a tractor / mist blower. This included mixing of chemicals outdoors as part of his job tasks. [K = 0.8; table 3.11]

He performed this activity for 3 years, for 5 days a week for 3 months of the year.

Cumulated days = 194 -----> * 0.8 = 155.2 weighted days

- b) Thinning of fruit trees [k=0.1] over 18 seasons - this meant working as a thinner for most days of the month for 2 months every season.

Cumulated days = 774 -----> * 0.1 = 77.4 weighted days

TOTAL CUMULATED WEIGHTED DAYS = 232.6 [POME]

Peak exposure in this job was 65 days in the year (mist blower operator).

Lifetime exposure:

1. Jobs 1 and 3 in POME fruit farming:

Summing cumulated days over all pome jobs -----> 45.9 + 232.6
= 278.5 pome weighted days

Hence the Total Cumulated Weighted Kg OP/hectare days= 4.98 * 913.8
= 1386.9 Kg OP days / hectare years [Pome exposures]

or = 3.800 Kg OP / hectare [Pome exposures]

Summing Mr LH's job experiences over his working life:

- Cumulated exposure days (weighted for activity but unweighted for crop sector) is $913.8 + 220.4 = 278.5$ weighted days.
- Cumulated exposure weighted for crop sector is 3.800 Kg OP/hectare.
- Average lifetime intensity of exposure is $3.800/32 = 0.119$
(Using Berberian, intensity = $\log (1+1386.9/32) = 0.112$)
- Peak exposure = 65 days maximum exposure experienced in his first (thinning) and third (mist blower) jobs.

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Department of Community Health

University of Cape Town

TOESTEMMING

Ons doen hierdie navorsingsstudie om vas te stel of die aard van u werk enige moontlike effekte op u gesondheid het. Hierdie informasie sal gebruik word om veiligheid in die werksituasie te verbeter.

Vrae sal gevra word, ondersoeke sal gedoen word en bloedtoetse sal geneem word om die studie moontlik te maak.

Enige-iets wat u aan ons vertel en alle resultate van die ondersoeke sal vertroulik hanteer word - dit beteken dat slegs u (en die verpleegster op die plaas) kennis sal dra van die resultate en niemand anders sonder u toestemming daarvan kennis sal kan neem nie.

'n Algemene rapport van die studie sal aan die plase verskaf word, maar individuele resultate sal nie daarin geïdentifiseer kan word nie. Ons sal u resultate aan u stuur, behalwe as u dit nie wil hê nie. Sal u so vriendelik wees om enige van die ondersoekers in kennis te stel indien u die resultate NIE wil hê nie.

Hiermee gee ek my toestemming om aan hierdie studie deel te neem:

..... (handtekening)

INHOUDSOPGAWE**Bladsy**

A.	INLEIDING	1
	Vrae 1 - 6	
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B. LEWENSGESKIEDENIS

1. Waar is u gebore?

Naam van die plek:.....

Naam van die distrik:.....

Hoe lank het u daar gewoon?.....

2. Waar het u daarna gewoon?

Naam van die plek:.....

Naam van die distrik:.....

Hoe lank het u daar gewoon?.....

3. Waar het u daarna gewoon?

Naam van die plek:.....

Naam van die distrik:.....

Hoe lank het u daar gewoon?.....

4. Waar het u daarna gewoon?

Naam van die plek:.....

Naam van die distrik:.....

Hoe lank het u daar gewron?.....

5. Waar het u daarna gewoon?

Naam van die plek:.....

Naam van die distrik:.....

Hoe lank het u daar gewoon?.....

6. Waar het u daarna gewoon?

Naam van die plek:.....

Naam van die distrik:.....

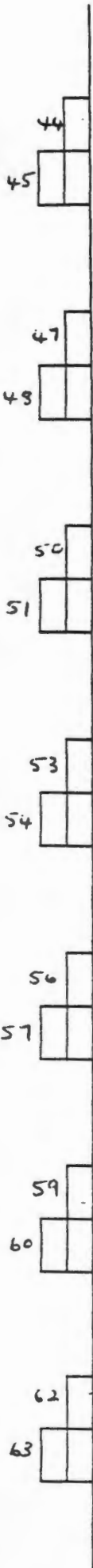
Hoe lank het u daar gewoon?.....

7. Waar het u daarna gewoon?

Naam van die plek:.....

Naam van die distrik:.....

Hoe lank het u daar gewoon?.....



8. Waar het u daarna gewoon?

Naam van die plek:.....

65

Naam van die distrik:.....

Hoe lank het u daar gewoon?

67

9. Waar het u daarna gewoon?

Naam van die plek:.....

68

Naam van die distrik:.....

Hoe lank het u daar gewoon?

70

10. Waar het u daarna gewoon?

Naam van die plek:.....

71

Naam van die distrik:.....

Hoe lank het u daar gewoon?

73

TABEL 1: Vir elke woonplek bo, vul die tabel in.

Tipe plek (sleutel)	Duur	Losies (Ja/Nee)
1.....
2.....
3.....
4.....
5.....
6.....
7.....
8.....
9.....
10.....

1	0	3		
				5
				9
				13
				17
				21
				25
				29
				33
				37
				41
				45



- SLEUTEL**
- 1. stad
 - 2. dorp
 - 3. klein dorp
 - 4. plaas
 - 5. plaas en ander plek
 - 6. klein dorp en ander plek
 - 7. ander

EERSTE PLAAS

46

PLEKNOMMER: PLEKNAAM:

1. Waarmee is daar geboer?

.....

.....

2. Waar was u huis geleë in verhouding met die naaste boord,
wingerd of landery (posisie) SLEUTEL (*)

.....

53

SLEUTEL:

1. in die landery / boord / wingerd
2. langs die landery / boord / wingerd (< 10 m)
3. oorkant die pad / rivier

Identifiseer 'n landmerk en vergelyk die afstande
met die afstande in die werker se situasie:

4. 10 - 100 m vanaf die landery / boord / wingerd
5. 100 - 1000 m vanaf die landery / boord / wingerd
6. >1000 m vanaf die landery / boord / wingerd

54

3. Is die boord, wingerd of landerye
met gifstowwe gespuit? 1.JA 2.NEE 3.NIE SEKER

INDIEN JA: Is die spuitwerk gedoen met behulp van 'n:

* Rugsak? 1.JA 2.NEE 3.NIE SEKER

* Trekker? 1.JA 2.NEE 3.NIE SEKER

* Vliegtuig? 1.JA 2.NEE 3.NIE SEKER

55

56

57

TWEEDE PLAAS

PLEKNOMMER: PLEKNAAM:

58

1. Waarmee is daar geboer?

60

.....
.....

62

64

2. Waar was u huis geleë in verhouding met die naaste boord, wingerd of landery (posisie) SLEUTEL (*)

.....

65

3. Is die boord, wingerd of landerye met gifstowwe gespuit? 1.JA 2.NEE 3.NIE SEKER

66

INDIEN JA:



Is die spuitwerk gedoen met behulp van 'n:			
* Rugsak?	1.JA	2.NEE	3.NIE SEKER
* Trekker?	1.JA	2.NEE	3.NIE SEKER
* Vliegtuig?	1.JA	2.NEE	3.NIE SEKER

67

68

69

DERDE PLAAS

PLEKNOMMER: PLEKNAAM:

70

1. Waarmee is daar geboer?

72

.....
.....

74

76

2. Waar was u huis geleë in verhouding met die naaste boord, wingerd of landery (posisie) SLEUTEL (*)

.....

77
1
4
5

3. Is die boord, wingerd of landerye met gifstowwe gespuit? 1.JA 2.NEE 3.NIE SEKER

76

INDIEN JA:



Is die spuitwerk gedoen met behulp van 'n:			
* Rugsak?	1.JA	2.NEE	3.NIE SEKER
* Trekker?	1.JA	2.NEE	3.NIE SEKER
* Vliegtuig?	1.JA	2.NEE	3.NIE SEKER

77

78

79

VIERDE PLAAS

10

PLEKNOMMER: PLEKNAAM:

1. Waarmee is daar geboer?

.....

.....

2. Waar was u huis geleë in verhouding met die naaste boord,
wingerd of landery (posisie) SLEUTEL (*)

.....

3. Is die boord, wingerd of landerye
met gifstowwe gespuit? 1.JA 2.NEE 3.NIE SEKER

INDIEN JA:

Is die spuitwerk gedoen met behulp van 'n:

* Rugsak? 1.JA 2.NEE 3.NIE SEKER

* Trekker? 1.JA 2.NEE 3.NIE SEKER

* Vliegtuig? 1.JA 2.NEE 3.NIE SEKER

VYFDE PLAAS

22

PLEKNOMMER: PLEKNAAM:

1. Waarmee is daar geboer?

.....

.....

2. Waar was u huis geleë in verhouding met die naaste boord,
wingerd of landery (posisie) SLEUTEL (*)

.....

3. Is die boord, wingerd of landerye
met gifstowwe gespuit? 1.JA 2.NEE 3.NIE SEKER

INDIEN JA:

Is die spuitwerk gedoen met behulp van 'n:

* Rugsak? 1.JA 2.NEE 3.NIE SEKER

* Trekker? 1.JA 2.NEE 3.NIE SEKER

* Vliegtuig? 1.JA 2.NEE 3.NIE SEKER

SESDE PLAAS

PLEKNOMMER: PLEKNAAM:

34

1. Waarmee is daar geboer?

36

38


40

2. Waar was u huis geleë in verhouding met die naaste boord, wingerd of landery (posisie) SLEUTEL (*)

41

3. Is die boord, wingerd of landerye met gifstowwe gespuit? 1.JA 2.NEE 3.NIE SEKER

42

INDIEN JA:  Is die spuitwerk gedoen met behulp van 'n:

* Rugsak?	1.JA	2.NEE	3.NIE SEKER
* Trekker?	1.JA	2.NEE	3.NIE SEKER
* Vliegtuig?	1.JA	2.NEE	3.NIE SEKER

43

44

45

SEWENDE PLAAS

PLEKNOMMER: PLEKNAAM:

46

1. Waarmee is daar geboer?

48

50


52

2. Waar was u huis geleë in verhouding met die naaste boord, wingerd of landery (posisie) SLEUTEL (*)

53

3. Is die boord, wingerd of landerye met gifstowwe gespuit? 1.JA 2.NEE 3.NIE SEKER

54

INDIEN JA:  Is die spuitwerk gedoen met behulp van 'n:

* Rugsak?	1.JA	2.NEE	3.NIE SEKER
* Trekker?	1.JA	2.NEE	3.NIE SEKER
* Vliegtuig?	1.JA	2.NEE	3.NIE SEKER

55

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AGSTE PLAAS

- 53
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- 68
- 69
- 70
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- 73
- 75
- 76
- 77
- 105
- 3
- 6
- 7
- 8

PLEKNOMMER: PLEKNAAM:

1. Waarmee is daar geboer?

.....
.....

2. Waar was u huis geleë in verhouding met die naaste boord, wingerd of landery (posisie) SLEUTEL (*)

.....

3. Is die boord, wingerd of landerye met gifstowwe gespuit? 1.JA 2.NEE 3.NIE SEKER

INDIEN JA:



Is die spuitwerk gedoen met behulp van 'n:

* Rugsak? 1.JA 2.NEE 3.NIE SEKER

* Trekker? 1.JA 2.NEE 3.NIE SEKER

* Vliegtuig? 1.JA 2.NEE 3.NIE SEKER

NEGENDE PLAAS

PLEKNOMMER: PLEKNAAM:

1. Waarmee is daar geboer?

.....
.....

2. Waar was u huis geleë in verhouding met die naaste boord, wingerd of landery (posisie) SLEUTEL (*)

.....

3. Is die boord, wingerd of landerye met gifstowwe gespuit? 1.JA 2.NEE 3.NIE SEKER

INDIEN JA:



Is die spuitwerk gedoen met behulp van 'n:

* Rugsak? 1.JA 2.NEE 3.NIE SEKER

* Trekker? 1.JA 2.NEE 3.NIE SEKER

* Vliegtuig? 1.JA 2.NEE 3.NIE SEKER

TIENDE PLAAS

PLEKNOMMER: PLEKNAAM:

4

1. Waarmee is daar geboer?

11
13
15

2. Waar was u huis geleë in verhouding met die naaste boord, wingerd of landery (posisie) SLEUTEL (*)

16

3. Is die boord, wingerd of landerye met gifstowwe gespuit? 1.JA 2.NEE 3.NIE SEKER

17

INDIEN JA:

Is die spuitwerk gedoen met behulp van 'n:

* Rugsak? 1.JA 2.NEE 3.NIE SEKER

18

* Trekker? 1.JA 2.NEE 3.NIE SEKER

19

* Vliegtuig? 1.JA 2.NEE 3.NIE SEKER

20

11. Het u ooit SAAM MET IEMAND in die huis gewoon wat:

a) Vir 'n firma gewerk het waar gifstowwe vervaardig is? 1.JA 2.NEE 3.NIE SEKER

21

INDIEN JA, gee die aantal jare:

23

b) Vir iemand gewerk wat gifstowwe versprei het? 1.JA 2.NEE 3.NIE SEKER

24

INDIEN JA, gee die aantal jare:

26

c) Gifstowwe in geboue teen plaes aangewend het? 1.JA 2.NEE 3.NIE SEKER

27

INDIEN JA, gee die aantal jare:

29

d) Gifstowwe gespuit het op 'n plaas 1.JA 2.NEE 3.NIE SEKER

30

INDIEN JA, gee die aantal jare en wie dit gedoen het:

32

12. Het u ooit naby 'n fabriek wat gifstowwe vervaardig gewoon? 1.JA 2.NEE 3.NIE SEKER

33

INDIEN JA, gee die aantal jare:

35

Handwritten notes:
all
198 = 56 mntk
97 = 7 - 17 mntk
dort

C. WERKSONDERVINDING

1. EERSTE WERK

1. Wat was u eerste werk? (ook deeltydse werk terwyl op skool of terwyl woonagtig by ouers of seisoenwerk op 'n plaas):

.....

2. Hoe oud was u toe u begin werk het?

3. Watter soort werkplek was dit?

4. Beskryf die werk wat u gedoen het (wat het u die meeste van die tyd gedoen?):

.....
.....

5. Waar was hierdie werk?
(Pleknaam en distrik)

2. TWEEDE WERK

1. Watse werk het u daarna gedoen?

.....

2. Hoe oud was u toe u die werk begin het?

3. Watter soort werkplek was dit?

4. Beskryf die werk: (die meeste van die tyd gedoen?):

.....
.....

5. Waar was hierdie werk?
(Pleknaam en distrik)

3. DERDE WERK

1. Watse werk het u daarna gedoen?

.....

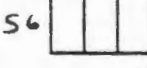
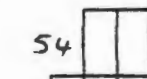
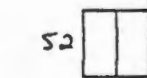
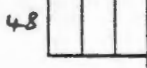
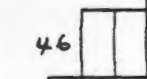
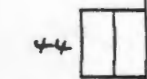
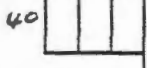
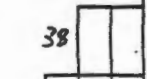
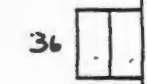
2. Hoe oud was u toe u die werk begin het?

3. Watter soort werkplek was dit?

4. Beskryf die werk: (die meeste van die tyd gedoen?):

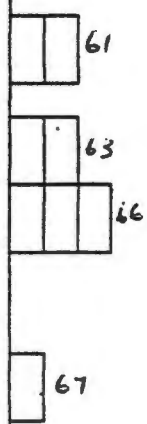
.....
.....

5. Waar was hierdie werk?
(Pleknaam en distrik)



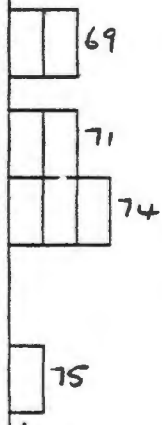
4. **VIERDE WERK**

1. Watse werk het u daarna gedoen?
.....
2. Hoe oud was u toe u die werk begin het?
3. Watter soort werkplek was dit?
4. Beskryf die werk: (die meeste van die tyd gedoen?):
.....
.....
5. Waar was hierdie werk?
(Pleknaam en distrik)



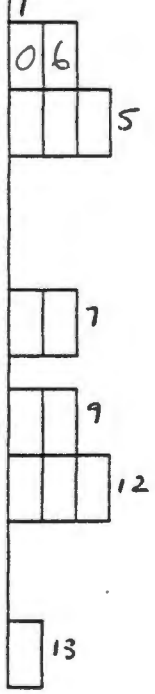
5. **VYFDE WERK**

1. Watse werk het u daarna gedoen?
.....
2. Hoe oud was u toe u die werk begin het?
3. Watter soort werkplek was dit?
4. Beskryf die werk: (die meeste van die tyd gedoen?):
.....
.....
5. Waar was hierdie werk?
(Pleknaam en distrik)



6. **SESDE WERK**

1. Watse werk het u daarna gedoen?
.....
2. Hoe oud was u toe u die werk begin het?
3. Watter soort werkplek was dit?
4. Beskryf die werk: (die meeste van die tyd gedoen?):
.....
.....
5. Waar was hierdie werk?
(Pleknaam en distrik)



7. SEWENDE WERK

1. Watse werk het u daarna gedoen?

.....

2. Hoe oud was u toe u begin werk het?

3. Watter soort werkplek was dit?

4. Beskryf die werk wat u gedoen het (wat het u die meeste van die tyd gedoen?):

.....

.....

5. Waar was hierdie werk?
(Pleknaam en distrik)

8. AGSTE WERK

1. Watse werk het u daarna gedoen?

.....

2. Hoe oud was u toe u die werk begin het?

3. Watter soort werkplek was dit?

4. Beskryf die werk: (die meeste van die tyd gedoen?):

.....

.....

5. Waar was hierdie werk?
(Pleknaam en distrik)

9. NEGENDE WERK

1. Watse werk het u daarna gedoen?

.....

2. Hoe oud was u toe u die werk begin het?

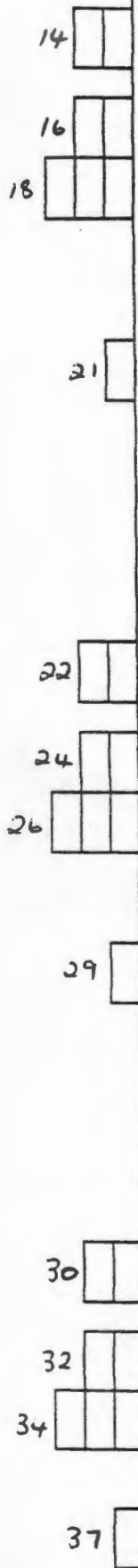
3. Watter soort werkplek was dit?

4. Beskryf die werk: (die meeste van die tyd gedoen?):

.....

.....

5. Waar was hierdie werk?
(Pleknaam en distrik)

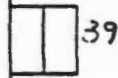


10. TIENDE WERK

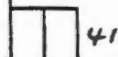
1. Watse werk het u daarna gedoen?

.....

2. Hoe oud was u toe u die werk begin het?



3. Watter soort werkplek was dit?



4. Beskryf die werk: (die meeste van die tyd gedoen?):

.....

.....



5. Waar was hierdie werk?
(Pleknaam en distrik)



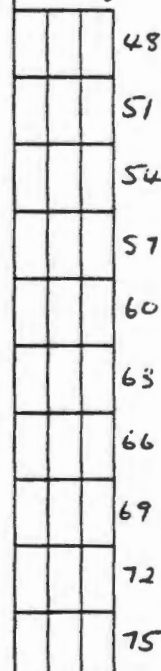
TABEL 2:

Dui vervolgens aan in watter kategorie elk van die voorafgaande soorte werk val, deur dit A, B, C of D te noem, soos hieronder aangedui:

- 1 Landbou - A
- 2 Bosbou - B
- 3 Gifstofvervaardiging, Fabriek of Vervoer - C
- 4 Munisipaliteit - D

As dit ander werk is - 0

Kategorie:	Jaar:
WERK 1:
WERK 2:
WERK 3:
WERK 4:
WERK 5:
WERK 6:
WERK 7:
WERK 8:
WERK 9:
WERK 10:.....



Handwritten notes:
 Type 1-2-3
 (less than 4) 1-6/12
 2-19-1 = 86
 3-6-1 = 66
 4-9-1 = 7-12/12
 5-1-6
 6-1-6

vul nou asb. die ooreenstemmende seksies oor spesifieke bedrywighede in: LANDBOU, BOSBOU, FABRIEK EN VERVOER, MUNISIPALITEIT
 *(word gevind in die ekstra leërs wat voorsien is)

1
07
3

11. **ANDER WERK**

* Is daar enige ander werk wat u voorheen gedoen het, wat u nog nie genoem het nie, waarin u kontak gehad het met gifstowwe?

1.JA 2.NEE 3.NIE SEKER

INDIEN JA:

.1 Watter soort werkplek was dit?

.2 Beskryf die werk: (wat het u die meeste van die tyd gedoen?):

.....

.3 Waar was hierdie werk? (Dorp of distrik)

.4 Vir hoe lank het u die werk gedoen?

Jare: Maande:

(Hoe oud was u toe u hierdie werk begin doen het en hoe oud was u toe u met die werk opgehou het)

As die werk een van die volgende bedrywighede is:

LANDBOU, BOSBOU, FABRIEK EN VERVOER, MUNISIPALITEIT

Vul dan die ooreestemmende seksies in (word gevind in die ekstra leërs wat voorsien is)

12. **CHECK VRAAG**

1. Het u ooit vir iemand gewerk:

15

* wat gifstowwe versprei het 1.JA 2.NEE

16

* wat geboue binne en buite teen pes gespuit het 1.JA 2.NEE

17

* waar u betrokke was by die aflewering van plaagdoder 1.JA 2.NEE

As die werker ja op enige van bogenoemde vrae beantwoord het:

➔ **VOLTOOI SEKSIE E**

[MAAR as die werker REEDS die WERK GENOEM HET, ignoreer die vraag en gaan na die volgende vraag 13]

13. BESKERMINGMONDERING

1. Het u beskermingsmondering gekry as u gifstowwe hanteer het? 1.JA 2.NEE

18

2. Watse beskermingsmondering het u gekry as u gifstowwe hanteer het?

	VRYLIK:	SPOOR AAN:	WAARVOOR?
1. Handskoene			
2. Masker Tipe: <input type="text"/>			
3. Oorpak			
4. Plastiek			
5. Ander Tipe: <input type="text"/>			

21

25

28

31

35

3. Hoe gereeld het u die gedra?

	1.ALTYD	2.MEESTE VAN DIE TYD	3.SOMS	4.NOOIT
Handskoene				
Masker				
Oorpak				
Plastiek				
Ander				

36

37

38

39

40

4. As u teen die einde van die dag klaargemaak het, wanneer het u die oorpak uitgetrek?

1. by die werk, voordat u huis toe is
2. nadat u by die huis gekom het of
3. net voordat u gaan slaap het?
4. ander (spesifiseer) :

41

5. Hoe gereeld het u die oorpak gewas of laat was?

1. elke dag
2. nie elke dag nie, maar meer as een keer per week
3. een keer per week
4. minder as een keer per week

42

6. Waar het u die oorpak gewas?

43

7. Is daar lopende water by u huis? 1.JA 2.NEE

44

14. GIF BY DIE HUIS

45

* Het u ooit gifstowwe huis toe geneem om daar te gebruik?
(bv. in u eie groentetuin) 1.JA 2.NEE

INDIEN JA:

46

a. Waarvoor?

48

b. Watter soort gif?

* Het u ooit leë gifstofhouers (kanne) huis toe geneem om te gebruik?

1.JA 2.NEE

50

51

INDIEN JA,

waarvoor?

.....
.....

D. HOUDING TEENOR VEILIGHEIDSMATREËLS

1. Hoe belangrik dink u is dit om handskoene te dra as u kontak het met plaagdoder?

- 1. Baie belangrik
- 2. Belangrik
- 3. Maak nie veel van 'n verskil nie
- 4. Van geen belang nie

53

2. Hoe belangrik dink u is dit om 'n masker te dra as u kontak het met plaagdoder?

- 1. Baie belangrik
- 2. Belangrik
- 3. Maak nie veel van 'n verskil nie
- 4. Van geen belang nie

54

3. Hoe belangrik dink u is dit om 'n oorpak te dra as u kontak het met plaagdoder?

- 1. Baie belangrik
- 2. Belangrik
- 3. Maak nie veel van 'n verskil nie
- 4. Van geen belang nie

55

4. Na u mening, wat is die gevaar wanneer u met gifstowwe werk?

57

5. Op watter manier kan 'n mens vergiftiging voorkom?

59

6. Dink u dat die manier waarop ander werkers met gifstowwe werk: (omkring die een wat gekies word)

- 1.veiliger is as u manier
- 2.dieselfde is as u manier
- 3.nie so veilig is soos u manier nie
- 4.kan nie duidelik antwoord gee nie

60

7. Kan 'n mens altyd beskermingsklere maklik gebruik?

Verduidelik verder :

.....

62

E. AKUTE BLOOTSTELLINGSGESKIEDENIS

1. Wanneer laas het u kontak gehad met plaagdoder, in die vorm van spuitwerk, meng of algemene hantering? (die datum of hoeveelheid weke gelede)

.....

2. Wanneer het u plaagdoder begin spuit, meng of hanteer hierdie seisoen?

.....

3. Gedurende die seisoen, hoe dikwels het u elke maand gespuit. Begin met die eerste maand van hierdie spuitseisoen:

63

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67

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1

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$\frac{2}{3}$ ↓ $\frac{3}{3}$

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15			
18			
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33			
36			
39			

42

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48

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TABEL 4:		
Maand:	Hoeveel weke per maand:	Hoeveel dae per week:
Januarie		
Februarie		
Maart		
April		
Mei		
Junie		
Julie		
Augustus		
September		
Oktober		
November		
Desember		
Januarie 1993		
Februarie		
Maart		

If had 5 wks / mtg
 reduce to 4.33 wks / mtg

F. HUISHOUDELIKE BLOOTSTELLING

1. Gebruik u enige plaagdoder in u tuin of by die huis? 1.JA 2.NEE

51

INDIEN JA:

1 Hoe lank gebruik u dit reeds?
Jare.....Maande.....

54

56

2 Wanneer laas het u dit gebruik?
*Laaste datum

60

3 Hoe gereeld het u plaagdoder gebruik in die afgelope 3 maande?
*Hoeveelheid kere.

62

4 Wanneer laas het u plaagdoder gekoop?
*Laaste datum

64

66

5 Wat is die naam van die plaagdoder?

68

6 Is u in die verlede blootgestel aan plaagdoder by die huis?

69

- 1.Gereeld 2.Soms 3.Amper nooit 4.Nooit

2. Het u 'n stokperdjie wat vereis dat u daaglik gom gebruik vir meer as 'n maand op 'n slag? 1.JA 2.NEE

70

3. Gebruik u enige middels wat hout langer behoue laat bly? (preserveermiddels) 1.JA 2.NEE

71

INDIEN JA:

1 Hoe gereeld gebruik u die preserveermiddels?
1.Gereeld 2.Soms 3.Amper nooit 4.Nooit

72

2 Noem die preserveermiddel wat u die meeste gebruik:

74

3 Vir hoeveel jaar gebruik u die preserveermiddel al?
Jare Maande

76

78

4 Is u voorheen blootgestel aan houtpreserveermiddels by die huis?

79

- 1.Gereeld 2.Soms 3.Amper nooit 4.Nooit

1
0 9

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4. Is daar enige iemand by die huis wat met plaagdoder werk? 1.JA 2.NEE 3.NIE SEKER

INDIEN JA:

1 Hoeveel mense by die huis werk met plaagdoder?

.....

2 Ten opsigte van elke persoon, die volgende :

PERSOON 1:

a.Waar werk die persoon?

b.Watse werk doen hy/sy?

c.Word die oorpak gewas voordat hy/sy huis toe kom elke dag?
1.JA 2.NEE 3.NIE SEKER

PERSOON 2:

a.Waar werk die persoon?

b.Watse werk doen hy/sy?

c.Word die oorpak gewas voordat hy/sy huis toe kom elke dag?
1.JA 2.NEE 3.NIE SEKER

PERSOON 3:

a.Waar werk die persoon?

b.Watse werk doen hy/sy?

c.Word die oorpak gewas voordat hy/sy huis toe kom elke dag?
1.JA 2.NEE 3.NIE SEKER

* Was u ooit aan gifstowwe blootgestel buite u werk? 1.JA 2.NEE 3.NIE SEKER

INDIEN JA,

1.Gereeld
2.Somtyds
3.Amper nooit

* Was dit:

* Vir hoe lank was u daaraan blootgestel?
.....jare en/ofmaande

3. NEUROLOGIESE SIMPTOME:

In die afgelope twee weke, het u enige van die volgende simptome gehad:

* MAAGPYN	1.JA 2.NEE	34
Indien wel, het dit vir meer as drie maande aangehou?	1.JA 2.NEE	35
* GEVOEL DAT U WIL OPGOOI	1.JA 2.NEE	36
Indien wel, het dit vir meer as drie maande aangehou?	1.JA 2.NEE	37
* LIGHOOFDIGHEID	1.JA 2.NEE	38
Indien wel, het dit vir meer as drie maande aangehou?	1.JA 2.NEE	39
* MOEILIK GEVIND OM TE LOOP	1.JA 2.NEE	40
Indien wel, het dit vir meer as drie maande aangehou?	1.JA 2.NEE	41
* GEVOELLOOSHEID IN HANDE OF VOETE	1.JA 2.NEE	42
Indien wel, het dit vir meer as drie maande aangehou?	1.JA 2.NEE	43
* PRIKKELSENSASIE IN HANDE OF VOETE	1.JA 2.NEE	44
Indien wel, het dit vir meer as drie maande aangehou?	1.JA 2.NEE	45
* OORPYN	1.JA 2.NEE	46
Indien wel, het dit vir meer as drie maande aangehou?	1.JA 2.NEE	47
* TAMHEID IN ARMS EN BENE	1.JA 2.NEE	48
Indien wel, het dit vir meer as drie maande aangehou?	1.JA 2.NEE	49
* PYN IN ARMS EN BENE	1.JA 2.NEE	50
Indien wel, het dit vir meer as drie maande aangehou?	1.JA 2.NEE	51
* LOOPNEUS	1.JA 2.NEE	52
Indien wel, het dit vir meer as drie maande aangehou?	1.JA 2.NEE	53
* KOPSEER	1.JA 2.NEE	54
Indien wel, het dit vir meer as drie maande aangehou?	1.JA 2.NEE	55
* LOMERIGHEID	1.JA 2.NEE	56
Indien wel, het dit vir meer as drie maande aangehou?	1.JA 2.NEE	57
* SWAAR GEVOEL OP U BORS	1.JA 2.NEE	58
Indien wel, het dit vir meer as drie maande aangehou?	1.JA 2.NEE	59
* MOEGHEID	1.JA 2.NEE	60
Indien wel, het dit vir meer as drie maande aangehou?	1.JA 2.NEE	61

H. GESKIEDENIS VAN ROOKGEWOONTES

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18

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1. Rook u tans?

1 JA (gaan na 3.)

2 NEE (gaan na 2.)

2. Het u al ooit voorheen gerook?

1 JA (gaan na 3.)

2 NEE (STOP hier)

3. Hoe oud was u toe u begin rook het? jaar

1g pipe = 1 cig tobacco

4. Wat rook u / het u gerook?

- 1. Sigarette
- 2. Pyp
- 3. Albei

Equivalent

Tobacco	Cigs
1-10g	< 10c/day
11-30g	< 20cig/day
> 30g	> 20cig/day

5. Hoeveel rook u / het u gerook?

- Sigarette per dag:

- 1. Minder as 10 ¹⁰ 10/day
- 2. 10 tot 19 ¹⁴⁰
- 3. 20 tot 29 ²¹⁰
- 4. 30 en meer ²¹⁰
- 5. Ander:.....

- Pyptabak per week:

- 1. Klein pakkie = 25g ^{12,5}
- 2. Medium pakkie = 25g ²⁵
- 3. Groot pak = 100g ¹⁰⁰
- 4. Ander:

INDIEN TANS 'N ROKER:

6. Het u in die verlede meer of minder as nou gerook?
1 JA (gaan na .1) 2 NEE (gaan na 8.)

.1 Hoeveel het u altyd gerook?

- Sigarette per dag:
- 1. Minder as 10
 - 2. 10 tot 19
 - 3. 20 tot 29
 - 4. 30 en meer
 - 5. Ander:

- Pyptabak per week:
(wys verskillende groottes pakkies: groot, medium en klein)

- 1. Klein pakkie
- 2. Medium pakkie
- 3. Groot pakkie
- 4. Ander:

.2 Vir hoe lank (getal weke, maande of jare) het u soveel gerook?

.....

INDIEN 'N ROKER IN DIE VERLEDE:

7. Hoe oud was u toe u ophou rook het?

.....

		21
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8. Snuif of pruim u tabak?

- 1. Snuif
- 2. Pruim
- 3. Albei
- 4. Geen

		22
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9. Het u al ooit dagga probeer?

1 JA

2 NEE

INDIEN JA:

INDIEN NEE: STOP hier

		23
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Rook u nou dagga?

1 JA

2 NEE

INDIEN JA:

INDIEN NEE: STOP hier

		24
--	--	----

a) Hoe gereeld rook u dagga?

- 1. elke dag
- 2. nie elke dag nie, maar meer as een keer per week
- 3. minder as een keer per week
- 4. partykeer, maar minder as een keer per maand
- 5. nooit

		25
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b) Het u ooit meer (of minder) as nou gerook?

1 JA

2 NEE

INDIEN JA:

(STOP hier)

		26
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* Hoe gereeld het u dagga gerook?

- 1. elke dag
- 2. minder as elke dag maar meer as een keer per week
- 3. minder as een keer per week
- 4. partykeer, maar minder as een keer per maand
- 5. nooit

		27
--	--	----

* Vir hoe lank (weke, maande, jare) het u soveel dagga gerook?

.....

		29
		30

I. GESKIEDENIS VAN ALKOHOLGEBRUIK

1. Neem u tans alkohol?

1 JA
(gaan na 3.)

2 NEE
(gaan na 2.)

2. Het u voorheen alkohol geneem?

JA
(gaan na 3.)

NEE
(stop hier)

3. Hoeveel drink u / het u gedurende die week gedrink?

	Bier	Wyn	"Harde hout"	Tuisgebrou
Maandag tot Donderdag
Vrydag
Saterdag
Sondag

SLEUTEL:

Bier dumpie: A	Wyn kan: F	Glase: L tot N
Bier quart: B	Wyn bottel: G	Beker: P
Bier "Pint": C	Boks Wyn (5liter): H	
Bier blik: D	Boks Wyn (2 liter): HH	
Bier lang blik: E		
Brandewyn half jack: I	Brandewyn quarter jack: J	
Brandewyn 750 ml: K	Brandewyn 1 liter: KK	

4. Hou oud was u toe u begin drink het? jaar

5. **INDIEN HY ALKOHOL SLEGS VOORHEEN GENEEM HET:**

* Hoe oud was u toe u ophou drink het? jaar

* Hoeveel jaar lank het u gedrink? jaar

* Hoekom het u opgehou?

.....

6. VIR BEIDE DIE WAT TANS ALKOHOL NEEM EN DIE
WAT IN DIE VERLEDE ALKOHOL GENEEM HET

Maat 12/25

Case 4/4.

* Wanneer u na 'n vriend toe gaan / gegaan het vir 'n drankie of as u na 'n kroeg toe gaan / gegaan het saam met vriende, hoeveel drankies drink u / het u gedrink?

50

age * Het u (al) ooit gevoel dat u minder moet drink? 1.JA 2.NEE

51

Case * Het mense u (al) ooit kwaad gemaak deur u drinkgewoontes te kritiseer? 1.JA 2.NEE

52

Case * Het u (al) ooit sleg of skuldig gevoel omdat u drink? 1.JA 2.NEE

53

Case * Het u (al) ooit vroeg in die oggend 'n drankie gedrink om u beter te laat voel of om oor uabelaas (hang over) te kom? 1.JA 2.NEE

54

Maat * Dink u u drinkgewoontes is / was normaal? 1.JA 2.NEE 3.WEET NIE

55

Maat * Het dit (al) ooit met u gebeur dat u wakkerword in die oggend nadat u die vorige aand gedrink het en nie kan onthou wat als die vorige aand gebeur het nie? 1.JA 2.NEE 3.NIE SEKER

56

Maat * Kan / kon u maklik ophou drink na een of twee drankies? 1.JA 2.NEE 3.NIE SEKER

57

Maat * Dink u vriende of familie / het u vriende of familie gedink dat u normale drinkgewoontes het / gehad het? 1.JA 2.NEE 3.NIE SEKER

58

Maat * Was u (al) ooit in die hospitaal as gevolg van drank? 1.JA 2.NEE

59

Maat * Het u (al) ooit vriende of 'n meisie verloor as gevolg van drank? 1.JA 2.NEE

60

Maat * Het u (al) ooit u familie afgeskeep as gevolg van drank? 1.JA 2.NEE

61

Maat * Het u (al) ooit u verantwoordelikhede (bv. by die werk) afgeskeep as gevolg van drank? 1.JA 2.NEE 3.NIE SEKER

62

Maat * Het u (al) ooit, agv drank gehalusineer (skimbeelde gesien), of stemme gehoor wat agterna nie daar is / was nie en het u onbeheerbaar gebewe? 1.JA 2.NEE

63

Maat * Het u (al) ooit na iemand toe gegaan (bv. 'n dokter, verpleegster, 'n vriend of iemand by die werk) om u te help met u drinkgewoontes? 1.JA 2.NEE

64

Mast

65

66 X X

68 X

70 X X

72 X

* Het u (al) ooit in die moeilikheid gekom by die werk as gevolg van drank? 1.JA 2.NEE

* Wat dink u is normale drinkgewoontes?
(Getal drankies per dag)

* Wat dink u is abnormale drinkgewoontes? (d.w.s te veel)
(Getal drankies per dag)

7. **INDIEN HY TANS ALKOHOL NEEM:**

Het u ooit in die verlede meer (of minder) as nou gedrink?
1 JA (gaan na a) 2 NEE (gaan na 8)

a) Hoeveel het u gedurende hierdie periode gedrink?

	Bier	Wyn	"Harde hout"	Tuisgebrou
Maandag tot Donderdag
Vrydag
Saterdag
Sondag

* Vir hoe lank (weke, maande, jare) het u soveel gedrink?

.....

8. Gedurende die afgelope week, van verlede Woensdag af, het u drinkpatroon verskil van die gewone?
1.JA 2.NEE 3.NIE SEKER

INDIEN JA, beskryf:

	Bier	Wyn	"Harde hout"	Tuisgebrou
Maandag tot Donderdag
Vrydag
Saterdag
Sondag

Werker se naam:

Huidige Plaasnaam:.....

SUBSEKSIE A: LANDBOU

1. Watter werk is nou ter sprake? (die eerste, tweede, derde,....., neende of tiende, soos bo genoem)

.....

2. Waarmee is daar geboer op die plaas? (Begin met die belangrikste produkte)

.....

.....

.....

3. Het u permanent, of net tydens die seisoen op die plaas gewerk?

.....

1) Hoe lank het u hierdie werk gedoen?

(Jare of maande)

Begin: Ophou:

2) In die werk was daar vir u wyn gegee op die plaas?

- 1. Nooit
- 2. Soms
- 3. Elke dag

1		
5		
7		
9		
11		
13		
14		
16		
18		
19		

4. Het u enige van die volgende take gedoen terwyl u hier gewerk het:

1 TREKKER BESTUUR

1.JA 2.NEE

INDIEN JA, het dit enige van die volgende behels:

.1 Gifstowwe met 'n spuitpomp gespuit? 1.JA 2.NEE

Indien Ja, was u die hoofspuitman? 1 JA 2 NEE

.2 Trekker bestuur terwyl ander werkers van agter op die trekker met handspuite gif gespuit het? 1.JA 2.NEE

.3 Gifstowwe buitekant afgemeet of gemeng? 1.JA 2.NEE

.4 Gifstowwe in 'n gebou afgemeet of gemeng? 1.JA 2.NEE

2 GIFSTOWWE SELF AANGEWEND PER HANDSPUIT VAN AGTER OP 'N TREKKER

1.JA 2.NEE

INDIEN JA, sluit dit enige van die volgende in:

.1 Meng of uitmeet van gif in 'n toe kamer? 1.JA 2.NEE

.2 Meng of uitmeet van gif buitekant? 1.JA 2.NEE

.3 Het u insekdoder of onkruidodder of albei gespuit? 1.INSEKD 2.ONKRUIDD 3.ALBEI

As die werker nie kan onthou nie, vra dan:

Het u die gif op die grond gespuit of op die plante?

SLEUTEL:

1.Op die plante: INSEKD
2.Op die grond: ONKRUIDD

3 GIF GESPUIT MET BEHULP VAN 'N RUGSAK

1.JA 2.NEE

INDIEN JA, het dit enige van die volgende behels:

.1 Meng of uitgooi en afmeet van gif in 'n toe kamer? 1.JA 2.NEE

.2 Meng of uitgooi en afmeet van gif buitekant? 1.JA 2.NEE

.3 Die spuit van insekdoders, onkruidodders of albei? 1.INSEKD 2.ONKRUIDD 3.ALBEI

As die werker nie kan onthou nie, vra dan:

Het u die gif op die grond gespuit of op die plante?

SLEUTEL:

1.Op die plante: INSEKD
2.Op die grond: ONKRUIDD

4 GIFSTOWWE GEMENG OF UITGEGOOI EN AFGEMEET
 (Anders as werk 1 tot 3) 1.JA 2.NEE
 INDIEN JA:

.1 Het u dit ooit in 'n toe kamer gedoen? 1.JA 2.NEE
 .2 Het u dit ooit buitekant gedoen? 1.JA 2.NEE

5 'N CHEMIESE MIDDEL - DORMEX - OP BOME OF IN WINGERDE EN
 LANDERYE AANGEWEND MET 'N VERFKWAS OF RUGSAK OF MET 'N
 HANDSPUIT? 1.JA 2.NEE

6 SLEGS GRAANBOERDERYE

AS MERKER GEDIEN HET VIR 'N VLIEGTUIG WAT DIE LANDERYE
 MET GIF SPUIT? 1.JA 2.NEE

7 AS WERKTUIGKUNDIGE GEWERK MET 'n SPUITPOMP TREKKER
 MET DIE VERANTWOORDELIKHEID OM DIT IN STAND TE HOU
 OF GEREEDSKAP SKOONGEMAAK WAT VIR SPUITWERK GEBRUIK IS.

1 JA 2 NEE

8 SLEGS VRUGTEBOERDERYE

.1 HET U OOIT VRUGTE UITGEDUN? 1.JA 2.NEE
 .2 HET U OOIT AS MONITORPERSOON GEWERK? 1.JA 2.NEE

9 SLEGS WINGERDE

HET U ENIGE VAN DIE VOLGENDE GEDOEN:

.1 Onderhoudswerk in die seisoen? 1.JA 2.NEE
 .2 Met die suier gewerk? 1.JA 2.NEE
 .3 Lote vasgemaak aan rankrame? 1.JA 2.NEE
 .4 Trosse geëes? 1.JA 2.NEE
 .5 Druie uitgedun? 1.JA 2.NEE

10 IN DIE WINGERDE OF BOORDE GEWERK TERWYL DAAR GESPUIT IS?
 (anders as 8 en 9) 1.JA 2.NEE

11 TUINWERK IN DIE BOER SE TUIN GEDOEN? 1.JA 2.NEE

12 VEE GEDIP? 1.JA 2.NEE

13 HET U IN HIERDIE WERK ENIGE ANDER KONTAK MET GIFSTOWWE
 GEHAD? 1.JA 2.NEE

INDIEN JA, spesifiseer:

.....

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37
38
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52
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1-3 = 1
 4-6 = 2

INDIEN ENIGE VAN VOORAFGAANDE JA IS, VUL VOLGENDE TABEL IN:

TABEL A:

Hoeveel jaar lank het u hierdie werk gedoen?

Noem die maande van die jaar:

Hoeveel dae per week?

Soort werk:	Jare:	Maande vd jaar:	Dae/week:
1. Spuit (trekker) *	3	2	5x
*

2. Handspuit			
3. Rugsak *			
*

4. Meng *			
*

5. Dormex			

4.3. x 2 x 7

5

9	10	25	

1025

1025 m m d

63

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7

71			

1

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6

10			

14

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Werker se naam:

Huidige Plaasnaam:

1	
5	

SUBSEKSIË B: BOSBOU

1. Watter werk is nou ter sprake? (die eerste, tweede, derde,....., neende of tiende, soos bo genoem)

7

2. Watter tipe bosbou

9
11
13

3. Hoe lank het u hierdie werk gedoen? (Jare of maande)

Begin: Ophou:

15
17

4. Het u enige van die volgende take gedoen terwyl u hier gewerk het:

1 TRKKKER BESTUUR 1.JA 2.NEE

18

INDIEN JA, het dit enige van die volgende behels:

- .1 Gifstowwe met 'n spuitpomp gespuit? 1.JA 2.NEE
- .2 Trekker bestuur terwyl ander werkers van agter op die trekker met handspuite gif gespuit het? 1.JA 2.NEE
- .3 Gifstowwe buitekant afgemeet of gemeng? 1.JA 2.NEE
- .4 Gifstowwe in 'n gebou afgemeet of gemeng? 1.JA 2.NEE

19
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21
22

2 GIFSTOWWE SKLF AANGEWEND PER HANDSPUIT VAN AGTER OP 'N TREKKER 1.JA 2.NEE

23

INDIEN JA, sluit dit enige van die volgende in:

- .1 Meng of uitmeet van gif in 'n toe kamer? 1.JA 2.NEE
- .2 Meng of uitmeet van gif buitekant? 1.JA 2.NEE
- .3 Het u insekdoder of onkruidodder of albei gespuit? 1.INSEKD 2.ONKRUIDD 3.ALBEI

24
25
26

As die werker nie kan onthou nie, vra dan:

- Het u die gif op die grond gespuit of op die plante? 1.Op die plante: INSEKD 2.Op die grond: ONKRUIDD

27

28 3 GIF GESPUIT MET BEHULP VAN 'N RUGSAK 1.JA 2.NEE

INDIEN JA, het dit enige van die volgende behels:

- 29 .1 Meng of uitgooi en afmeet van gif in 'n toe kamer? 1.JA 2.NEE
- 30 .2 Meng of uitgooi en afmeet van gif buitekant? 1.JA 2.NEE
- 31 .3 Die spuit van insekdoders, onkruidodders of albei? 1.INSEKD 2.ONKRUIDD 3.ALBEI

As die werker nie kan onthou nie, vra dan:

Het u die gif op die grond gespuut of op die plante?

32 SLKUTKL:

1.Op die plante:

INSEKD

2.Op die grond:

ONKRUIDD

33 4 GIFSTOWWE GEMENG OF UITGEGOOI EN AFGEKUKET (Anders as werk 1 tot 3) 1.JA 2.NEE
INDIEN JA:

- 34 .1 Het u dit ooit in 'n toe kamer gedoen? 1.JA 2.NEE
- 35 .2 Het u dit ooit buitekant gedoen? 1.JA 2.NEE

36 5. AS MERKER GEDIEN HET VIR 'N VLIEGTUIG WAT DIE PLANTASIE MET GIF SPUIT? 1.JA 2.NEE

37 6 AS WERKTUIGKUNDIGE GEWERK MET 'n SPUITPOMP TREKKER MET DIE VERANTWOORDELIKHEID OM DIT IN STAND TE HOU OF GERREKSKAP SKOONGEMAAK WAT VIR SPUITWERK GEBRUIK IS. 1 JA 2 NEE

38 7 TUINWERK BY DIE BOSBOUSTASIE GEDOEN? 1.JA 2.NEE

INDIEN ENIGE VAN VOORAFGAANDE JA IS, VUL VOLGENDE TABKL IN:

TABKL A:
 Hoeveel jaar lank het u hierdie werk gedoen?
 Noem die maande van die jaar:
 Hoeveel dae per week?

Soort werk:	Jare:	Maande vd jaar:	Dae/week:
Spuit * (trekker)			
*
Rugsak *			
*
Handspuit (Van agter op 'n trekker)			
Meng *			
*
As merker. opgetree			
Instandhou- ding van gereedskap			
Tuinwerk			

42
46
50
54
58
62
66
70
74
78

8. Beskermingsmondering

1. Het u beskermingsmondering gekry in die bogenoemde werk? **1.JA 2.NEE**
2. Watse beskermingsmondering het u gekry as u gifstowwe hanteer het?

	VRYLIK:	SPOOR AAN:	WAARVOOR?
1. Handskoene			
2. Masker Tipe: <input type="text"/>			
3. Oorpak			
4. Plastiek			
5. Ander Tipe: <input type="text"/>			

VERGIFTIGING IN HIERDIE WERK

9. Het u ooit siek geword in hierdie werk van gifstowwe? **1.JA 2.NEE**

INDIEN JA:

1. Beskryf die omstandighede en die oorsaak en gevolg:

.....

2. Het u 'n dokter besoek? **1.JA 2.NEE**

3. Is u in die hospitaal opgeneem? **1.JA 2.NEE**

INDIEN JA, moes u daar oorbly? **1.JA 2.NEE**

HOSPITAAL se naam:

4. Moes u uit die werk wegbly? **1.JA 2.NEE**

Werker se naam:

Plaasnaam:

SUBSEKSIE D: MUNISIPALITEIT

1. Watter werk is nou ter sprake? (die eerste, tweede, derde,....., neende of tiende, soos bo genoem)
.....
2. Watter tipe werk het u by die munisipaliteit gedoen?
.....
.....
3. Vir hoe lank het u hierdie werk gedoen?
(jare of maande)
Begin: Opgehou:
4. Het u enige van die volgende soorte werk daar gedoen:
 - 1) Langs die pad, in parke of tuine gespuit? 1.JA 2.NEE
 - 2) Plaagdoder gemeng, verpak of gestoor? 1.JA 2.NEE
 - 3) Het u in u werk enige ander kontak met plaagdoder gehad? 1.JA 2.NEE 3.NIE SEKER

INDIEN JA, vertel meer daarvan:
.....
.....
.....
.....

1

5

7

9

11

13

14

15

16

18

INDIEN ENIGE VAN DIE VOORAFGAANDE JA IS, VUL DIE VOLGENDE TABEL IN:

TABEL D:

Hoeveel jaar het u die werk gedoen?
 ↓
 Hoeveel maande vd jaar het u dit gedoen?
 ↓
 Hoeveel dae per week?
 ↓

Werkstipe:	Jare:	Maande per Jaar:	Dae per Week:
1. Spuitwerk			
2. Meng			
3. Ander kontak			

4. BESKERMINGSMONDERING.

- 31 1. Het u beskermingsmondering gekry in die bogenoemde werk 1.JA 2.NEE
2. Watse beskermingsmondering het u gekry en waarvoor?

	VRYLIK:	SPOOR AAN:	WAARVOOR?
32 <input type="checkbox"/> 1. Handskoene			
3 <input type="checkbox"/> 2. Masker Tipe: <input type="text"/>			
3 <input type="checkbox"/> 3. Oorpak			
3 <input type="checkbox"/> 4. Ander Tipe: <input type="text"/>			

5. VERGIFTIGING IN HIERDIE WERK

46 * Het u ooit in hierdie werk siek geword van die gifstowwe? 1.JA 2.NEE

INDIEN JA:

47 1 Beskryf die omstandighede en die oorsaak en gevolg:

49 2 Het u 'n dokter besoek? 1.JA 2.NEE

50 3 Is u in die hospitaal opgeneem? 1.JA 2.NEE

51 INDIEN JA, moes u daar oorbly? 1.JA 2.NEE

HOSPITAAL se naam:

52 4 Moes u uit die werk wegbly? 1.JA 2.NEE

Werker se naam:

Plaasnaam:

1

5

--	--

7

SUBSEKSIE E: CHECK VRAAG - ANDER WERK

[HIERDIE VRAAG IS NET VIR WERKERS WAT JA GEANTWOORD HET OP VRAAG 12]

TABEL E:

1. Het u enige van die volgende gedoen?

2. Hoeveel jaar het u die werk gedoen?

3. Hoelank het u dit in die jaar gedoen?

Werkstipe	Jare	Dae, weke of maande in die jaar:
1. Aflewering		
2. Aanmaak en demonstrasie		
3. Storing, verpakking		
4. Ander kontak		

--	--	--	--

11

--	--	--	--

15

--	--	--	--

19

--	--	--	--

23

BESKERMINGSMONDERING

) Het u beskermingsmondering gekry as u bogenoemde werk gedoen het? 1. JA 2. NEE

--

24

) Watse beskermingsmondering het u gekry en waarvoor?

	VRYLIK:	SPOOR AAN:	WAARVOOR?
1. Handskoene			
2. Masker Tipe:			
3. Oorpak			
4. Ander Tipe:			

--	--	--

27

--	--	--

31

--	--	--

34

--	--	--

38

5. VERGIFTIGING IN HIERDIE WERK

39

* Het u ooit siek geword van die gifstowwe? 1.JA 2.NEE

INDIEN JA:

1 Beskryf die omstandighede en die oorsaak en gevolg:

.....
.....

2 Het u 'n dokter besoek? 1.JA 2.NEE

3 Is u in die hospitaal opgeneem? 1.JA 2.NEE

INDIEN JA, moes u daar oorbly? 1.JA 2.NEE

HOSPITAAL se naam:

4 Moes u uit die werk wegbly? 1.JA 2.NEE

40

42

43

44

45

PART 1

CARD 1

Questionnaires

1.1 Screening Questionnaire

The results of this screening questionnaire determine whether the test session will be full length or abbreviated.

1	3
1	2

Subject Study Number

--	--	--

Neuropsychology Number¹

3	4	5
---	---	---

Tester number

--	--	--

Result file name (including flags)

15	16	17	18	19	20	21	22	23	24	25				
F L A G S					L E T T E R S			N U M B E R						

TESTER'S NOTE: letters start in leftmost square;
numbers end with units in rightmost square

FLAGS AND ACTION

B = Brain injury

N = Cannot recognise numbers

Omit 3-1, 3-5 to 3-8, and 4.3

Subject can recognise numbers but:

V = Cannot read 12 pt numbers

(Omit 3-5 to 3-8)

W = Cannot read 18 pt numbers

(Omit 3-1, 3-5 to 3-8, 4.3)

Subject cannot recognise numbers, OR has a W flag:

X = Cannot see gap in 12 pt circle

(Omit as for N and also 4.5)

Y = Cannot see gap in 30 pt circle

(Omit as for X and also 4.4)

1 = Yes to Card 3 (15 q's 8.1.1 & 8.1.15)

if [2 or more errors among 10 48 pt numbers] Conf distance

as above for 12pt

" " " 18pt.

V Acuity

V Acuity

If Y, go to 3-9 on screen. At start of practice (p. 69) say:

Waar is die sirkel?

¹Males 101 up, Females 201 up.

Waar is die pyltjie

Na watter kant (mime left and right) wys die pyltjie? Na die kant of dié kant? (mime).

Repeat with successive items until it is clear if S can see arrow and can reliably show its direction. If not, code P below:

P = Cannot see arrow direction
(Omit as for Y and also 3-9 & 3-10)

--

32

1. Introductory Statement

Eerstens wil ek jou volle name invul, en dan wil ek nog 'n paar vrae vir jou vra.

2. Identifying information

Voorname:

40	41	42	43	44	45	46	47	48	49

Van:

50	51	52	53	54	55	56	57	58	59

Geboorte datum:

D	D	M	M	Y	Y
60	61	62	63	64	65

Years of education, that is last standard passed at school, NOT standard in which S left school, e.g. passed Sub B = 2, passed standard 8 = 10.

68	69

CARD 2

1	2	
1	4	
3	4	5

Standards failed at school

(blank if none)

6	7	8	9	10	11

Watse werk het jou vader vir die grootste gedeelte van sy lewe gedoen? (Describe; to be coded later)

14	15	16

.....
Watse werk het jou moeder vir die grootste gedeelte van haar lewe gedoen? (Describe; to be coded later)

17	18	19

3. Video games

Weet jy wat 'n video speletjie is? Soos die wat mens in 'n kafee kry,

hulle lyk soos 'n televisie stel, jy gooi geld in en dan werk die masjien sodat jy die speletjie kan speel.

(a) Het jy al sulke masjiene gesien?

Ja (1)	Ne (2)
<input type="checkbox"/>	<input type="checkbox"/>

Omit (b) to (d) if No

(b) Het jy al dikwels gekyk as iemand op die masjiene speel?

(1)	(2)
<input type="checkbox"/>	<input type="checkbox"/>

(c) Het jy al ooit self op die masjiene gespeel?

(1)	(2)
<input type="checkbox"/>	<input type="checkbox"/>

(d) Hoeveel keer het jy al op die masjiene gespeel?

Een keer

<input type="checkbox"/>

2 - 4 keer

<input type="checkbox"/>

5 - 10 keër

<input type="checkbox"/>

10 - 20 keer

<input type="checkbox"/>

Meer as 20 keer

<input type="checkbox"/>

4. Vision

4.1 Het jy in enige stadium bril gedra?

Ja (1)	Nee (2)
<input type="checkbox"/>	<input type="checkbox"/>

4.2 Het jou bril gehelp dat jy naby beter kon sien?

<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------

4.3 Het jy jou bril hier by jou?

<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------

If no, arrange to fetch glasses (Note: all workers with glasses were asked to bring them with)

5. Number Naming

S asked to hold test card at most comfortable distance. Test card shows the numbers 1 - 0 in random sequence, in 4 rows, respectively 48, 30, 18, and 12 points in size; and also 4 rows of gapped circles in above sizes.

Ek het hier 'n kaart met syfers daarop. Wat is hierdie syfer?

Point to 48 pt numbers in top row in sequence

en die een. Nou goed, sê hulle almal vir my.

Number naming accuracy

5.2 Quick and accurate

<input type="checkbox"/>

5.3 Hesitant but accurate

<input type="checkbox"/>

5.4 One error. State digit 42

5.5 Two or more errors 43

If 5.2 or 5.3, go to 6.

If 5.5, Flag N and take stated action.

If 5.4, E points to digit incorrectly named in the 48 pt row and says:

Nee, dis nie 'n X nie, dis 'n Y. Sê nou vir my watse nommer is dit?

Goed, Nou kom ons gaan aan.

E asks S to name the numbers in the 30 pt row (2nd row on card), and then to name 48 pt row again (top row), but this time backwards, from right to left. E notes performance on this final set of 20 digits as follows:

5.6 Nil errors 45

5.7 One error. State digit 46

5.8 Two or more errors 47

If 5.6 or 5.7, go to 6.

If 5.8, Flag N and take stated action.

Y N, point to 48 pt gapped circles and say

Kyk, hier is 'n sirkel met 'n gaping. Kan jy sien waar die stukkie uitgevee is? Wys vir my.

E coaches S to point to gap in each of 48 pt circles.

Repeat procedure for 30, 18, and 12 pt circles.

Flag Y for two or more errors on 30 pt circles 50

Flag X for two or more errors on 12 pt circles 51

6. Number Vision Acuity

E points to 12 pt numbers (bottom row).

Sê vir my, watse nommer is dié [points to 2]?

En dié? [6]

and so on to end of row.

6.1 Quick and accurate 52

6.2 Slow and hesitant 53

If 6.1, go to 9.

If 6.2, and if 4.3 answered affirmatively, ask S to put on glasses if not yet done and try 12 pt (bottom row) again.

6.3 Quick and accurate 54

6.4 Hesitant 55

If 6.4, then flag V and take stated action.

Now ask S to read the 18 pt numbers:

6.5 Quick and accurate 56

6.6 Hesitant but accurate 57

6.7 Makes mistakes but self-corrects at once 58

6.8 Makes mistakes, does not self-correct 59

If 6.8, namely uncorrected errors in reading 18 pt type, flag W and take stated action.

7. Handedness

Wys vir my hoe sal jy: 7.1 'n Spyker met 'n hamer inslaan

7.2 'n Klip gooi

7.3 Jou naam skryf

Right

Left

Right

Left

Mixed

60

61

62

Dominance

If mixed, regard writing hand as dominant.

8. Head injury and trauma questionnaire

Het jy al ooit dronkerig gevoel of flou geword as gevolg van:

(TESTER: Slow and careful!)

8.1.1 'n motor ongeluk waarin jy 'n passasier of bestuurder was.

8.1.2 'n ongeluk terwyl jy op 'n fiets gery het.

8.1.3 'n ongeluk terwyl jy op 'n trekker gery het, of een bestuur het

8.1.4 'n ongeluk waar jy as voetganger deur 'n kar getref is

8.1.5 'n ongeluk waar jy as voetganger deur 'n trekker getref is

8.1.6 'n ongeluk waar jy as voetganger deur 'n fiets getref is

8.1.7 'n hou teen die kop met iets stomp soos 'n stok, baksteen, ysterstaaf, pik of bylsteel

8.1.8 'n gat in jou kop (koeël wond, messteek, bykap)

8.1.9 ongeluk terwyl jy aan sport deelgeneem het, of toe jy geval het

8.1.10 amper in water verdrink

8.1.11 amper vergas geraak in die huis as gevolg van die gasstoof of 'n vuur

6

7

8

9

10

11

12

13

14

15

16

CARD 3

	1	2
	1	5
3	4	5

8.1.12 amper vergas geraak deur motor of trekker uitlaatgas

17

8.1.13 amper vergas geraak deur rook van 'n veldbrand

18

8.1.14 amper flou geword of dronkerig geword van gifstof of gifdampe

19

8.1.15 flou geword tydens werk op die plaas vir enige rede?

20

Wat het gebeur:

PERIOD OF UNCONSCIOUSNESS FOR EACH EPISODE
SPECIFIED IN ITEMS 8.1.1 - 8.1.15 ABOVE

d = days
h = hours
m = minutes
s = sec
w = weeks

d h m s w

8.2.1 Item Number

21 22 23 24

8.2.2 Vir hoe lank was jy duiselig of bewusteloos?

(Code in 25 Hours/Days/Weeks)

25 26 27 28

8.2.3 Het jy hospitaal toe gegaan as gevolg van die insident?

If Yes:

29

8.2.4 Hoe lank was jy in die hospitaal? (Code in 30 Dae/Weke)

30 31 32

8.3.1 Item Number

33 34 35 36

8.3.2 Vir hoe lank was jy duiselig of bewusteloos?

(Code in 37 Hours/Days/Weeks)

37 38 39 40

8.3.3 Het jy hospitaal toe gegaan as gevolg van die insident?

If Yes:

41

8.3.4 Hoe lank was jy in die hospitaal? (Code in 42 Dae/Weke)

42 43 44

8.4.1 Item Number

45 46 47 48

8.4.2 Vir hoe lank was jy duiselig of bewusteloos?

(Code in 49 Hours/Days/Weeks)

49 50 51 52

8.4.3 Het jy hospitaal toe gegaan as gevolg van die insident?

If Yes:

53

8.4.4 Hoe lank was jy in die hospitaal? (Code in 54 Dae/Weke)

54 55 56

8.5.1 Item Number

57	58	59	60

8.5.2 Vir hoe lank was jy duiselig of bewusteloos?
(Code in 61 Hours/Days/Weeks)

61	62	63	64

8.5.3 Het jy hospitaal toe gegaan as gevolg van die insident?

If Yes:

65

8.5.4 Hoe lank was jy in die hospitaal? (Code in 66 Dae/Weke)

66	67	68

CARD 3

	1	2
	7	6
3	4	5

8.6.1 Item Number

6	7	8	9

8.6.2 Vir hoe lank was jy duiselig of bewusteloos?
(Code in 10 Hours/Days/Weeks)

10	11	12	13

8.6.3 Het jy hospitaal toe gegaan as gevolg van die insident?

If Yes:

14

8.6.4 Hoe lank was jy in die hospitaal? (Code in 15 Dae/Weeks)

15	16	17

9. Neurological illnesses

Is enige van die volgende toestande al ooit by jou gediagnoseer?

9.1 Epilepsie (Vallende siekte, stuipe of konvulsies)

30

Verduidelik:

9.2 Psigiatryse diagnose ("Was jy ooit in 'n plek soos Lentegeur?")

31

Verduidelik:

9.3 Diabetes

32

Verduidelik:

9.4 Besering van die arm of hand (code Right or Left)

deurdat dit gebreek of vergruis is

33

Gee besonderhede:

HOSPITAL ADMISSION FOR ANY OF CONDITIONS 9.1 - 9.4 ABOVE

(omit if all negative)

10. Was jy al ooit in 'n hospitaal opgeneem in die verlede?

(Examiner notes hospital stays of any duration for any of the conditions named in 9)

10.1.1 Condition number

34	35

10.1.2 Hospital Code:

36	37

10.1.3 Duration of stay (Code in 38 Days/Weeks/Months)

d = day
w = week
m = month

38	39	40	41

10.2.1 Condition number

42	43

10.2.2 Hospital Code:

44	45

10.2.3 Duration of stay (Code in 46 Days/Weeks/Months)

46	47	48	49

10.3.1 Condition number

50	51

10.3.2 Hospital Code:

52	53

10.3.3 Duration of stay (Code in 54 Days/Weeks/Months)

54	55	56	57

Source: Nell, 1992.

CARD 5

	1	2
	/	7
3	4	5

1.2 Pre-test Questionnaire

1. Hoeveel slaap het jy laasnag gehad:

- omtrent soveel as gewoonlik
- minder as gewoonlik
- meer as gewoonlik

6	
7	
8	

2. Op hierdie oomblik voel jy: energiek 9
vars 10
gemiddeld 11
moeg 12
uitgeput 13
3. In die afgelope 24 uur was my inname van koffie, tee of Coca-Cola: 14
 ek drink nie koffie, tee of Coca-Cola nie
 omtrent soveel soos altyd 15
 minder as gewoonlik 16
 meer as gewoonlik 17
4. In die afgelope 24 uur was my rokerij: 18
 ek rook nie 19
 minder as gewoonlik 20
 omtrent soveel soos gewoonlik 21
 meer as gewoonlik 22
5. In die afgelope 24 uur was my alkohol inname: 23
 ek gebruik nooit alkohol nie 24
 ek het nie in die afgelope dag alkohol gebruik nie 25
 omtrent soveel soos gewoonlik 26
 minder as gewoonlik 27
 meer as gewoonlik 28

Ja	Nee
(1)	(2)
<input type="checkbox"/>	<input type="checkbox"/>

6 Gebruik jy enige medisyne op die oomblik

Indien ja, watse medisyne:

- a)
- b)
- c)
- d)
- e)
- f)

28	29	30	31	32	33

CODE:

Werker se naam:

Huidige Plaasnaam:.....

1	4	0	
			5
			8
			12
			16
			20
			24
			28
			32
			36
			40
			44
			45
			47
			49
			51

J. EXAMINATION FINDINGS

Height (cm):

- Vibration readings :
1.
 2.
 3.
 4.
 5.
 6.
 7.
 8.
 9.

Gait : Heel walking : Intact / Not intact

 Toe walking : Intact / Not intact

Any evidence deformity of leg
interfering with sensation : Y / N

Pinprick sensation loss : Y / N

- Extinction Time :
1.
 2.
 3.

La Fayette steadiness testing

A. Plate steadiness

Hole number	Dominant hand		Non-dominant hand	
	<u>Time (s)</u>	<u>Count</u>	<u>Time (s)</u>	<u>Count</u>
1				
2				
3				
4				
5				
6				
7				

B. Maze steadiness

Trial	<u>Time (s)</u>	<u>Count</u>
Dominant 1		
Dominant 2		
Non-Dominant 1		
Non-Dominant 2		

CODING CONTROL

BLOOD CHEMISTRY RESULTS

Workers name:
Farm:

1	2

Date of first set of tests:

- 1. Plasma cholinesterase:
- 2. Red cell cholinesterase:
- 3. Haemoglobin:
- 4. Packed cell volume:
- 5. Serum albumen:
- 6. Serum Gamma GT:

--	--	--	--	--	--

--	--	--	--	--	--

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Date of second set of tests:

- 1. Plasma cholinesterase:
- 2. Red cell cholinesterase:
- 3. Haemoglobin:
- 4. Packed cell volume:

--	--	--	--	--	--

--	--	--	--	--	--

--	--	--	--	--	--

--	--	--	--	--	--

--	--	--	--	--	--

CODING FOR EXAM PAGE:

1. Plasma cholinesterase = code in ...

2. Red cell cholinesterase = code in ...

3. Haemoglobin = code in ...

4. Packed cell volume = code in ...

5. Serum albumen = code for testing ...

6. Serum Gamma GT = code for testing ...

7. Plasma cholinesterase = code for testing ...

8. Red cell cholinesterase = code for testing ...

9. Haemoglobin = code for testing ...

10. Packed cell volume = code for testing ...

STUDY NUMBER: 62

NE ✓

AS
GM

Datum : 15/6/93

Plaasnaam: Klondyke

Werker se Naam: Chrisjan Vloki

VRAELYSTE

- Algemene Vraelys (Wit):
- Landbou Vraelyste (Groen):
- Bosbou Vraelyste (Blou):
- Fabriek Vraelyste (Pienk):
- Munisipaliteit Vraelyste (Geel):
- Ander werk Vraelyste (Wit):

EXAMINATIONS

- Neurological examination
- Blood testing
- La Fayette
- Vibratron
- Urine samples
- (Field Kit)

for lab use only)	
(results)	
pl	<input type="checkbox"/>
rbc	<input type="checkbox"/>
lft	<input type="checkbox"/>
neuropsy	
WHO	<input type="checkbox"/>
Comp	<input type="checkbox"/>

CERES / KOUÉBOKKEVELD PESTICIDE SURVEY 1993

COVERALL CARD

Worker's name:				2 (card)				
Study number :				5				
Able to sign name: Yes = 1 ; No = 2				6				
FARM DETAILS:								
Sprayers on farm: Main sprayers				7				
"Helpers"				8				
Exposure in the 10 days prior to examination:								
a) Whether to OrganoP: Yes = 1 ; No = 2				9				
b) If yes, how many days of spraying OP								
From records:				11				
From modelling:				13				
Exposure over the past season:								
a) Total days spent spraying								
Records								
Modelling								
Azinphos:				16				19
Chlorpyrifos:				22				25
Kilval:				28				31
Acephate:				34				37
Other OP:				40				43
b) Total days spent spraying any chemicals:								
				46				49

Appendix 5.2 Test sequencing in Neurobehavioural Assessment in
Agrichemical Neurotoxicity Study - Ceres 1993

8I93

STARTUP CHECKSHEET

Switch on computers
Attend lights, fans, ice, water
Prime computer: Alt-F9
Prompt: CD\test5

CHECK MENU

Edit battery.seq
Remove semicolons except for item:

| : DELETE HICKBOX |

Go into testee file: Alt F S Alt F X
Edit Testee.set

Make up subject file

Blank file cover and inside:

Questionnaires
Scoring sheet
Digit symbol
Aiming

Lay on table: Pencils, Benton, Santa Ana

CALL SUBJECT IN

TIME

Introduce yourself 3 min
Complete screening questionnaire 10 min

Enter S name and case number on
"Presentation and Behaviour Notes"

Complete pretest questionnaire 5 min

ADMINISTER WHO

(Tester 1 does Santa Ana last) 30 min

Edit testee.set

1st line: Subject's first name
2nd line: Subject's surname and case no
3rd line: First 3 letters surname.res
Save and exit

ADMINISTER PERFORMANCE PROBES

Prompt: Tengine

3.1 Con. number checking 35 min
Break: Smoke, water for subject 7 min
Walk around outside
3.2-3 Animal postures
3.9-10 Pointing arrows
Shift-esc

Appendix 5.2 Test sequencing in Neurobehavioural Assessment in Agrichemical Neurotoxicity Study - Ceres 1993

ADMINISTER HICKBOX

Note: Hickbox 1 to be switched off and on
Prompt: Procomm
Alt-F1: Enter xxx.res

NOTE: CROSS-CHECK YOUR COLLEAGUES

→ Does their screen display "LOGGING DATA?"
Does yours????

Do 2.1 SRT
2.2 CRT

Alt-F10 Alt-X

Prompt: Tengine

Alt-Q until you reach 3.4, then admin
3.4 Speaking arrows
3.5 STM Scanning
3.6-8 Manipulating no's.
Shift-Esc

WATER, SHORT BREAK.

Prompt: Procomm
(Note: Box 1 off-on)

ADMINISTER HICKBOX INSP. TIME

10 min

Alt-F10 Alt x

SCORING CHECK

Prompt: Edit XXX.res

Check that all scores are recorded and mark these off on scoring check list (on reverse of "notes" sheet)
Missing scores: Red alert: Call Jonny and Victor.
Repeat missing tests now.

ADMINISTER ANOMALOUS CONCEPT TEST

25 min

/aw
08-01-1993

PRESENTATION AND BEHAVIOR NOTES

Name: _____ Case no. _____

PRESENTATION

Personal cleanliness
Dress (clean, neat)
Facial scars, deformity
Eyes clear
Tremor
Obese/plump/normal/thin/emaciated
Stature in relation to age: Tiny/small/normal/large

MOTIVATION

Keen, tries very hard/average/listless and disinterested/hostile

SCORE CHECKLIST

CONCENTRATION

At start
Middle
At end of session

REASONS FOR ABORTING TESTS

(State test name and reason).

APPENDIX 5.3

GLOSSARY - Variables in study of neurological and neurobehavioural effects of long term agrichemical exposure - Ceres 1993.

EXPOSURE VARIABLES:	EXPLANATION	UNITS
Long term exposure		
CITDYS	Cumulated lifetime weighted exposure days in citrus farming	Days
CMLTOT2	Cumulated lifetime exposure days weighted by job activity divided by years of working life	Days/yrs
CMLTOT4	Log (CMLTOT2+1)	Days/yrs
CTR2	Cumulated lifetime weighted exposure days on a tractor divided by years of working life	Days/yrs
CTR4	Log (CTR2+1)	
CUMULTOT	Cumulated lifetime exposure days weighted by job activity	Days
CUMULTR	Cumulated lifetime weighted exposure days on a tractor	Days
DECIDYRS	Cumulated lifetime weighted exposure days in deciduous farming	Days
DIPDYS	Cumulative lifetime dipping days	Days
DORMDYS	Cumulative lifetime days of dormex application	Days
EXWGHT	Cumulative lifetime Kg OP exposure weighted by job activity and crop sector	Kg
EXWGHTB	Cumulative lifetime BE OP exposure weighted by job activity and crop sector	BEs
EXWGHTBI	Log (1+[EXWGHTB/Years of working life])	BE/yr
EXWGHTI	Log (1+[EXWGHT/Years of working life])	Kg/yr
JYR10	Total years working on a farm	Yrs
MRKRDYS	Cumulative lifetime days as human marker	Days
PAST1	Previous sprayman=1; current sprayman=0;	-
PAST2	Previous sprayman=1; never sprayman=0;	-
PAST3	Previous sprayman=1; not previously sprayman=0;	-
PEAKEXP	Highest number of mist blower days exposed in year	Days
POM2	Cumulated lifetime weighted exposure days in pome farming divided by years of working life	Days/yrs
POM4	Log (POM2+1)	Days/yrs

POMDYS	Cumulated lifetime weighted exposure days in pome farming	Days
POTDYS	Cumulated lifetime weighted exposure days in potato farming	Days
SPR1	Proportion of all jobs held that were sprayjobs	-
SPR2	Total number of jobs held as sprayman divided by working life years	Yrs ⁻¹
SPRYJOBS	Total number of jobs held as sprayman	-
SQRJ10	Square root of total years worked on a farm	
STODYS	Cumulated lifetime weighted exposure days in stome fruit farming	Days
VEGDYS	Cumulated lifetime weighted exposure days in vegetable farming	Days
VINDYS	Cumulated lifetime weighted exposure days in grape farming	Days
WHTDYS	Cumulated lifetime weighted exposure days in wheat farming	Days

Acute exposure

ACUTE	Total days of mist blower exposure in past season	Days
ACUTE1	Total days of mist blower exposure in past three months	Days
DAYLAST	Number of days since last mist blower exposure	Days
EXP	Current applicator=1; currently non-applicator=0	-
TENDAYOP	Farmer records show OP use in past 10 days: Yes = 1 ; No = 0	-

Environmental exposure

CONTAINR	Use of pesticide container at home: Yes = 1; No = 0	-
DOMGARD	Use of pesticides in garden at home : Yes = 1 ; No = 0	-
EDCT	Proportion of childhood years spent on a deciduous fruit farm	Yrs
FDEXP	Total years resident on a deciduous fruit farm within 10m of spray applied by airplace or tractor	Yrs
FDNEAR	Total years resident on a deciduous fruit farm sprayed by airplace or tractor	Yrs
FDYEARS	Total years resident on a deciduous fruit farm	Yrs
GRDNDUR	Total lifetime duration of domestic gardening	Days
HOMEGIF	Took pesticide home for domestic use : Yes = 1 ; No = 0	-

KIN	Number of family members resident at home who are pesticide sprayers	count
TOTEXP	Total years resident within 10m of spray applied by airplane or tractor	Yrs
TOTNEAR	Total years resident of farms that were sprayed by airplane or tractor	Yrs
TOTYEARS	Total years resident on farms	Yrs

Other exposures / occupational variables

FUMES	Ever previously overcome by fumes : Yes = 1; no =0	-
JOBS	Total number of lifetime jobs	-
LIFEW	Total lifetime working years	Yrs
POISON2	History of previous poisoning by pesticide leading to attendance at hospital or doctor with time off work : Yes=1; no=0	-
POISONN1	History of previous poisoning by pesticide : Yes=1; no=0	-

Knowledge, Attitude and practice

P1	Knowledge of pesticide hazards score	score
P2	Knowledge of hazard prevention score	score
PLUNG	Knowledge of pesticide route of absorption score	score
PREVENT	Knowledge of hazard prevention	-
PROTECT	PPE usage score	score
SAFETY	Knowledge of pesticide hazards	-

OUTCOME VARIABLES:

Symptoms

CHEST	Presence of chest pain Yes = 1 ; No = 0	-
CHEST3	Presence of chest pain for 3 months	-
DIZZY	Presence of dizziness Yes = 1 ; No = 0	-
DIZZY3	Presence of dizziness for 3 months : Yes = 1 ; No = 0	-
DSCORE	Number of "dummy" symptoms present	-
DSCORE3	Number of "dummy" symptoms present for 3 months	-
EAR	Presence of earache Yes = 1 ; No = 0	-
EAR3	Presence of earache for 3 months : Yes = 1 ; No = 0	-
GAIT	Presence of disturbance of gait Yes = 1 ; No = 0	-
GAIT3	Presence of disturbance of gait for 3 months : Yes = 1 ; No = 0	-

HEAD	Presence of headache	-
	Yes = 1 ; No = 0	
HEAD3	Presence of headache for 3 months : Yes = 1 ; No = 0	-
LIMB	Presence of pain in limbs	-
	Yes = 1 ; No = 0	
LIMB3	Presence of pain in limbs for 3 months : Yes = 1 ; No = 0	-
NAUSEA	Presence of nausea	-
	Yes = 1 ; No = 0	
NAUSEA3	Presence of nausea for 3 months : Yes = 1 ; No = 0	-
NSCORE	Number of neurological symptoms present	-
NSCORE3	Number of neurological symptoms present for 3 months	-
NUMBN	Presence of numbness peripheries	-
	Yes = 1 ; No = 0	
NUMBN3	Presence of numbness peripheries for 3 months : Yes = 1 ; No = 0	-
PARAS	Presence of parasthesia in the peripheries	-
	Yes = 1 ; No = 0	
PARAS3	Presence of parasthesia in the peripheries for 3 months	-
	Yes = 1 ; No = 0	
RUNNY	Presence of rhinnorrhoea	-
	Yes = 1 ; No = 0	
RUNNY3	Presence of rhinnorrhoea for 3 months : Yes = 1 ; No = 0	-
SLEEPY	Presence of sleepiness	-
	Yes = 1 ; No = 0	
SLEEPY3	Presence of sleepiness for 3 months : Yes = 1 ; No = 0	-
STOMACH	Presence of stomach pain	-
	Yes = 1 ; No = 0	
STOMACH3	Presence of stomach pain for 3 months : Yes = 1 ; No = 0	-
TIRED	Presence of tiredness	-
	Yes = 1 ; No = 0	
TIRED3	Presence of tiredness for 3 months : Yes = 1 ; No = 0	-
TSCORE	Number of any symptoms	-
TSCORE3	Number of any symptoms for 3 months	-
WEAK	Presence of weakness	-
	Yes = 1 ; No = 0	
WEAK3	Presence of weakness for 3 months : Yes = 1 ; No = 0	-

Neurological

COUNT2A	Tremor intensity dominant hand	count/
		hole
COUNT2B	Tremor intensity non-dom hand	count/
		hole
LAF	Holes achieved on tremor test using dominant hand	count

LOGVIB	Log mean vibratron threshold	Vib U
MAZCNTD	Mean maze counts dominant hand	count
MAZCNTN	Mean maze counts non-dom hand	count
MAZTIMD	Mean maze time dominant hand	Sec
MAZTIMN	Mean maze time non-dom hand	Sec
NLAF	Holes achieved on tremor test using non-dominant hand	count
TFK	Mean tuning fork extinction time	Sec
TREMINTD	Log (COUNT2A+0.001)	count/ hole
TREMINTN	Log (COUNT2B+0.001)	count/ hole

WHO NCTB

AIM1T2	Pursuit Aiming: trials 1 and 2 correct	count
AIMATT	Pursuit Aiming: Total trials attempted	count
AIMWRNG	Pursuit Aiming: Trials wrong	count
BENTON	Benton visual retention test Total score	count
DIGITC	Digit Symbol: Total correct	count
RAW	Digit Span: Total raw score	score
SCOREB	Digit Span: Score backward	score
SCOREF	Digit Span: Score forward	score
SPAM	Digit Span: Total span - forward plus backward	count
SPANB	Digit Span: Span backward	count
SPANF	Digit Span: Span forward	count
SQRTAM2	Square root of AIMATT	count
STA1T3D	Santa Ana: Trials 1 and 3 (dominant hand) dropped	count
STA1T3T	Santa Ana: Trials 1 and 3 (dominant hand) total	count
STA2T4D	Santa Ana: Trials 2 and 4 (non-dominant hand) dropped	count
STA2T4T	Santa Ana: Trials 2 and 4 (non-dominant hand) total	count
WAISSP	Digit span: WAIS-R Standard score	score
WAISSYMB	Digit symbol: WAIS-R Standard score	score

Information Processing Probes

DIFT121	Difference in average reaction time between animal postures phase I and phase II.	msec
DIFT145	Difference in average reaction time between pointing arrows phase I and phase II.	msec
ECHO	Echopraxis score	score
LAVMT2	Log(Average movement time) for one light simple reaction time	msec
LAVMT4	Log(Average movement time) for two light choice reaction time	msec

LAVMT6	Log(Average movement time) for four light choice reaction time	msec
LAVMT8	Log(Average movement time) for eight light choice reaction time	msec
LAVMT10	Log(Average movement time) for inspection time	msec
LAVMT12	Log(Average movement time) for inspection window	msec
LAVRT2	Log(Average reaction time) for one light simple reaction time	msec
LAVRT4	Log(Average reaction time) for two light choice reaction time	msec
LAVRT6	Log(Average reaction time) for four light choice reaction time	msec
LAVRT8	Log(Average reaction time) for eight light choice reaction time	msec
LAVRT10	Log(Average reaction time) for inspection time	msec
LAVRT12	Log(Average reaction time) for inspection window	msec
LAVRT15	Log(Average reaction time) for continuous number checking	msec
LAVRT18	Log(Average reaction time) for animal postures phase I (Semantic Access)	msec
LAVRT21	Log(Average reaction time) for animal postures phase II (Semantic Access)	msec
LAVRT24	Log(Average reaction time) for speaking arrows (Semantic Access)	msec
LAVRT30	Log(Average reaction time) for Short Term Memory Scanning	msec
LAVRT33	Log(Average reaction time) for manipulating numbers I (Working Memory)	msec
LAVRT36	Log(Average reaction time) for manipulating numbers II (Working Memory)	msec
LAVRT39	Log(Average reaction time) for manipulating numbers III (Working Memory)	msec
LAVRT42	Log(Average reaction time) for pointing arrows phase I (Stimulus Resistance)	msec
LAVRT45	Log(Average reaction time) for pointing arrows phase II (Stimulus Resistance)	msec
LPSRT12	Power score for inspection time test ¹	score
LVARIN15	Variability index for Continuous Number Checking ²	counts
LWGI15	Work gradient index for Continuous Number Checking ³	score
SEFIN15	Square root of Efficiency index for Continuous Number Checking ⁴	count/sec
SNTRN24	Count incorrect	count

SSPIN15	Square root of Speed index for Continuous Number Checking ⁵	count/ sec
STFA15	Square root of Transformed Accuracy index for Continuous Number Checking ⁶	count
TEFSC10	Log Efficiency score for Inspection time ⁷	count
TEFSC36	Log Efficiency score for manipulating numbers II (Working Memory) ⁸	msec/ count
TEFSC39	Log Efficiency score for manipulating numbers III (Working Memory) ⁹	msec/ count
TPSRC33	Log of Count correct for manipulating numbers I ¹⁰	count
TPSRC36	Log of Count correct for manipulating numbers II ¹¹	count

OTHER NEUROBEHAVIOURAL TESTS

ACT	Score on Anomalous Concept Test	count
-----	---------------------------------	-------

CONFOUNDERS AND EFFECT MODIFIERS:

Demographic

AGE	Age (rounded down)	years
FW1	Paternal work setting rural=1; urban=0	-
FW2	Paternal work category farmworker=1 other worker=2 supervisor=3 artisan or higher=4	-
FW3	Paternal work farmwork=1; any other=0	-
HEIGHT	Height	cm
INNUM	Innumeracy present=1; absent=0	-
MATWRK	Maternal work type (14 codes)	-
MW1	Maternal work setting rural=1; urban=0	-
MW2	Maternal work category farmworker=1 other worker=2 supervisor=3 housewife=4	-
PATWRK	Paternal work type (29 categories)	-
SCHOOL	Highest standard passed at school	years
SIGN	Unable to sign name=1; Able to sign name=0	-

Alcohol

ABNQUAN	Quantity alcohol regarded as abnormal consumption	Gms
ALCWKND	Quantity alcohol consumed on weekends	Gms
CAGE	CAGE questionnaire score	score
ETHANOL	Quantity alcohol consumed over a lifetime	Gms
LIFETOT	Number of farms practising tot system on which subject ever lived	count
MAST	MAST questionnaire score	score
NORMQUAN	Quantity alcohol regarded as normal consumption	Gms
RECALC	Quantity alcohol consumed in past week	Gms
SITQUANT	Quantity alcohol consumed at one sitting	Gms
TOTCUM	Presently living on a farm practicing the tot system yes=1 ; no=0	-

Smoking

DAGGA	Ever smoked dagga: yes=1; no=0	-
DAGGANOW	Currently using dagga: yes=1; no=0	-
NICOTINE	Cumulative lifetime packyears	packyear
SMOKEE	Ever smoked cigarettes: yes=1 no=0	-

Chemistry

ALB1	Serum albumen	g/l
ERYTH	Standardised erythrocyte cholinesterase	U/g
GGT1	Gamma Glutamyl Transferrase	U/l
PLASMA1	Plasma cholinesterase	U/l
RBC1	Erythrocyre cholinesterase	U/l

Head Injury / related

BLUNT	Ever sustained blunt head injury yes = 1; no = 0	-
BRAIN	Ever sustained any head injury yes = 1; no = 0	-
EVENT	Number of head injuries causing loss of consciousness	count
EVENT1	Ever sustained 2 or more head injuries causing loss of consciousness: yes = 1; no = 0	-
LOC	Number of head injuries causing loss of consciousness lasting more than an hour	count
LOCC	Ever sustained head injury causing loss of consciousness lasting more than an hour yes = 1; no = 0	-

PLAYVID	Ever played video games before yes = 1; no = 0	-
WATCHVID	Ever watched video games before yes = 1; no = 0	-

Medical

DIAB	Past history of diabetes (self-reported): yes=1; no=0	-
DOMI	Handedness: right=1; left=0	-
DOMIN	Handedness (5 categories)	-
CIRCLE12	Acuity for gap in 12pt circle Absent=1; Present=0	-
EPILEP	Past history of epilepsy (self-reported): yes=1; no=0	-
EYE	Any visual difficulties for 12 or 18 pt figures: present=1; absent=0	-
MEDICIN	Use of any medication Yes = 1 ; no = 0	-
NEURI	Presence of significant clinical neurpathy Yes = 1 ; no = 0	-
NEURO	Clinical findings (5 categories)	-
POINT12	Acuity for 12 pt figures Absent = 1 ; present = 0	-
POINT18	Acuity for 18 pt figures Absent = 1 ; present = 0	-

Other neurotoxic exposures

GLUE	Hobby requiring glue use for more than 4 hours a week Yes = 1 ; no = 0	-
GRNDS	Ever performed metal grinding at work Yes = 1 ; no = 0	-
PAINT	Ever worked with paints Yes = 1 ; no = 0	-
WOODDUR	Duration of domestic use of wood preservative	years

Identifying data

FARM	Farm identifier	-
FARMSIZE	Size of farm: > 25ha=1; <25 ha=0	-
INT	Interviewer identifier	-
SUBJECT	Subject identifier	-

Explanation of Scores (CAGE, MAST and Pesticide Knowledge, Attitude and Practices) : see Appendices 6.1 to 6.2.

Explanation of selected Information Processing Probe variables

1. Power score for Inspection Window

$$PSRT12 = \frac{((n_1-10)t_1 + (n_2-10)t_2 + (n_3-10)t_3 + \dots + (n_i-10)t_i)}{((n_1-10) + (n_2-10) + (n_3-10) + \dots + (n_i-10))}$$

Where n_i is the number of items where subject's response is correct.

$$LPSRT12 = \text{Log}(PSRT12)$$

2. Variability index for Continuous Number Checking

$$VARIN15 = \frac{(|n_1-n_2| + |n_2-n_3| + |n_3-n_4| + \dots + |n_9-n_{10}|)}{\text{Total 3 minute segments completed}}$$

Where n_i is the number of items where subject's response was correct in each i th 3 minute period.

$$LVARIN15 = \text{Log}(VARIN15)$$

3. Work Gradient Index for Continuous Number Checking

$$WGI15 = 100 - (\text{Correct responses in first half} - \text{correct reponses in second half of total working period})$$

$$LWGI15 = \text{Log}(WGI15)$$

4. Efficiency index for Continuous Number Checking

$$EFIN15 = \text{Total correct} / \text{total elapsed time}$$

$$SEFIN15 = \text{Square root of EFIN15}$$

5. Speed Index for Continuous Number Checking

$$SPIN15 = \text{Total completed items} / \text{total elapsed time}$$

$$SSPIN15 = \text{Square root of SPIN15}$$

6. Transformed Efficiency index for Continuous Number Checking

$$TFA15 = 1.5 - \log(100 - 100 * \frac{\text{Correct responses}}{\text{Total responses}})$$

$$STFA15 = \text{Square root of TFA15}$$

7. Efficiency Score for Inspection time

$$EFSC10 = 10 - (\text{Total trials} / \text{total steps})$$

$$\text{TEFSC10} = \text{Log} (1000 - \text{EFSC10})$$

8. Efficiency Score for Manipulating numbers II

$$\text{EFSC36} = 1000 - \frac{\text{Total elapsed time}}{\text{Number of correct responses}}$$

$$\text{TEFSC36} = \text{Log} (1000 - \text{EFSC36})$$

9. Efficiency Score for Manipulating numbers III

$$\text{EFSC39} = 1000 - \frac{\text{Total elapsed time}}{\text{Number of correct responses}}$$

$$\text{TEFSC39} = \text{Log} (1000 - \text{EFSC39})$$

10. Count correct for Manipulating numbers I

$$\text{PSRC33} = \text{Number of times subject responses are correct}$$

$$\text{TPSRC33} = \text{Log} (21 - \text{PSRC33})$$

11. Count correct for Manipulating numbers II

$$\text{PSRC36} = \text{Number of times subject responses are correct}$$

$$\text{TPSRC36} = \text{Log} (37 - \text{PSRC36})$$

9 1 4. 3 8 6 2 5 7 0

3 1 9 8 2 7 0 5 4 6

0 8 5 6 3 1 2 9 4 7

2 6 3 9 5 0 1 4 7 8

Appendix 5.4 Testing cards for visual acuity and numeracy in
Agrichemical Neurotoxicity study - Ceres 1993

9 1 4 3 8 6 2 5 7 0

48 pt

3 1 9 8 2 7 0 5 4 6

30 pt

0 8 5 6 3 1 2 9 4 7

18 pt

2 6 3 9 5 0 1 4 7 8

12 pt



APPENDIX 6.1 - SCORING FOR ALCOHOL CONSUMPTION: CAGE AND MAST.

I. CAGE Scores

Questions:

- * Have you ever felt you should cut down on your drinking?
- * Have people annoyed you by criticising your drinking?
- * Have you ever felt bad or guilty about your drinking?
- * Have you ever had a drink first thing in the morning to steady your nerves or to get rid of a hangover?

Scored: 1 for each affirmative answer.
Range: 0 - 4

II. MAST Scores

	Scored for alcoholic response #
* Do you feel you are a normal drinker?	2 #
* Have you ever woken in the morning after some drinking the night before and found that you could not remember a part of the evening before?	2
* Can you stop drinking without a struggle after one or two drinks?	2 #
* Do friends or relatives think you are a normal drinker?	2 #
* Have you ever been to hospital because of your drinking?	5
* Have you ever lost friends or girlfriends because of your drinking?	2
* Have you ever neglected your family, your obligations, or your work for two days or more in a row because of your drinking?	2
* Have you ever had delerium tremens (DTs), severe shaking, heard voices or seen things that weren't there after heavy drinking?	2
* Have you ever gone to anyone for help about your drinking?	5
* Have you ever got into trouble at work because of your drinking?	2

Total Score range: 0 - 26

- Alcoholic response is positive to all questions except those marked with a #, for which alcoholic response is NO.

REFERENCES

Mayfield DG, Mcleod G, Hall P. (1974). The CAGE questionnaire: validation of new alcoholism screening instrument. Am J Psych 131 : 1121-1123.

Setzer ML. (1971). The Michigan alcoholism screening test: the quest for a new diagnostic instrument. Am J Psych 127 : 1653-1658.

Appendix 6.2 - Scoring for Pesticide Knowledge, Attitude and Practices.

1. Knowledge score

a) Answers to an open-ended question on personal risk were scored as follows:

- 1 = Poor knowledge, misconception or frankly wrong (eg: at risk for TB, pesticides cause ulcers).
- 2 = Correct in content but no particular insight.
- 3 = Correct and insightful (eg: hazard of smoking or eating while applying, skin absorption main route, increased indoor risk, domestic risk, etc.)

b) Answers to an open-ended question on how to prevent poisoning were scored as follows:

- 1 = Poor knowledge, misconception or frankly wrong (eg: immunise, doesn't know, attend a doctor).
- 2 = Correct in content but no particular insight.
- 3 = Correct and insightful (eg: avoid eating or smoking when working with pesticides, washing hands before and after, attention to labelling, avoid splashing pesticide while mixing, etc.).

2. Attitude score

Answers to a series of closed questions on attitude to wearing gloves, masks and overalls when working with pesticides were scored as follows:

- * 1 for each response of "very important" (max 3).
- * Any responses other than "very important" scored 0.

The question on self-assessed safety behaviour scored 1 if the subject expressed the opinion that he worked more safely than others. Any other responses scored 0.

3. Usage of Personal Protective Equipment (PPE).

PPE score was made as follows:

- 0 = Uses no PPE
- 1 = Uses less than 4 items of PPE
- 2 = Uses all 5 items of PPE

APPENDIX 7.1

BIVARIATE ASSOCIATIONS WITH NEUROLOGICAL AND NEUROBEHAVIOURAL OUTCOMES AMONGST FARM WORKERS EXPOSED TO AGRICHEMICALS

Table A.7.1 Independent variables associated with symptom outcomes amongst deciduous fruit farm workers

SYMPTOM OUTCOME	Variable Associated
Stomach pain current:	Schooling years (-) Use of pesticide container at home (+) Gm alcohol consumed on a weekend (+) Cumulative lifetime alcohol consumption (+)
Stomach pain 3 months:	Ever head injured (+)
Nausea current:	Ever lost consciousness (+) Clinical sensory impairment (+) CAGE score (+) MAST score (+) Cumulative lifetime alcohol consumption (+)
Nausea for 3 months:	Number of head injuries(+) Ever head injured (+) Previously poisoned pesticides (+) Ever head injured (+) Overcome by fumes (+)
Dizziness current	Currently applying pesticides (+) Ever head injured (+) Ever lost consciousness (+) Ever lost consciousness > 1 hour (Any other contact "ever" (+)) Previously overcome by fumes (+) Use of glue for hobby (+) Use of pesticides at home (+) Previously poisoned with pesticide (+) Duration of domestic gardening (+)
Dizziness 3 months:	History of epilepsy (+) Domestic gardening (+) Ever lost consciousness (+) Previously poisoned pesticides (+) Lifetime residence on sprayed farm (-)
Gait disturbed current:	Numeracy (-) (Any other contact "ever" (+)) Previously overcome by fumes (+) Clinical sensory impairment (+) Previously poisoned pesticides (+) Age (+) Plasma cholinesterase levels (-)

Gait disturbed 3 months: Age (+)
Number of head injuries (+)
Numeracy(+)
Previously poisoned pesticides (+)
Unable to see 12 pt circle gap (+)

Numbness limbs current: Currently applying pesticides (+)
Past history diabetes
Previously overcome by fumes (+)
Clinical sensory impairment (+)
Previously poisoned pesticides (+)
Grams alcohol regarded as excessive drinking (-)
Cumulated weighted lifetime exposure (+)
Duration of domestic gardening (+)
Cumulative lifetime alcohol consumption (+)

Numbness limbs 3 months: Past history diabetes (+)
Previously poisoned pesticides (+)
Lifetime residence on sprayed farm (-)

Parasthesia current: (Any other contact "ever" (+))
Previously overcome by fumes (+)
Ever lost consciousness (+)
Clinical sensory impairment (+)
Schooling years (-)
Unable to see 12 pt circle gap (+)
Age (+)
Cumulated tractor days exposure(+)
Duration of domestic gardening (+)

Parasthaesia 3 months: Age (+)
Lifetime cigarette pack years (+)

Earache current: Numeracy (-)
Previously poisoned pesticides (+)

Earache 3 months: Previously poisoned pesticides (+)
Lifetime residence on sprayed farm (-)
CAGE score (-)

Lameness limbs current: Past history epilepsy (+)
Ever lost consciousness (+)
(Any other contact "ever" (+))
Previously overcome by fumes (+)
Schooling years (-)
Previously poisoned with pesticide (+)
Previously played videos (-)
Cumulative lifetime alcohol consumption (+)

Lameness 3 months: Schooling years (-)
Lifetime residence on sprayed farm (-)
History of epilepsy (+)
Previously poisoned pesticides (+)
Use of pesticide container at home (+)

Pain in limbs current:	Age (+) Previously poisoned pesticides (+) Unable to see 12 pt circle gap (+) Previously played videos (-) Plasma cholinesterase levels (-) Schooling years (-) Grams alcohol consumed on 1 sitting(-) Lifetime years worked on a farm (+)
Pain limbs 3 months:	Age (+) Schooling years (-) Ever used marijuana (+) Previously poisoned pesticides (+) Inability to see 12pt circle gap (+) Lifetime years worked on a farm (+) Lifetime residence on sprayed farm (-)
Rhinorrhoea current:	(Any other contact "ever" (+)) Previously poisoned pesticides (+) Currently on tot system Cumulative lifetime alcohol consumption (+) GGT levels (+) Duration of domestic gardening (+) Lifetime experience of tot system (+)
Rinnorrhoea 3 months:	Cumulated weighted lifetime exposure (+) Number of head injuries (+) Grams alcohol regarded as normal (+) Overcome by fumes (+)
Headache current:	Currently applying pesticides Ever head injured (+) Ever lost consciousness (+) Ever lost consciousness > 1 hour (+) Previously overcome by fumes (+) Grams alcohol consumed on weekends (+) CAGE score (+) MAST score (+) Cumulated weightd lifetime exposure(+) Cumulative lifetime alcohol consumption (+) Number of past head injuries (+) Duration of domestic gardening (+) Grams alcohol consumed in past week (+) Proportion of lifetime jobs held as sprayman (+) Average lifetime intensity pesticide exposure (+)
Headache 3 months:	Previously poisoned pesticdes (+) History of brain injury (+) CAGE score (+)

Sleepiness current:	Currently applying pesticides Ever head injured (+) Ever lost consciousness (+) Ever lost consciousness > 1 hour (+) Previously overcome by fumes (+) Total exposure days in past season (+) Grams alcohol consumed on weekends (+) Cumulative lifetime alcohol consumption (+) CAGE score (+) MAST score (+) Cumulated weighted lifetime exposure (+) Number of past head injuries (+) Schooling years (-) Proportion of lifetime jobs held as sprayman (+) Average lifetime intensity pesticide exposure (+)
Sleepiness 3 months:	Number of days pesticide exposure in past 3 months (-) CAGE score (+) Cumulative lifetime Kg alcohol (+) Lifetime experience tot system (+) Schooling years (-) Number of lifetime spray jobs (+) Grams alcohol consumed at a sitting(+) Currently a spray applicator (+) Previously poisoned pesticides (+) Use of pesticide container at home (+) Domestic gardening (+)
Chest pain current:	Ever lost consciousness (+) Ever lost consciousness > 1 hour (+) (Any other contact "ever" (+)) Schooling years (-) Previously poisoned with pesticide (+) Currently on tot system (+) Number of past head injuries (+) Duration of domestic gardening (+) MAST score (+) Cumulated cigarette packyears (-) Plasma cholinesterase level (-)
Chest pain 3 months:	CAGE score (+)
Tiredness current:	Past history epilpesy (+) Ever lost consciousness > 1 hour (+) (Any other contact "ever" (+)) Previously overcome by fumes (+) Previously poisoned with pesticide (+) Number of past head injuries (+) MAST score (+)

Tiredness 3 months:

CAGE score (+)
GGT level (+)
MAST score (+)
Grams alcohol regarded as normal (+)
Domestic gardening (+)
Previously poisoned pesticides (+)
Inability to see 12pt circle gap (+)
Domestic gardening (+)

SYMPTOM SCORE

* Neurological symptoms

Current exposure (+)
History of brain injury (+)
Domestic gardening (+)
Number of head injuries (+)
Number of head injuries causing loss
of consciousness (+)
Overcome by fumes (+)
Past history pesticide poisoning (+)
Schooling years (-)
Previously played video games (-)
CAGE score (+)
MAST score (+)
Lifetime grams of alcohol (+)
Gms alcohol consumed in past week (+)
Lifetime years worked on a farm (+)
Lifetime cigarette pack years

* "Dummy" symptoms

Domestic gardening (+)
Number of head injuries (+)
Number of head injuries causing loss
of consciousness (+)
Past history pesticide poisoning (+)
Cumulative weighted exposure days (+)
Lifetime residence on a farm (-)
Plasma cholinesterase levels (-)

Table A.7.2 Independent variables associated with peripheral vibration sense and tremor outcomes amongst deciduous fruit workers

VIBRATION SENSE / TREMOR OUTCOME	Variable associated
Vibratron threshold 1	Age (+) Cumulated working life exposure (+) Cumulative lifetime Kg alcohol (+) Lifetime residence on sprayed farm (+) Lifetime residence on farm (+) Lifetime cigarette pack years (+) Exposure to paints (-) Schooling (-) Number of lifetime spray jobs (+) Lifetime years worked on a farm (+) Impaired visual acuity (+) Serum albumen (-)
Tuning fork extinction2 time	Age (-) Serum GGT (+) Lifetime residence on farm (-) Lifetime years worked on a farm (-) Height (-) Schooling years (+)
Tremor score 3 dominant hand	Days pesticide exposure in past three months (-) Age (-) Cumulated lifetime exposure days (-) Lifetime residence on farm (-) Schooling years (+) Impaired visual acuity (-) Lifetime years worked on a farm (-) Quantity of alchol (g) consumed at one sitting (+)
Tremor score 3 non-dominant hand	Lifetime years worker on farm (+) Age (-) Schooling years (+) Impaired visual acuity (+) Lifetime years worked on a farm (-) Quantity of alchol (g) consumed at one sitting (+)
Tremor intensity 4 dominant hand	Age (+) History of brain injury (-) Impaired visual acuity (+) Use of glue as hobby (-) Number of head injuries (+) Ever smoker (+) Height (+) Exposure to OP in past 10 days (+) Literacy (-) Cumulative lifetime exposure days (+) Lifetime grams of alcohol (+) Lifetime years resident on a farm (+)

Tremor intensity 4
non-dominant hand
dominant hand

Unable to see 12 pt circle gap (+)
Age (+)
History of pesticide poisoning (+)
Literacy (-)
Number of head injuries (+)
Days exposure in past 3 months (+)
Schooling years (-)
Lifetime years resident on a farm (+)
Lifetime years worked on a farm (+)
Lifetime grams of alcohol (+)
Grams alcohol regarded as normal
drinking (-)

Maze counts 5
dominant hand

Lifetime years worked on farm (+)
Lifetime residence on farm (+)
Age (+)
CAGE score (-)
Cumulated lifetime Kg ethanol (+)
Impaired visual acuity (+)
Schooling years (-)

Maze counts 5
non-dominant hand

Lifetime years worker on farm (+)
Lifetime residence on farm (+)
Schooling years (-)
Impaired visual acuity (+)
Age (+)

Maze time 6
dominant hand

Lifetime years worker on farm (+)
Lifetime residence on farm (+)
Days pesticide exposure in past
3 months (+)
MAST score (+)

Maze time 6
non-dominant hand

Lifetime years worker on farm (+)
Lifetime residence on farm (+)
Cumulated lifetime exposure days (+)
MAST score (+)

Table A.7.3 Independent variables associated with neuro-behavioural battery outcomes amongst deciduous fruit farm workers on bivariate analyses *

TEST	Variable Associated
<u>WHO-NCTB</u>	
* Digit span	
Span forward	Age (-) Gm alcohol consumed on a weekend (+) Gm alcohol consumed in past week (+) Lifetime residence on a sprayed farm (-) Lifetime years worked on a farm (-) Serum Albumen (+) Lifetime experience tot system (-) Numeracy (-) Experience of playing videos (+) Schooling years (+)
Span backward	Numeracy (+) Impaired visual acuity (-) 12 pt visual discrimination loss (-) Age (-) Lifetime years resident on a farm (-) Lifetime years worked on a farm (-) Schooling years (+) Average lifetime intensity pesticide exposure (+) Proportion of lifetime jobs held as sprayman (+)
Total span	Numeracy (+) Impaired visual acuity (-) 12 pt visual discrimination loss (-) Age (-) Lifetime years resident on a farm (-) Lifetime years worked on a farm (-) Schooling years (+) Lifetime exposure to tot system (-) Gms alcohol consumed in past week (+) Previously played video games (+) Serum albumen (+) Ever smoked (-)
Score forward	Numeracy (+) Schooling years (+) Age (-) Lifetime years resident on a farm (-) Grams alcohol consumed in past week (+) Lifetime experience of tot system (-) Average lifetime intensity pesticide exposure (+) Grams alcohol consumed on a weekend (+) Previously played video games (+)

Score backward	Numeracy (+) Impaired visual acuity (-) 12 pt visual discrimination loss (-) Serum albumen (+) Age (-) Schooling years (+) Standardised Rbc cholinesterase level (-) Lifetime years resident on a farm (-) Lifetime years worked on a farm (-) Average lifetime intensity pesticide exposure (+) Proportion of lifetime jobs held as sprayman (+) Ever smoked (-)
Total raw score	Numeracy (+) Impaired visual acuity (-) 12 pt visual discrimination loss (-) Serum albumen (+) Age (-) Schooling years (+) Lifetime years resident on a farm (-) Lifetime years worked on a farm (-) Paint exposure (+) Grams alcohol consumed in past week (+) Lifetime experience of tot system (-) Previously played video games (+)
WAIS-R Std score	Numeracy (+) Impaired visual acuity (-) 12 pt visual discrimination loss (-) Serum albumen (+) Lifetime experience of tot system (-) Lifetime years worked on a farm (-) Lifetime years resident on a farm (-) Age (-) Grams alcohol consumed in past week (+) Schooling years (+) Average lifetime intensity pesticide exposure (+)
* Benton Total score	Numeracy (+) Impaired visual acuity (-) Use of glue as a hobby (+) Schooling years (+) Ever smoked (-) Proportion of lifetime jobs held as sprayman (+) Lifetime years resident on a farm (-) Lifetime years worked on a farm (-) Age (-) Grams alcohol regarded as excessive drinking (-) Standardised Rbc cholinesterase level (-) Cumulated lifetime grams alcohol (-) Serum albumen (+) Lifetime experience of tot system (-) Previously played video games (+)

* Santa Anna Peg Board

Dom hand total

Numeracy (+)
 Impaired visual acuity (-)
 Schooling years (+)
 Proportion of lifetime jobs held as
 sprayman (+)
 Lifetime years resident on a farm (-)
 Lifetime years worked on a farm (-)
 Cumulated lifetime exposure to
 organophosphates (-)
 Age (-)
 Standardised Rbc cholinesterase
 level (-)
 Previously played video games (+)
 Current marijuana use (+)
 Use of glue as hobby (+)
 Previously poisoned by pesticides (?)

Dom hand dropped

Ever drinker (-)
 Past history epilepsy (+)

Non-dom total

Numeracy (+)
 Impaired visual acuity (-)
 Age (-)
 Schooling years (+)
 Cumulated lifetime exposure to
 organophosphates (-)
 Grams alcohol consumed on a weekend (+)
 Lifetime years resident on a farm (-)
 Lifetime years worked on a farm (-)
 Grams alcohol consumed in past week (+)
 Schooling years (+)
 Previously played video games (+)
 Current marijuana use (+)
 Use of glue as hobby (+)
 Previously poisoned by pesticides (-)

Non-dom dropped

Plasma cholinesterase level (+)
 Grams alcohol consumed in past week (+)

* Digit Symbol

Total Correct

History brain injury (+)
 Impaired visual acuity (-)
 Cumulative lifetime alcohol
 consumption (-)
 Grams alcohol consumed in past week (+)
 Lifetime experience of tot system (-)
 Age (-)
 Schooling years (+)
 Lifetime years resident on a farm (-)
 Lifetime years worked on a farm (-)
 Average lifetime intensity pesticide
 exposure (+)
 Cumulative lifetime pesticide
 exposure (-)
 Proportion of lifetime jobs held as
 sprayman (-)

WAIS-R Std score

Schooling years (+)
Impaired visual acuity (-)
Standardised Rbc cholinesterase level (-)
MAST score (+)
Cumulated cigarette packyears (+)
Grams alcohol consumed in past week (+)
Previously played video games (+)
Lifetime years resident on a farm (-)

* Pursuit Aiming
Correct

History brain injury (+)
Impaired visual acuity (-)
Domestic gardening (+)
Ever lost consciousness (+)
Age (-)
Schooling years (+)
Cumulative lifetime pesticide exposure (-)
Average lifetime intensity pesticide exposure (-)
Cumulative lifetime alcohol consumption (-)
Lifetime years resident on a farm (-)
Lifetime sprayjobs (-)
Lifetime experience of tot system (-)
Lifetime years worked on a farm (-)

Attempted

History brain injury (+)
Age (-)
Schooling years (+)
Cumulative lifetime pesticide exposure (-)
Cumulative lifetime alcohol consumption (-)
Lifetime years resident on a farm (-)
Lifetime sprayjobs (-)
Lifetime experience of tot system (-)
Lifetime years worked on a farm (-)

Wrong

Age (+)
Schooling years (-)
Cumulative lifetime pesticide exposure (+)
Cumulative lifetime alcohol consumption (-)
Lifetime years resident on a farm (+)
Lifetime years worked on a farm (+)
Cumulated cigarette packyears (+)
Average lifetime intensity pesticide exposure (+)
Numeracy (+)

Table A.7.4 Independent variables associated with performance on information processing probes amongst deciduous fruit farm workers

HICKBOX TESTS

Variable Associated
(direction of B slope)

1. One light

Simple Reaction Time

Height (-)
Quantity of alcohol regarded as normal drinking (+)
Usage of PPE (-)
Schooling years (-)
Lifetime residential exposure (-)
Ability to sign consent (-)

Simple Movement Time

Past history of epilepsy (+)
Age (+)
Grams alcohol consumed on a weekend (-)
Years worked on a deciduous fruit farm (+)
Gms alcohol consumed in the past week (-)
Schooling years (-)
Ability to sign consent (-)

Choice Reaction Time
(2 lights)

Current marijuana use (-)
Use of pesticides at home (-)
Currently on tot system (-)
Schooling years (-)
Ability to sign consent (-)
Usage of PPE (-)
Lifetime residence on a farm (+)
Lifetime years worked on a farm (+)

Choice Movement Time
(2 lights)

Past experience playing videos (-)
Age (+)
Previously poisoned by pesticides (+)
Gms alcohol consumed on a weekend (-)
Years worked on a deciduous fruit farm (+)
Proportion of lifetime jobs held as sprayman (+)
Standardised erythrocyte cholinesterase (+)
Schooling years (-)
Ability to sign consent (-)
Gms alcohol consumed in past week(-)

Choice Reaction Time
(4 lights)

Schooling years (-)
Ability to sign consent (-)
Use of pesticides at home (-)
Currently on tot system (-)

Choice Movement Time (4 lights)	Past experience playing videos (-) Age (+) Years worked on deciduous fruit farms (-) Gms alcohol consumed in past week(-) Schooling years (-) Ability to sign consent (-) Proportion of jobs held as sprayman (-) Lifetime years worked on a farm (+) Lifetime years lived on a farm (+) Lifetime exposed years lived on a farm (+)
Choice Reaction Time (8 lights)	Height (-) Schooling years (-) Ability to sign consent (-) Use of pesticides at home (-) Currently on tot system (-) Years worked on deciduous fruit farms (+) Cumulative lifetime Gms alcohol (+)
Choice Movement Time (8 lights)	Previously played video games (-) Age (+) Lifetime years worked on a farm (+) Inability to see 18 point figures(+) Proportion of jobs held as sprayman (-) Previously poisoned by pesticides (+) Ever smoked (+) Schooling years (-) Ability to sign consent (-) Exposure to OPs in preceding 10 days (+) Lifetime years lived on a farm (+) Lifetime exposed years lived on a farm (+)
Inspection Reaction Time	Previous blunt head injury (-) Previous loss of consciousness more than 1 hr duration (-) Previously played videos (-) Gms alcohol consumed at 1 sitting(-)
Inspection Movement Time	Inability to see 12 point figure (+) Age (+) Years worked on deciduous fruit farms (+) Schooling years (-) Proportion of jobs held as sprayman (-) Lifetime years resident on a farm(+) Lifetime years worked on a farm (+)

Efficiency Score	Previous head injury (+) Days OP exposure in past 3 months(+) Days OP exposure in past season (+) Number of previous head injuries (+) Size of current farm (+) Ability to sign consent (+)
Inspection Window RT	Previously overcome by fumes (+) Duration of domestic gardening (+) Gms alcohol consumed at 1 sitting(-)
Inspection Window MT	Years worked on deciduous fruit farms (+) Lifetime years worked on a farm (+) Lifetime years resident on a farm(+) Proportion of jobs held as sprayman (+) Age (+) Ever smoked (+) Standardised erythrocyte cholinesterase (+)
Inspection Window Power Score	Previous head injury (+) Standardised erythrocyte cholinesterase (-) Ever experienced loss of consciousness (+) Size of current farm (+) Family member exposed to pesticides (+) Schooling years (-)

CONTINUOUS NUMBER CHECKING

Reaction Time	Years worked on deciduous fruit farms (+) Lifetime years resident on a farm(+) Lifetime years worked on a farm (+) Lifetime experience of the tot system (-) Age (+) Previously played videos (-) Gms alcohol consumed in past week(-) Schooling years (-) Ability to sign consent (-) Inability to see 12 point figure (+) Gms alcohol consumed on weekends (-) CAGE score (+) Ever smoked (+) Proportion of jobs held as sprayman (+)
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Speed Index

Years worked on deciduous fruit farms (-)
Lifetime years resident on a farm(-)
Lifetime years worked on a farm (-)
Lifetime exposed years resident on a farm (-)
Age (-)
Gms alcohol consumed in past week(+)
Schooling years (+)
Ability to sign consent (-)
Gms alcohol consumed on a weekend(+)
CAGE score (-)
Number of jobs held as sprayman (-)

Efficiency Index

Years worked on deciduous fruit farms (-)
Lifetime years resident on a farm(-)
Lifetime years worked on a farm (-)
Lifetime exposed years resident on a farm (-)
Lifetime experience of the tot system (+)
Age (-)
Previously played videos (+)
Gms alcohol consumed in past week(+)
Schooling years (+)
Ability to sign consent (+)
Inability to see 12 point figure (-)
Gms alcohol consumed on a weekend(+)
CAGE score (-)
Ever smoked (-)
Number of jobs held as sprayman (-)

Transformed Accuracy Index

Past history of epilepsy (-)
Gms alcohol consumed at 1 sitting(-)
Previously poisoned by pesticides(-)
Schooling years (+)
Ability to sign consent (+)
Cumulated lifetime weighted days of exposure (-)
Cumulated lifetime cigarette pack years (+)
Lifetime experience of the tot system (-)
Lifetime years resident on a farm(+)

Work Gradient Index

Currently using marijuana (+)
Cumulated weighted mistblower days of exposure (+)
Lifetime exposed years lived on a farm (+)

Variability Index

Current farm size (+)
Schooling years (+)
Ability to sign consent (+)
Ever somked (-)
CAGE score (-)
Currently on tot system (-)
Cumulative lifetime Gms alcohol (-)
Age (-)
Lifetime years worked on a farm (+)
Lifetime years resident on a farm(+)
Lifetime exposed years lived on a farm (+)

SEMANTIC ACCESS: Animal Postures I

Reaction Time

Years worked on deciduous fruit farms (+)
Lifetime years resident on a farm(+)
Lifetime years worked on a farm (+)
Lifetime exposed years lived on a farm (+)
Serum albumen (-)
Age (+)
Gms alcohol consumed in past week(-)
Schooling years (-)
Ability to sign consent (-)
Gms alcohol consumed on a weekend(-)
Ever smoked (+)
Proportion of jobs held as sprayman (-)

Animal Postures II

Reaction Time

Years worked on deciduous fruit farms (+)
Lifetime years resident on a farm(+)
Lifetime years worked on a farm (+)
Lifetime exposed years lived on a farm (+)
Previously played videos (-)
Age (+)
Gms alcohol consumed in past week(-)
Schooling years (-)
Clinical evidence neurological impairment (+)
Gms alcohol consumed on a weekend(-)
Ever smoked (+)

Difference in Reaction Times I and II

Years worked on deciduous fruit farms (-)
Lifetime years resident on a farm(-)
Lifetime years worked on a farm (-)
Lifetime exposed years lived on a farm (+)
Age (-)
Serum albumen (+)
Schooling years (+)
Ability to sign consent (+)
Days OP exposure in past season (+)

Speaking Arrows

Reaction Time
Years worked on deciduous fruit farms (+)
Lifetime years resident on a farm(+)
Lifetime exposed years lived on a farm (+)
Lifetime years worked on a farm (+)
Cumulated weighted mistblower days of exposure (+)
Cumulated weighted Kg OP / hectare days of exposure (+)
Number of jobs held as sprayman (+)
Age (+)
Paternal work as farm worker (+)
Schooling years (-)
Previously played videos (-)
Days OP exposure in past 3 months(+)
Gms alcohol consumed in past week(-)
Gms alcohol consumed on a weekend (-)
Cumulative lifetime Gms alcohol (+)
Ever smoked (+)
Family member exposed to pesticides (-)

Count incorrect
Years worked on deciduous fruit farms (+)
Lifetime years resident on a farm(+)
Lifetime exposed years lived on a farm (+)
Lifetime years worked on a farm (+)
Cumulated weighted mistblower days of exposure (+)
Cumulated weighted mistblower days of exposure (+)
Cumulated weighted Kg OP / hectare days of exposure (+)
Proportion of jobs held as sprayman (+)
Age (+)
Use of glue as hobby (+)
Schooling years (-)
Ability to sign consent (-)
Inability to see 12 point figure (+)
Inability to see 18 point figure (+)
Cumulative lifetime Gms alcohol (+)
Ever smoked (+)
Days OP exposure in past 3 months(+)

SHORT-TERM MEMORY SCANNING

Reaction Time
Years worked on deciduous fruit farms (+)
Cumulated weighted exposure days (+)
Previously overcome by fumes (+)
Inability to sign consent (-)
Gms alcohol consumed in past week(-)
Gms alcohol consumed on a weekend(-)
Ever smoked (+)

WORKING MEMORY

1. Manipulating Numbers I

Reaction Time	Lifetime years resident on a farm(+) Lifetime exposed years lived on a farm (+) Lifetime years worked on a farm (+) Past experience playing video games games (-) Previous blunt head injury (+) Duration of use of wood preservative (+) Age (+) Schooling years (-) Ability to sign consent (-) Cumulative lifetime Gms alcohol (+) Gms alcohol consumed in past week(-) Gms alcohol consumed on a weekend(-)
Count Correct	Past loss of consciousness > 1hr (-) Quantity alcohol seen as excessiv(+) Quantity alcohol seen as normal (+) Gms alcohol consumed at 1 sitting(+) Schooling years (+) Ability to sign consent (+) Cumulative lifetime cigarette packyears (-) Duration of domestic gardening (-)

2. Manipulating Numbers II

Reaction Time	Years worked on deciduous fruit farms (+) Lifetime years resident on a farm(+) Lifetime years worked on a farm (+) Lifetime experience of the tot system (+) Duration of domestic use of wood preservatives (+) Paternal work as farm worker (+) Age (+) Schooling years (-) Inability to sign consent (-)
Count Correct	Years worked on deciduous fruit farms (+) Lifetime years resident on a farm(+) Lifetime exposed years lived on a farm (+) Lifetime close exposed years resident on a farm (+) Lifetime years worked on a farm (+) Lifetime experience of the tot system (+) Number of jobs held as sprayman (+) Clinical sensory impairment (-) Age (+) Schooling years (-)

Efficiency Score

Years worked on deciduous fruit farms (+)
Lifetime years resident on a farm(+)
Lifetime exposed years lived on a farm (+)
Lifetime close exposed years resident on a farm (+)
Lifetime years worked on a farm (+)
Lifetime experience of the tot system (+)
Number of jobs held as sprayman (+)
Age (+)
Schooling years (-)

3. Manipulating Numbers III

Reaction Time
Efficiency Score

none
Previous blunt head injury (-)

STIMULUS RESISTANCE

1. Echopraxis

Cumulative lifetime pesticide exposure (-)
Schooling years (+)
Ever consumed alcohol (-)

2. Pointing Arrows I

Reaction Time

Years worked on deciduous fruit farms (+)
Lifetime years resident on a farm(+)
Lifetime years worked on a farm (+)
Cumulated weighted pome fruit days of exposure (+)
Age (+)
Previous experience playing video games (-)
Schooling years (-)
Parental work as farm worker (+)
Ever smoked (+)
Current farm size (-)
Gms alcohol consumed on weekends (-)

3. Pointing Arrows II

Reaction Time

Years worked on deciduous fruit farms (+)
Lifetime years resident on a farm(+)
Lifetime years worked on a farm (+)
Proportion of jobs held as sprayman (-)
Age (+)
Previous experience playing video games (-)
Schooling years (-)
Parental work as farm worker (+)
Use of PPE (-)
Height (-)

APPENDIX 7.2

Multiple logistic and linear regression modelling of neurological and neurobehavioural outcomes using cumulative lifetime, and average lifetime intensity exposure to Kgs OPs amongst deciduous fruit farm workers - Ceres 1993.

Table A7.5 Multiple logistic regression analysis of symptom outcomes amongst deciduous fruit farm workers using cumulative exposure (EXWGHT) in the analyses

<u>Outcome</u>	<u>Predictor</u>	<u>Parameter Estimate</u>	<u>Standard Error</u>	<u>P-value</u>	<u>Odds Ratio</u>
Stomach	Age	-0.013	0.022	0.552	0.987
	School	-0.031	0.050	0.543	0.970
	Exwght	-0.012	0.023	0.593	0.988
	Plasma1	-0.0002	0.0001	0.120	1.000
	Ethanol	7.4X10 ⁻⁵	4.7X10 ⁻⁵	0.113	1.000
	Poison2	0.520	0.635	0.413	1.682
	Totnear	0.008	0.014	0.544	1.008
	Containr	1.679	0.800	0.036	5.358
Stomach3	Age	-0.031	0.068	0.652	0.970
	School	0.075	0.161	0.639	1.078
	Exwght	0.003	0.054	0.957	1.003
	Plasma1	9.2X10 ⁻⁵	0.0004	0.826	1.000
	Ethanol	1.6X10 ⁻⁵	1.4X10 ⁻⁴	0.909	1.000
	Poison2	2.962	1.069	0.006	19.329
	Totnear	0.041	0.037	0.257	1.042
Nausea	Age	-0.014	0.025	0.581	0.986
	School	-0.052	0.055	0.344	0.949
	Exwght	0.012	0.023	0.595	1.012
	Plasma1	-6.0X10 ⁻⁵	0.0002	0.705	1.000
	Ethanol	6.1X10 ⁻⁵	5.1X10 ⁻⁵	0.232	1.000
	Poison2	1.066	0.662	0.107	2.903
	Totnear	0.023	0.015	0.118	1.023
	Event1	0.881	0.370	0.017	2.413
	Neuri	0.832	0.496	0.094	2.297
Nausea3	Age	0.051	0.046	0.267	1.052
	School	-0.006	0.110	0.954	0.994
	Exwght	-0.005	0.044	0.912	0.995
	Plasma1	-0.0004	0.0004	0.293	1.000
	Ethanol	8.1X10 ⁻⁵	1.0X10 ⁻⁴	0.426	1.000
	Poison2	1.200	0.992	0.226	3.321
	Totnear	-0.033	0.038	0.384	0.967
	Event	0.599	0.318	0.059	1.821
	Fumes	1.936	0.899	0.031	6.933

Dizzy	Age	-0.003	0.022	0.875	0.997
	School	0.023	0.050	0.652	1.023
	Exwght	-0.014	0.023	0.532	0.986
	Plasma1	-0.0002	0.0001	0.159	1.000
	Ethanol	4.2×10^{-5}	4.7×10^{-5}	0.368	1.000
	Poison2	0.384	0.642	0.550	1.468
	Totnear	-0.006	0.014	0.658	0.994
	Exp	0.674	0.361	0.061	1.963
	Fumes	0.701	0.485	0.149	2.016
	Homegif	0.730	0.417	0.080	2.074
	Grnddur	0.114	0.056	0.041	1.120
	Event1	0.520	0.347	0.134	1.681
	Dizzy3	Age	-0.008	0.034	0.814
School		0.004	0.087	0.967	1.004
Exwght		0.010	0.029	0.744	1.010
Plasma1		-0.0001	0.0002	0.625	1.000
Ethanol		2.1×10^{-5}	8.1×10^{-5}	0.798	1.000
Poison2		1.771	0.748	0.018	5.878
Totnear		-0.020	0.026	0.451	0.980
Epilep		2.360	1.088	0.030	10.586
Gait		Age	0.057	0.032	0.077
	School	-0.052	0.094	0.579	0.949
	Exwght	-0.004	0.004	0.314	0.958
	Plasma1	-0.0006	0.0003	0.059	0.999
	Ethanol	-0.0001	0.001	0.298	1.000
	Poison2	2.516	0.833	0.003	12.385
	Totnear	0.034	0.027	0.209	1.034
	Fumes	1.091	0.729	0.135	2.976
	Neuri	1.577	0.732	0.031	4.841
Gait3	Age	0.015	0.058	0.794	1.002
	School	-0.386	0.255	0.131	0.680
	Exwght	-0.088	0.139	0.530	0.916
	Plasma1	-0.0001	0.0005	0.792	1.000
	Ethanol	6.3×10^{-5}	1.0×10^{-4}	0.641	1.000
	Poison2	2.667	1.282	0.038	14.390
	Totnear	-0.056	0.066	0.393	0.945
Numbn	Age	0.026	0.032	0.413	1.026
	School	-0.045	0.083	0.587	0.956
	Exwght	-0.005	0.031	0.879	0.995
	Plasma1	-1.7×10^{-4}	0.0002	0.449	1.000
	Ethanol	1.8×10^{-5}	7.4×10^{-4}	0.811	1.000
	Poison2	0.432	0.938	0.645	1.540
	Totnear	0.004	0.023	0.848	1.004
	Diab	2.286	1.771	0.197	9.837
	Fumes	1.223	0.637	0.055	3.398
Numbn3	Age	0.042	0.045	0.347	1.043
	School	0.109	0.132	0.409	1.115
	Exwght	-0.054	0.080	0.498	0.947
	Plasma1	-0.0001	0.0003	0.701	1.000
	Ethanol	4.7×10^{-5}	1.1×10^{-4}	0.684	1.000
	Poison2	2.228	1.035	0.031	9.279
	Totnear	-0.051	0.056	0.370	0.951

Paras	Age	0.021	0.024	0.368	1.021
	School	-0.010	0.059	0.083	0.902
	Exwght	-0.008	0.024	0.725	0.992
	Plasma1	-3.0X10 ⁻⁵	0.0002	0.851	1.000
	Ethanol	-1.0X10 ⁻⁵	5.5X10 ⁻⁵	0.813	1.000
	Poison2	0.476	0.716	0.506	1.610
	Totnear	-0.003	0.017	0.866	0.997
	Fumes	0.790	0.517	0.127	2.203
	Neuri	1.022	0.494	0.039	2.780
Paras3	Age	0.064	0.038	0.091	1.066
	School	0.065	0.101	0.516	1.068
	Exwght	-0.014	0.033	0.666	0.986
	Plasma1	-3.4X10 ⁻⁵	0.0003	0.903	1.000
	Ethanol	-0.0001	0.0001	0.337	1.000
	Poison2	1.106	1.100	0.315	3.022
	Totnear	-0.081	0.056	0.150	0.922
	Nicotine	0.042	0.018	0.019	1.043
	Ear	Age	-0.024	0.035	0.493
School		0.002	0.089	0.985	1.002
Exwght		0.028	0.029	0.335	1.028
Plasma1		-1.8X10 ⁻⁴	0.0002	0.468	1.000
Ethanol		5.8X10 ⁻⁵	8.3X10 ⁻⁵	0.945	1.000
Poison2		1.731	0.738	0.019	5.648
Totnear		0.008	0.024	0.725	1.008
Innum		2.359	1.084	0.030	10.582
Ear3		Age	0.075	0.050	0.135
	School	0.257	0.171	0.132	1.293
	Exwght	0.018	0.040	0.659	1.018
	Plasma1	-0.0008	0.0005	0.124	0.999
	Ethanol	-4.0X10 ⁻⁴	2.7X10 ⁻⁴	0.139	1.000
	Poison2	2.659	1.252	0.034	14.283
	Totnear	-0.073	0.070	0.294	0.929
	Event	0.599	0.318	0.059	1.821
	Fumes	1.936	0.899	0.031	6.933
	Event	0.599	0.318	0.059	1.821
	Fumes	1.936	0.899	0.031	6.933
Weak	Age	-0.025	0.027	0.352	0.975
	School	-0.136	0.059	0.021	0.873
	Exwght	-0.002	0.023	0.926	0.998
	Plasma1	-2.5X10 ⁻⁴	0.0002	0.098	1.000
	Ethanol	9.9X10 ⁻⁵	5.5X10 ⁻⁵	0.074	1.000
	Poison2	0.967	0.688	0.160	2.630
	Totnear	-0.005	0.017	0.748	0.995
	Playvid	-2.436	1.051	0.020	0.088
	Fumes	1.230	0.547	0.025	3.422
Weak3	Age	0.023	0.041	0.570	1.023
	School	-0.062	0.113	0.585	0.940
	Exwght	-3.0X10 ⁻⁵	0.039	0.999	1.000
	Plasma1	-0.0005	0.0003	0.184	1.000
	Ethanol	-8.0X10 ⁻⁵	0.0001	0.507	1.000
	Poison2	1.065	1.055	0.313	2.901
	Totnear	-0.010	0.034	0.783	0.990
	Epilep	2.942	1.109	0.008	18.961

Limb	Age	0.031	0.025	0.210	1.032
	School	-0.022	0.060	0.719	0.979
	Exwght	-0.022	0.023	0.337	0.979
	Plasma1	-2.9X10 ⁻⁴	0.0002	0.070	1.000
	Ethanol	4.2X10 ⁻⁵	5.7X10 ⁻⁵	0.468	1.000
	Poison2	1.889	0.737	0.010	6.610
	Totnear	0.002	0.016	0.894	1.002
	Playvid	-1.359	0.777	0.080	0.257
	Sitquant	-0.004	0.002	0.043	0.996
Limb3	Age	0.069	0.033	0.036	1.071
	School	-0.095	0.084	0.262	0.910
	Exwght	-0.007	0.031	0.831	0.993
	Plasma1	-4.5X10 ⁻⁵	0.0002	0.853	1.000
	Ethanol	-5.0X10 ⁻⁵	7.5X10 ⁻⁵	0.468	1.000
	Poison2	0.431	0.947	0.649	1.539
	Totnear	-0.050	0.032	0.117	0.951
	Dagga	1.603	0.612	0.009	4.968
	Runny	Age	-0.023	0.022	0.297
School		-0.045	0.050	0.375	0.965
Exwght		0.007	0.020	0.711	1.007
Plasma1		-1.3X10 ⁻⁴	0.0001	0.354	1.000
Ethanol		6.4X10 ⁻⁵	4.5X10 ⁻⁵	0.158	1.000
Poison2		1.048	0.592	0.077	2.851
Totnear		0.008	0.014	0.579	1.008
Lifetot		0.279	0.135	0.038	1.322
Runny3	Age	0.046	0.035	0.188	1.047
	School	0.041	0.099	0.674	1.042
	Exwght	-0.0005	0.034	0.988	0.999
	Plasma1	-0.0004	0.0003	0.239	1.000
	Ethanol	-5.0X10 ⁻⁵	1.1X10 ⁻⁴	0.628	1.000
	Poison2	1.260	0.959	0.189	3.524
	Totnear	-0.011	0.032	0.741	0.989
Head	Age	0.001	0.021	0.946	1.001
	School	0.013	0.048	0.781	1.013
	Exwght	-0.013	0.021	0.549	0.987
	Plasma1	-2.4X10 ⁻⁴	0.0001	0.056	1.000
	Ethanol	5.1X10 ⁻⁵	4.7X10 ⁻⁵	0.284	1.000
	Poison2	0.808	0.667	0.226	2.242
	Totnear	-0.010	0.013	0.471	0.990
	Exp	0.344	0.467	0.462	1.410
	Fumes	0.772	0.513	0.133	2.163
Head3	Age	0.030	0.034	0.378	1.030
	School	-0.001	0.079	0.992	0.999
	Exwght	0.010	0.033	0.757	1.010
	Plasma1	-0.0001	0.0002	0.710	1.000
	Ethanol	-7.0X10 ⁻⁵	7.7X10 ⁻⁵	0.364	1.000
	Poison2	2.152	0.773	0.005	8.605
	Totnear	0.008	0.022	0.710	1.008
	Brain	1.560	0.822	0.058	4.757
	Cage	1.038	0.364	0.004	2.824

Sleepy	Age	-0.038	0.024	0.116	0.963
	School	-0.073	0.056	0.191	0.929
	Exwght	-0.004	0.023	0.846	0.996
	Plasma1	-1.4X10 ⁻⁴	0.0001	0.322	1.000
	Ethanol	1.5X10 ⁻⁴	5.0X10 ⁻⁵	0.004	1.000
	Poison2	0.901	0.780	0.248	2.463
	Totnear	-0.016	0.015	0.306	0.985
	Exp	0.418	0.563	0.458	1.519
	Event	0.140	0.164	0.393	1.151
Sleepy3	Age	-0.001	0.032	0.686	0.987
	School	-0.121	0.074	0.103	0.886
	Exwght	0.001	0.029	0.968	1.001
	Plasma1	-0.0001	0.0002	0.521	1.000
	Ethanol	4.1X10 ⁻⁵	6.4X10 ⁻⁴	0.520	1.000
	Poison2	0.902	0.875	0.303	2.465
	Totnear	-0.006	0.021	0.784	0.994
	Acute1	0.026	0.016	0.098	1.027
	Chest	Age	-0.024	0.024	0.309
School		-0.072	0.054	0.186	0.931
Exwght		0.023	0.022	0.295	1.023
Plasma1		-3.0X10 ⁻⁴	0.0002	0.050	1.000
Ethanol		3.0X10 ⁻⁵	5.2X10 ⁻⁵	0.567	1.000
Poison2		1.077	0.623	0.084	2.935
Totnear		-0.022	0.017	0.196	0.978
Event		0.441	0.143	0.002	1.555
Grnddur		0.098	0.039	0.012	1.103
Chest3	Age	0.055	0.035	0.121	1.056
	School	-0.081	0.089	0.366	0.923
	Exwght	-0.019	0.044	0.658	0.981
	Plasma1	-0.0001	0.0002	0.769	1.000
	Ethanol	-1.9X10 ⁻⁴	1.1X10 ⁻⁴	0.711	1.000
	Poison2	0.801	0.886	0.366	2.228
	Totnear	-0.035	0.032	0.273	0.966
	Cage	0.982	0.381	0.010	2.669
	Tired	Age	-0.036	0.021	0.089
School		-0.075	0.047	0.112	0.928
Exwght		-0.022	0.023	0.339	0.979
Plasma1		-1.6X10 ⁻⁴	0.0001	0.194	1.000
Ethanol		-2.0X10 ⁻⁵	5.1X10 ⁻⁵	0.711	1.000
Poison2		1.471	0.652	0.024	4.354
Totnear		0.021	0.014	0.117	1.021
Fumes		0.199	0.474	0.675	1.220
Event		0.510	0.140	0.0003	1.665
Tired3	Age	0.036	0.031	0.248	1.036
	School	-0.130	0.076	0.085	0.878
	Exwght	-0.032	0.034	0.339	0.968
	Plasma1	-3.0X10 ⁻⁵	0.0002	0.987	1.000
	Ethanol	-1.0X10 ⁻⁴	7.3X10 ⁻⁵	0.161	1.000
	Poison2	1.819	0.699	0.009	6.167
	Totnear	-0.021	0.019	0.278	1.021
	Cage	0.698	0.315	0.027	2.010
	Mast	0.076	0.045	0.094	1.079

Table A7.6 Multiple logistic regression analysis of symptom score outcomes amongst deciduous fruit farm workers using cumulative exposure (EXWGHT) in the analyses

<u>Outcome</u>	<u>Predictor</u>	<u>Parameter Estimate</u>	<u>Standard Error</u>	<u>P-value</u>	<u>Odds Ratio</u>
Nnscore	Age	0.011	0.020	0.596	1.011
	School	-0.010	0.049	0.831	0.990
	Exwght	-0.010	0.020	0.630	0.990
	Plasma	-0.938	1.245	0.451	0.391
	Ethano	0.375	0.356	0.292	1.455
	Poison2	0.837	0.779	0.283	2.309
	Totnear	0.007	0.014	0.594	1.007
	Exp	0.897	0.340	0.008	2.452
	Event	0.435	0.204	0.033	1.545
	Fumes	1.756	0.709	0.013	5.787
	Playvid	-0.535	0.421	0.204	0.586
	Cage	0.241	0.135	0.074	1.273
Brain	-0.349	0.474	0.462	0.706	
Ddscore	Age	-0.022	0.022	0.311	0.978
	School	-0.081	0.050	0.105	0.922
	Exwght	0.025	0.021	0.224	1.025
	Plasma	0.234	1.183	0.843	1.264
	Ethano	-0.003	0.368	0.994	0.997
	Poison2	1.181	0.591	0.046	3.259
	Totnear	-0.008	0.015	0.570	0.992
	Event	0.452	0.135	0.001	1.572

Nnscore = 1 if nscore>1 ; Nnscore = 0 if nscore < 2.

Ddscore = 1 if nscore>0 ; Ddscore = 0 if nscore =0.

Plasma = 1 if plasmal<4000; Plasma = 0 if plasmal>3999.

Ethano = 1 if ethanol>3267; ehtano = 0 if ethanol<3267.1

Table A7.7 Multiple linear regression analysis of vibration sense and tremor intensity amongst deciduous fruit workers using cumulative exposure (EXWGHT) in the analyses

<u>Outcome</u>	<u>Model r²</u>	<u>Predictor</u>	<u>B-slope</u>	<u>P-value</u>	<u>Partial r²</u>
Logvib	0.263	Age	0.020	0.0001	0.205
		School	-0.016	0.108	0.010
		Exwght	-0.0004	0.932	0.0006
		Plasma1	3.7X10 ⁻⁵	0.177	0.001
		Ethanol	2.6X10 ⁻⁶	0.781	0.00005
		Totnear	0.005	0.070	0.013
		Poison2	0.056	0.680	0.0003
		Height	0.015	0.008	0.034
		Albl	-0.023	0.043	0.017
TFK	0.176	Age	-0.096	0.0002	0.086
		School	0.085	0.155	0.012
		Exwght	0.042	0.102	0.005
		Plasma1	-1.2X10 ⁻⁴	0.447	0.0001
		Ethanol	1.5X10 ⁻⁵	0.799	0.002
		Totnear	-0.019	0.272	0.003
		Poison2	-1.314	0.120	0.009
		Height	-0.087	0.013	0.028
		GGT1	0.034	0.002	0.042
Tremintd	0.198	Age	0.006	0.289	0.044
		School	-0.014	0.259	0.014
		Exwght	-0.002	0.757	0.002
		Plasma1	-3.3X10 ⁻⁵	0.320	0.0002
		Ethanol	9.4X10 ⁻⁶	0.462	0.002
		Totnear	0.003	0.419	0.005
		Poison2	0.255	0.197	0.002
		Height	0.023	0.002	0.062
		Event	-0.051	0.181	0.011
		Smokee	0.584	0.001	0.040
		Tendayop	0.245	0.014	0.035
Tremintn	0.065	Age	0.002	0.795	0.021
		School	-0.035	0.020	0.027
		Exwght	0.002	0.755	0.003
		Plasma1	1.1X10 ⁻⁵	0.789	0.0002
		Ethanol	5.8X10 ⁻⁶	0.680	0.002
		Totnear	0.003	0.552	0.002
		Poison2	0.023	0.917	0.0002
		Acute	0.002	0.178	0.011

Table A7.8 Multiple logistic regression analysis of maze count and tremor count amongst deciduous fruit farm workers using cumulative exposure (EXWGHT) in the analyses

<u>Outcome</u>	<u>Predictor</u>	<u>Parameter Estimate</u>	<u>Standard Error</u>	<u>P-value</u>	<u>Odds Ratio</u>
Laff	Age	0.003	0.025	0.890	1.003
	School	0.160	0.058	0.006	1.173
	Exwght	-0.005	0.023	0.827	0.995
	Plasma1	0.0001	0.0001	0.366	1.000
	Ethanol	2.9×10^{-5}	5.2×10^{-5}	0.577	1.000
	Poison2	-0.610	0.707	0.389	0.543
	Totnear	-0.048	0.016	0.002	0.953
	Height	-0.013	0.034	0.700	0.987
	Acute	-0.004	0.004	0.299	0.996
	Sitquant	0.001	0.001	0.268	1.001
	Nlaff	Age	-0.031	0.020	0.109
School		0.051	0.043	0.229	1.053
Exwght		0.020	0.019	0.291	1.020
Plasma1		-0.0001	0.0001	0.272	1.000
Ethanol		-3.0×10^{-5}	4.4×10^{-5}	0.525	1.000
Poison2		-0.355	0.593	0.550	0.701
Totnear		0.011	0.013	0.388	1.011
Height		-0.049	0.025	0.049	0.952
Sitquant		0.002	0.001	0.038	1.002
Maztimd		Age	0.023	0.019	0.219
	School	-0.038	0.041	0.344	0.962
	Exwght	0.007	0.018	0.702	1.007
	Plasma1	-8.0×10^{-5}	0.0001	0.460	1.000
	Ethanol	-5.0×10^{-5}	4.5×10^{-5}	0.260	1.000
	Poison2	-0.024	0.562	0.966	1.024
	Totnear	0.004	0.012	0.707	1.004
	Mast	0.039	0.026	0.128	1.040
	Maztimn	Age	0.023	0.019	0.225
School		-0.030	0.041	0.466	0.970
Exwght		0.035	0.021	0.100	1.035
Plasma1		-0.0001	0.0001	0.536	1.000
Ethanol		-1.0×10^{-5}	4.6×10^{-5}	0.764	1.000
Poison2		0.569	0.625	0.362	1.767
Totnear		-0.006	0.012	0.615	0.994
Mast		0.032	0.026	0.225	1.032
Mazectd		Age	-0.030	0.020	0.144
	School	0.155	0.045	0.001	1.164
	Exwght	-0.033	0.022	0.137	0.968
	Plasma1	3.0×10^{-5}	0.0001	0.778	1.000
	Ethanol	1.0×10^{-5}	4.7×10^{-5}	0.826	1.000
	Poison2	-0.140	0.623	0.822	0.869
	Totnear	0.015	0.013	0.232	1.015
	Height	-0.022	0.025	0.377	0.978
	Cage	0.236	0.125	0.058	1.266

Mazectn	Age	-0.047	0.019	0.015	0.954
	School	0.049	0.041	0.236	1.050
	Exwght	-0.002	0.019	0.913	0.998
	Plasma1	5.0×10^{-5}	0.0001	0.235	1.000
	Ethanol	2.7×10^{-5}	4.2×10^{-5}	0.628	1.000
	Poison2	0.239	0.580	0.680	1.270
	Totnear	0.003	0.012	0.824	1.003

Table A7.9 Multiple linear regression analysis of WHO NCTB battery among deciduous fruit workers using cumulative exposure (EXWGHT) in the analyses

<u>Outcome</u>	<u>Model r²</u>	<u>Predictor</u>	<u>B-slope</u>	<u>P-value</u>	<u>Partial r²</u>
Aimwrng	0.248	Age	1.361	0.0001	0.207
		School	-1.103	0.098	0.010
		Exwght	0.170	0.313	0.001
		Plasma1	-0.0004	0.697	0.003
		Ethanol	8.7X10 ⁻⁵	0.821	0.00002
		Totnear	-0.039	0.726	0.001
		Poison2	-3.464	0.544	0.002
		Sqrj10	-5.188	0.006	0.034
Spanf	0.281	Age	-0.017	0.043	0.073
		School	0.116	0.0001	0.171
		Exwght	-0.001	0.878	0.0005
		Plasma1	1.4X10 ⁻⁵	0.762	0.0004
		Ethanol	4.8X10 ⁻⁶	0.009	0.044
		Totnear	0.003	0.522	0.003
		Poison2	0.098	0.700	0.0003
		Innum	-0.653	0.058	0.016
Spanb	0.242	Age	-0.008	0.400	0.059
		School	0.084	0.002	0.100
		Exwght	-0.003	0.758	0.001
		Plasma1	6.5X10 ⁻⁶	0.908	0.002
		Ethanol	1.9X10 ⁻⁵	0.366	0.017
		Totnear	-0.002	0.790	0.0002
		Poison2	-0.039	0.898	0.001
		Innum	-1.844	0.0001	0.086
Spam	0.345	Age	-0.025	0.001	0.091
		School	0.199	0.0001	0.189
		Exwght	-0.004	0.764	0.001
		Plasma1	2.1X10 ⁻⁵	0.799	0.002
		Ethanol	6.7X10 ⁻⁶	0.033	0.043
		Totnear	0.002	0.851	0.002
		Poison2	0.059	0.893	0.00004
		Innum	-2.498	0.0001	0.075
Scoref	0.296	Age	-0.030	0.034	0.078
		School	0.204	0.0001	0.181
		Exwght	0.002	0.860	0.003
		Plasma1	3.7X10 ⁻⁵	0.639	0.001
		Ethanol	8.1X10 ⁻⁵	0.009	0.043
		Totnear	0.005	0.586	0.002
		Poison2	0.317	0.464	0.002
		Innum	-1.120	0.041	0.019

Scoreb	0.225	Age	-0.023	0.124	0.067
		School	0.134	0.0001	0.010
		Exwght	0.005	0.716	0.005
		Plasma1	7.8×10^{-5}	0.366	0.007
		Ethanol	3.4×10^{-5}	0.300	0.014
		Totnear	-0.002	0.796	0.0001
		Poison2	0.216	0.642	0.0003
		Innum	-2.202	0.0005	0.052
		Raw	0.339	Age	-0.054
School	0.333			0.0001	0.188
Exwght	0.009			0.637	0.006
Plasma1	5.3×10^{-5}			0.697	0.002
Ethanol	1.0×10^{-4}			0.046	0.034
Totnear	0.004			0.774	0.001
Poison2	0.547			0.450	0.001
Innum	-3.394			0.0006	0.052
Waissp	0.278			Age	-0.023
		School	0.231	0.0001	0.174
		Exwght	0.001	0.949	0.001
		Plasma1	3.2×10^{-5}	0.741	0.001
		Ethanol	8.7×10^{-5}	0.023	0.037
		Totnear	0.0001	0.988	0.0001
		Poison2	0.302	0.562	0.0006
		Innum	-2.084	0.005	0.036
		Benton	0.283	Age	-0.036
School	0.195			0.0001	0.149
Exwght	0.006			0.719	0.003
Plasma1	7.4×10^{-5}			0.421	0.005
Ethanol	2.3×10^{-6}			0.948	0.001
Totnear	-0.006			0.575	0.001
Poison2	0.235			0.636	0.001
Innum	-1.549			0.022	0.023
Stalt3t	0.292			Age	-0.168
		School	0.370	0.002	0.054
		Exwght	-0.029	0.598	0.001
		Plasma1	3.1×10^{-4}	0.334	0.003
		Ethanol	1.6×10^{-4}	0.185	0.032
		Totnear	0.014	0.675	0.007
		Poison2	-1.391	0.400	0.003
		Innum	-3.708	0.099	0.019
		Spr1	1.766	0.114	0.017
		Eryth	-0.143	0.096	0.017
		Dagga	2.448	0.007	0.029
		Glue	7.498	0.028	0.022
		Stalt3d	0.017	Age	-0.008
School	-0.004			0.790	0.001
Exwght	0.003			0.581	0.003
Plasma1	1.6×10^{-5}			0.667	0.0004
Ethanol	3.4×10^{-6}			0.808	0.001
Totnear	0.006			0.144	0.009
Poison2	0.067			0.735	0.001

Sta2t4t	0.248	Age	-0.024	0.003	0.135
		School	0.197	0.160	0.023
		Exwght	-0.088	0.133	0.004
		Plasma1	5.9×10^{-4}	0.091	0.016
		Ethanol	3.2×10^{-4}	0.025	0.043
		Totnear	0.055	0.171	0.012
		Poison2	-0.593	0.763	0.0005
		Innum	-5.395	0.039	0.018
		Playvid	2.430	0.035	0.022
Sta2t4d	0.083	Age	0.002	0.834	0.005
		School	0.009	0.676	0.002
		Exwght	-0.004	0.658	0.0002
		Plasma1	1.5×10^{-4}	0.008	0.025
		Ethanol	4.9×10^{-6}	0.083	0.001
		Totnear	0.011	0.080	0.010
		Poison2	0.077	0.789	0.001
		Recalc	0.001	0.003	0.041
		Waissyb	0.303	Age	0.014
School	0.245			0.0001	0.283
Exwght	0.002			0.831	0.001
Plasma1	7.7×10^{-6}			0.911	0.0004
Ethanol	4.7×10^{-5}			0.081	0.013
Totnear	0.004			0.589	0.0005
Poison2	0.593			0.123	0.011
Aim1t2	0.547	Age	-1.328	0.0001	0.317
		School	5.022	0.0001	0.316
		Exwght	-0.435	0.043	0.014
		Plasma1	1.5×10^{-3}	0.233	0.008
		Ethanol	2.8×10^{-4}	0.569	0.001
		Totnear	0.078	0.585	0.001
		Poison2	7.910	0.279	0.005
Sqrtam2	0.326	Age	-0.021	0.078	0.112
		School	0.211	0.0001	0.226
		Exwght	-0.015	0.190	0.007
		Plasma1	1.0×10^{-4}	0.145	0.011
		Ethanol	1.5×10^{-4}	0.564	0.001
		Totnear	0.001	0.908	0.00001
		Poison2	0.166	0.667	0.001
Digitc	0.469	Age	-0.030	0.0001	0.171
		School	1.679	0.0001	0.342
		Exwght	-0.009	0.896	0.00004
		Plasma1	1.8×10^{-4}	0.661	0.002
		Ethanol	2.9×10^{-4}	0.069	0.014
		Totnear	0.034	0.448	0.001
		Poison2	3.200	0.161	0.009

Table A7.10 Multiple linear regression analysis of information processing tests amongst deciduous fruit workers using cumulative exposure (EXWGHT) in the analyses

<u>Outcome</u>	<u>Model r²</u>	<u>Predictor</u>	<u>B-slope</u>	<u>P-value</u>	<u>Partial r²</u>
Lavrt2	0.110	Age	0.002	0.463	0.001
		School	-0.006	0.205	0.012
		Exwght	0.0007	0.718	0.0001
		Plasma1	8.1X10 ⁻⁶	0.482	0.001
		Ethanol	6.0X10 ⁻⁶	0.188	0.008
		Totnear	0.001	0.640	0.002
		Poison2	0.017	0.785	0.0004
		Height	-0.007	0.005	0.038
		Prevent	0.006	0.079	0.019
		Totexp	-0.004	0.018	0.029
		Lavmt2	0.107	Age	0.003
School	-0.007			0.096	0.018
Exwght	-0.001			0.784	0.002
Plasma1	-3.2X10 ⁻⁷			0.978	0.0002
Ethanol	4.9X10 ⁻⁶			0.483	0.010
Totnear	-0.002			0.239	0.007
Poison2	0.038			0.545	0.002
Alcwknd	-0.0001			0.433	0.016
Recalc	-0.0001			0.410	0.004
Lavrt4	0.099			Age	0.0003
		School	-0.006	0.137	0.014
		Exwght	0.0004	0.818	0.0001
		Plasma1	2.6X10 ⁻⁶	0.793	0.00003
		Ethanol	3.0X10 ⁻⁶	0.419	0.005
		Totnear	0.001	0.342	0.003
		Poison2	0.056	0.311	0.005
		Homegif	-0.068	0.042	0.018
		Totcum	-0.060	0.063	0.009
		Protect	-0.060	0.003	0.042
Lavmt4	0.115	Age	0.005	0.020	0.067
		School	-0.002	0.595	0.002
		Exwght	0.0002	0.924	0.0004
		Plasma1	2.8X10 ⁻⁶	0.816	0.001
		Ethanol	2.5X10 ⁻⁶	0.693	0.012
		Totnear	-0.002	0.082	0.015
		Poison2	0.050	0.444	0.003
		Recalc	-0.0002	0.059	0.018
		Lavrt6	0.073	Age	0.001
School	-0.008			0.057	0.015
Exwght	-0.002			0.358	0.005
Plasma1	3.6X10 ⁻⁶			0.729	0.0001
Ethanol	5.2X10 ⁻⁶			0.206	0.010
Totnear	0.001			0.471	0.002
Poison2	0.042			0.477	0.002
Homegif	-0.072			0.045	0.019
Totcum	-0.064			0.062	0.016

Lavmt6	0.091	Age	0.006	0.003	0.056
		School	-0.006	0.195	0.009
		Exwght	-0.001	0.656	0.002
		Plasma1	-2.2X10 ⁻⁷	0.985	0.0002
		Ethanol	5.4X10 ⁻⁶	0.228	0.010
		Totnear	-0.002	0.071	0.016
		Poison2	0.009	0.890	0.0001
Lavrt8	0.114	Age	0.0003	0.872	0.003
		School	-0.006	0.235	0.006
		Exwght	0.0001	0.962	0.001
		Plasma1	7.5X10 ⁻⁷	0.950	0.00004
		Ethanol	4.3X10 ⁻⁶	0.376	0.003
		Totnear	0.001	0.652	0.0004
		Poison2	0.082	0.227	0.007
		Height	-0.008	0.005	0.039
		Homegif	-0.131	0.002	0.045
		Totcum	-0.068	0.085	0.013
		Lavmt8	0.124	Age	0.006
School	-0.002			0.565	0.002
Exwght	0.0002			0.911	0.0001
Plasma1	-2.9X10 ⁻⁶			0.789	0.00003
Ethanol	-7.7X10 ⁻⁷			0.856	0.002
Totnear	-0.003			0.010	0.035
Poison2	0.043			0.483	0.002
Lavrt10	0.086	Age	0.002	0.646	0.003
		School	-0.012	0.262	0.013
		Exwght	-0.002	0.624	0.00001
		Plasma1	-1.7X10 ⁻⁵	0.516	0.005
		Ethanol	-4.4X10 ⁻⁷	0.967	0.001
		Totnear	0.001	0.804	0.0004
		Poison2	-0.007	0.957	0.00002
		Locc	-0.169	0.022	0.043
Sitquant	-0.0004	0.074	0.022		
Lavmt10	0.100	Age	-0.004	0.431	0.038
		School	0.001	0.881	0.005
		Exwght	-0.003	0.390	0.001
		Plasma1	-1.4X10 ⁻⁵	0.453	0.0004
		Ethanol	-7.1X10 ⁻⁶	0.327	0.004
		Totnear	-0.003	0.203	0.010
		Poison2	-0.017	0.863	0.0002
		Decidyr	0.004	0.392	0.016
		Sqrj10	0.050	0.304	0.017
		Totyyears	0.006	0.115	0.014
Tefsc10	0.153	Age	3.3X10 ⁻⁷	0.966	0.0004
		School	-0.00002	0.204	0.011
		Exwght	-6.8X10 ⁻⁶	0.384	0.002
		Plasma1	3.4X10 ⁻⁹	0.937	0.003
		Ethanol	-3.4X10 ⁻⁸	0.045	0.020
		Acute1	1.3X10 ⁻⁵	0.001	0.102
		Totnear	-7.1X10 ⁻⁶	0.120	0.022
		Poison2	-3.2X10 ⁻⁶	0.989	0.00001

Lavrt12	0.064	Age	0.004	0.400	0.006
		School	0.010	0.383	0.005
		Exwght	-0.004	0.495	0.00001
		Plasma1	5.8×10^{-6}	0.826	0.00004
		Ethanol	4.9×10^{-7}	0.964	0.001
		Totnear	-0.0001	0.974	0.000004
		Poison2	-0.030	0.835	0.0003
		Fumes	0.177	0.060	0.032
		Grnddur	0.016	0.070	0.021
Lavmt12	0.110	Age	-0.003	0.596	0.054
		School	0.008	0.273	0.001
		Exwght	-0.003	0.374	0.002
		Plasma1	-3.3×10^{-6}	0.844	0.0007
		Ethanol	5.9×10^{-6}	0.370	0.003
		Totnear	-0.002	0.322	0.007
		Poison2	0.048	0.596	0.002
		Sqrj10	0.011	0.006	0.044
		Lpsrt12	0.112	Age	0.009
School	-0.077			0.009	0.040
Exwght	-0.013			0.331	0.002
Plasma1	-4.8×10^{-5}			0.487	0.0004
Ethanol	-1.6×10^{-5}			0.561	0.002
Totnear	-0.007			0.345	0.005
Poison2	-0.175			0.640	0.001
Eryth	-0.041			0.033	0.028
Farmsize	0.718			0.045	0.028
Lavrt15	0.363	Age	0.015	0.0001	0.137
		School	-0.057	0.0001	0.205
		Exwght	-0.003	0.345	0.006
		Plasma1	2.2×10^{-5}	0.235	0.011
		Ethanol	-2.1×10^{-5}	0.005	0.036
		Totnear	-0.003	0.189	0.006
		Poison2	-0.179	0.093	0.014
Sspin15	0.366	Age	-0.003	0.0001	0.139
		School	0.011	0.0001	0.193
		Exwght	0.0007	0.252	0.007
		Plasma1	-5.2×10^{-6}	0.162	0.010
		Ethanol	4.2×10^{-6}	0.004	0.033
		Totnear	0.0004	0.310	0.004
		Poison2	0.025	0.251	0.006
		Smokee	-0.036	0.030	0.030
Sefin15	0.389	Age	-0.003	0.0001	0.150
		School	0.011	0.0001	0.209
		Exwght	0.0006	0.327	0.006
		Plasma1	-5.0×10^{-6}	0.167	0.010
		Ethanol	4.3×10^{-6}	0.003	0.035
		Totnear	0.0004	0.277	0.004
		Poison2	0.025	0.235	0.007
		Smokee	-0.037	0.024	0.033

Stfa15	0.214	Age	-0.003	0.195	0.042		
		School	0.013	0.006	0.061		
		Exwght	-0.004	0.022	0.004		
		Plasma1	-1.4X10 ⁻⁵	0.262	0.006		
		Ethanol	-1.1X10 ⁻⁶	0.807	0.00001		
		Totnear	0.001	0.483	0.004		
		Poison2	0.060	0.407	0.004		
		Sitquant	-0.0003	0.010	0.029		
		Protect	0.062	0.008	0.042		
		Nicotine	0.004	0.009	0.044		
Lwgi15	0.072	Age	-0.0004	0.423	0.00002		
		School	0.002	0.121	0.012		
		Exwght	0.0007	0.082	0.021		
		Plasma1	3.0X10 ⁻⁷	0.905	0.0004		
		Ethanol	2.2X10 ⁻⁷	0.819	0.0001		
		Totnear	-0.0003	0.303	0.001		
		Poison2	0.026	0.077	0.015		
		Totexp	0.001	0.019	0.025		
		Lvarin15	0.140	Age	-0.012	0.002	0.086
				School	0.015	0.069	0.022
Exwght	-0.0002			0.945	0.0004		
Plasma1	-5.0X10 ⁻⁶			0.805	0.001		
Ethanol	4.8X10 ⁻⁶			0.567	0.0004		
Totnear	0.002			0.367	0.003		
Poison2	0.086			0.459	0.003		
Cage	-0.033			0.132	0.014		
Totcum	-0.110			0.090	0.016		
Lavrt18	0.303			Age	0.015	0.0001	0.202
		School	-0.023	0.0001	0.073		
		Exwght	-0.003	0.238	0.006		
		Plasma1	-1.4X10 ⁻⁵	0.315	0.003		
		Ethanol	-1.8X10 ⁻⁵	0.001	0.050		
		Totnear	-0.0004	0.819	0.0002		
		Poison2	-0.011	0.893	0.0001		
		Lavrt21	0.198	Age	0.011	0.0001	0.122
School	-0.015			0.003	0.039		
Exwght	-0.0004			0.860	0.0003		
Plasma1	-3.7X10 ⁻⁶			0.778	0.00001		
Ethanol	1.4X10 ⁻⁵			0.006	0.039		
Totnear	-0.002			0.172	0.009		
Poison2	0.011			0.885	0.0001		
Dift121	0.132			Age	-12.121	0.001	0.077
		School	11.979	0.133	0.013		
		Exwght	7.600	0.027	0.016		
		Plasma1	0.036	0.084	0.015		
		Ethanol	0.007	0.361	0.005		
		Totnear	-2.267	0.327	0.003		
		Poison2	-162.382	0.148	0.010		

Lavrt24	0.380	Age	0.015	0.0001	0.278
		School	-0.030	0.0001	0.100
		Exwght	-0.001	0.864	0.002
		Plasma1	-1.1X10 ⁻⁵	0.543	0.002
		Ethanol	-6.8X10 ⁻⁶	0.333	0.004
		Totnear	-0.0004	0.857	0.0003
		Poison2	0.021	0.851	0.0002
		Acute1	0.004	0.021	0.037
Sntrn24	0.156	Age	0.018	0.137	0.089
		School	-0.069	0.003	0.052
		Exwght	0.007	0.469	0.006
		Plasma1	-4.7X10 ⁻⁶	0.937	0.0002
		Ethanol	-2.9X10 ⁻⁵	0.201	0.006
		Totnear	0.004	0.573	0.002
		Poison2	-0.039	0.912	0.0001
		Totyyears	0.013	0.184	0.010
		Lavrt30	0.101	Age	0.004
School	0.006			0.303	0.002
Exwght	0.003			0.160	0.011
Plasma1	2.2X10 ⁻⁶			0.877	0.00001
Ethanol	-7.6X10 ⁻⁶			0.164	0.009
Totnear	-0.002			0.217	0.010
Poison2	0.038			0.653	0.001
Fumes	0.096			0.054	0.028
Smokee	0.101			0.103	0.019
Lavrt33	0.306	Age	0.012	0.0001	0.128
		School	-0.028	0.0001	0.085
		Exwght	-0.002	0.864	0.004
		Plasma1	1.9X10 ⁻⁵	0.249	0.001
		Ethanol	-1.6X10 ⁻⁵	0.016	0.032
		Totnear	-0.001	0.764	0.0005
		Poison2	-0.029	0.769	0.001
		Blunt	0.070	0.098	0.022
		GGT1	-0.004	0.0004	0.076
Tpsrc33	0.212	Age	0.013	0.079	0.004
		School	-0.030	0.046	0.031
		Exwght	0.004	0.496	0.0001
		Plasma1	-1.7X10 ⁻⁵	0.666	0.0002
		Ethanol	-3.5X10 ⁻⁵	0.023	0.026
		Totnear	-0.003	0.436	0.003
		Poison2	-0.453	0.124	0.020
		Abnquan	0.001	0.236	0.041
		Normquan	0.002	0.196	0.017
		Sitquant	0.001	0.161	0.014
		Locc	0.261	0.010	0.053
		Nicotine	0.007	0.095	0.023
		Lavrt36	0.267	Age	0.010
School	-0.035			0.010	0.123
Exwght	0.0002			0.952	0.0001
Plasma1	-8.5X10 ⁻⁶			0.680	0.0004
Ethanol	-2.4X10 ⁻⁵			0.003	0.083
Totnear	0.003			0.148	0.023
Poison2	-0.039			0.725	0.001

Tpsrc36	0.171	Age	0.023	0.056	0.101
		School	-0.040	0.154	0.023
		Exwght	0.005	0.677	0.006
		Plasma1	2.1×10^{-5}	0.761	0.0002
		Ethanol	-1.6×10^{-6}	0.951	0.00001
		Totnear	0.017	0.030	0.050
		Poison2	-0.078	0.826	0.001
Tefsc36	0.272	Age	0.008	0.026	0.121
		School	-0.026	0.001	0.094
		Exwght	0.001	0.847	0.002
		Plasma1	-1.1×10^{-5}	0.538	0.001
		Ethanol	-6.5×10^{-6}	0.375	0.006
		Totnear	0.005	0.014	0.067
		Poison2	-0.107	0.281	0.012
Lavrt39	0.107	Age	0.009	0.301	0.050
		School	0.015	0.593	0.008
		Exwght	0.013	0.283	0.035
		Plasma1	-7.4×10^{-6}	0.889	0.001
		Ethanol	-1.6×10^{-5}	0.566	0.014
		Totnear	-0.0003	0.962	0.00001
		Poison2	-0.083	0.874	0.002
Tpsrc39	0.154	Age	-0.012	0.595	0.005
		School	0.011	0.881	0.0002
		Exwght	0.006	0.860	0.025
		Plasma1	-1.9×10^{-4}	0.204	0.080
		Ethanol	5.1×10^{-5}	0.473	0.026
		Totnear	-0.012	0.504	0.015
		Poison2	-0.603	0.584	0.013
Lavrt42	0.114	Age	-0.001	0.780	0.018
		School	-0.027	0.001	0.066
		Exwght	-0.001	0.671	0.000004
		Plasma1	-2.2×10^{-5}	0.288	0.002
		Ethanol	-1.3×10^{-5}	0.115	0.011
		Totnear	-0.001	0.521	0.002
		Poison2	0.028	0.820	0.0002
Totyears	0.007	0.044	0.018		
Lavrt45	0.157	Age	0.007	0.046	0.041
		School	-0.024	0.001	0.071
		Exwght	-0.002	0.475	0.002
		Plasma1	-3.7×10^{-5}	0.041	0.016
		Ethanol	-1.1×10^{-5}	0.137	0.015
		Totnear	-0.001	0.604	0.001
		Poison2	-0.040	0.730	0.001
		Playvid	-0.122	0.047	0.020

Dift145	0.098	Age	3.256	0.116	0.008
		School	-5.005	0.287	0.001
		Exwght	-2.109	0.286	0.006
		Plasma1	-0.020	0.091	0.013
		Ethanol	0.002	0.661	0.002
		Totnear	-1.352	0.312	0.003
		Poison2	-91.496	0.158	0.009
		Lifetot	-51.935	0.0002	0.060
Echo	0.095	Age	-0.011	0.432	0.018
		School	0.109	0.0001	0.051
		Exwght	-0.018	0.195	0.007
		Plasma1	-0.0001	0.120	0.010
		Ethanol	3.2×10^{-5}	0.329	0.006
		Totnear	0.011	0.248	0.006
		Poison2	-0.027	0.954	0.0001
ACT	0.304	Age	-0.079	0.072	0.119
		School	0.389	0.0001	0.130
		Exwght	0.069	0.049	0.011
		Plasma1	-0.0001	0.561	0.005
		Ethanol	7.8×10^{-5}	0.429	0.00002
		Totnear	-0.003	0.901	0.00002
		Poison2	0.501	0.724	0.001
		Innum	-4.991	0.006	0.046
		Domi	3.177	0.016	0.032

Table A7.11 Multiple logistic regression analysis of symptom outcomes amongst deciduous fruit farm workers using average lifetime intensity of exposure (EXWGHTI) in the analyses

<u>Outcome</u>	<u>Predictor</u>	<u>Parameter Estimate</u>	<u>Standard Error</u>	<u>P-value</u>	<u>Odds Ratio</u>
Stomach	Age	-0.016	0.021	0.458	0.984
	School	-0.029	0.051	0.562	0.971
	Exwghti	0.374	0.752	0.619	0.688
	Plasma1	-0.0002	0.0001	0.108	1.000
	Ethanol	7.6×10^{-5}	4.7×10^{-5}	0.104	1.000
	Poison2	0.502	0.634	0.428	1.652
	Totnear	0.008	0.014	0.576	1.008
	Containr	1.661	0.801	0.038	5.265
Stomach3	Age	-0.035	0.064	0.584	0.966
	School	-0.035	0.163	0.770	1.049
	Exwghti	1.342	1.841	0.466	3.825
	Plasma1	1.3×10^{-4}	0.0004	0.768	1.000
	Ethanol	8.7×10^{-6}	1.4×10^{-4}	0.949	1.000
	Poison2	2.904	1.072	0.007	18.250
	Totnear	0.037	0.036	0.307	1.038
Nausea	Age	-0.011	0.025	0.656	0.989
	School	-0.052	0.056	0.355	0.950
	Exwghti	0.273	0.822	0.734	1.314
	Plasma1	-6.0×10^{-5}	0.0002	0.702	1.000
	Ethanol	6.0×10^{-5}	5.1×10^{-5}	0.243	1.000
	Poison2	1.079	0.659	0.102	2.942
	Totnear	0.023	0.015	0.113	1.024
	Event1	0.870	0.370	0.019	2.386
	Neuri	0.821	0.495	0.097	2.273
Nausea3	Age	0.053	0.047	0.259	1.054
	School	-0.008	0.110	0.941	0.992
	Exwghti	0.889	1.574	0.573	2.432
	Plasma1	-0.0004	0.0004	0.293	1.000
	Ethanol	8.4×10^{-5}	1.0×10^{-4}	0.409	1.000
	Poison2	1.050	0.997	0.292	2.859
	Totnear	-0.038	0.039	0.325	0.963
	Event	0.577	0.311	0.064	1.781
	Fumes	1.952	0.905	0.031	7.040
Dizzy	Age	-0.007	0.021	0.747	0.993
	School	0.021	0.050	0.671	1.022
	Exwghti	-0.013	0.722	0.852	0.874
	Plasma1	-0.0002	0.0001	0.154	1.000
	Ethanol	4.4×10^{-5}	4.7×10^{-5}	0.355	1.000
	Poison2	0.323	0.639	0.581	1.423
	Totnear	-0.007	0.014	0.600	0.993
	Exp	0.632	0.364	0.083	1.880
	Fumes	0.692	0.485	0.154	1.997
	Homegif	0.734	0.416	0.078	2.084
	Grnddur	0.110	0.055	0.045	1.116
	Event1	0.520	0.347	0.133	1.683

Dizzy3	Age	-0.005	0.038	0.874	0.995
	School	-0.003	0.088	0.974	0.997
	Exwghti	0.759	1.123	0.450	2.137
	Plasma1	-0.0001	0.0002	0.642	1.000
	Ethanol	1.7×10^{-5}	8.1×10^{-5}	0.836	1.000
	Poison2	1.743	0.740	0.018	5.716
	Totnear	-0.021	0.026	0.419	0.979
	Epilep	2.360	1.086	0.030	10.589
Gait	Age	0.047	0.032	0.147	1.048
	School	-0.044	0.095	0.642	0.957
	Exwghti	-2.882	1.941	0.138	0.056
	Plasma1	-0.0006	0.0003	0.051	0.999
	Ethanol	-0.0001	0.0001	0.298	1.000
	Poison2	2.708	0.862	0.002	15.005
	Totnear	0.040	0.028	0.154	1.040
	Fumes	1.164	0.733	0.112	3.203
	Neuri	1.617	0.741	0.029	5.036
Gait3	Age	0.008	0.058	0.889	1.008
	School	-0.371	0.253	0.142	0.690
	Exwghti	-3.413	4.364	0.434	0.033
	Plasma1	-0.0001	0.0005	0.777	1.000
	Ethanol	6.5×10^{-5}	1.3×10^{-4}	0.630	1.000
	Poison2	2.680	1.284	0.037	14.585
	Totnear	-0.056	0.066	0.396	0.945
Numbn	Age	0.027	0.032	0.401	1.027
	School	-0.056	0.084	0.509	0.946
	Exwghti	1.172	1.054	0.266	3.229
	Plasma1	-1.6×10^{-4}	0.0002	0.477	1.000
	Ethanol	1.7×10^{-5}	7.4×10^{-4}	0.818	1.000
	Poison2	0.242	0.951	0.799	1.274
	Totnear	-0.002	0.023	0.944	0.998
	Diab	2.045	1.627	0.209	7.726
	Fumes	1.214	0.640	0.058	3.367
Numbn3	Age	0.039	0.046	0.405	1.004
	School	0.103	0.133	0.439	1.109
	Exwghti	-0.326	1.927	0.866	0.722
	Plasma1	-0.0001	0.0003	0.719	1.000
	Ethanol	3.0×10^{-5}	1.1×10^{-4}	0.794	1.000
	Poison2	2.073	1.017	0.042	7.947
	Totnear	-0.052	0.056	0.352	0.950
Paras	Age	0.020	0.023	0.397	1.020
	School	-0.103	0.060	0.084	0.902
	Exwghti	0.026	0.869	0.956	1.027
	Plasma1	-3.0×10^{-5}	0.0002	0.835	1.000
	Ethanol	-1.0×10^{-5}	5.5×10^{-5}	0.818	1.000
	Poison2	0.430	0.714	0.547	1.538
	Totnear	-0.004	0.017	0.803	0.996
	Fumes	0.780	0.517	0.132	2.181
	Neuri	1.032	0.493	0.036	2.806

Paras3	Age	0.065	0.039	0.094	1.067
	School	0.064	0.101	0.529	1.066
	Exwghti	0.746	1.429	0.602	2.108
	Plasma1	2.3×10^{-5}	0.0003	0.934	1.000
	Ethanol	-0.0001	0.0001	0.332	1.000
	Poison2	0.856	1.108	0.440	2.353
	Totnear	-0.083	0.055	0.127	0.920
	Nicotine	0.039	0.018	0.029	1.039
Ear	Age	-0.017	0.033	0.612	0.983
	School	-0.013	0.091	0.891	0.988
	Exwghti	1.324	1.116	0.234	3.758
	Plasma1	-1.6×10^{-4}	0.0002	0.508	1.000
	Ethanol	5.6×10^{-5}	8.3×10^{-5}	0.985	1.000
	Poison2	1.741	0.733	0.018	5.701
	Totnear	0.007	0.024	0.762	1.007
	Innum	2.308	1.056	0.029	10.051
Ear3	Age	0.078	0.050	0.118	1.081
	School	0.246	0.168	0.143	1.279
	Exwghti	0.896	1.733	0.605	2.449
	Plasma1	-0.0008	0.0005	0.127	0.999
	Ethanol	-4.0×10^{-4}	2.7×10^{-4}	0.138	1.000
	Poison2	2.664	1.247	0.033	14.349
	Totnear	-0.072	0.068	0.290	0.930
Weak	Age	-0.026	0.026	0.323	0.975
	School	-0.145	0.060	0.015	0.865
	Exwghti	0.386	0.825	0.640	1.471
	Plasma1	-2.3×10^{-4}	0.0002	0.139	1.000
	Ethanol	9.5×10^{-5}	5.5×10^{-5}	0.084	1.000
	Poison2	0.938	0.685	0.171	2.556
	Totnear	-0.004	0.017	0.791	0.996
	Playvid	-2.374	1.051	0.024	0.093
	Fumes	1.217	0.549	0.027	3.378
Weak3	Age	0.021	0.040	0.602	1.021
	School	-0.055	0.113	0.630	0.947
	Exwghti	-0.909	1.913	0.635	0.403
	Plasma1	-0.0005	0.0003	0.177	1.000
	Ethanol	-8.0×10^{-5}	0.0001	0.520	1.000
	Poison2	1.136	1.052	0.280	3.115
	Totnear	-0.008	0.035	0.816	0.992
	Epilep	2.917	1.110	0.009	18.483
Limb	Age	0.025	0.024	0.303	1.025
	School	-0.014	0.060	0.810	0.986
	Exwghti	-1.494	0.930	0.108	0.225
	Plasma1	-3.1×10^{-4}	0.0002	0.054	1.000
	Ethanol	4.8×10^{-5}	5.8×10^{-5}	0.411	1.000
	Poison2	1.941	0.739	0.009	6.968
	Totnear	0.003	0.017	0.875	1.003
	Playvid	-1.375	0.780	0.079	0.253
	Sitquant	-0.004	0.002	0.036	0.996

Limb3	Age	0.068	0.033	0.039	1.070
	School	-0.094	0.085	0.265	0.910
	Exwghti	-0.090	1.315	0.946	0.914
	Plasma1	-4.0X10 ⁻⁵	0.0002	0.870	1.000
	Ethanol	-5.0X10 ⁻⁵	7.5X10 ⁻⁵	0.470	1.000
	Poison2	0.401	0.942	0.670	1.493
	Totnear	-0.050	0.032	0.112	0.951
	Dagga	1.601	0.613	0.009	4.959
Runny	Age	-0.021	0.021	0.314	0.979
	School	-0.053	0.051	0.298	0.948
	Exwghti	0.871	0.699	0.213	2.389
	Plasma1	-1.2X10 ⁻⁴	0.0001	0.380	1.000
	Ethanol	6.2X10 ⁻⁵	4.5X10 ⁻⁵	0.172	1.000
	Poison2	1.015	0.591	0.086	2.759
	Totnear	0.006	0.014	0.672	1.006
	Lifetot	0.289	0.135	0.032	1.335
	Runny3	Age	0.048	0.035	0.178
School		0.034	0.100	0.736	1.034
Exwghti		0.960	0.328	0.470	2.612
Plasma1		-0.0004	0.0003	0.233	1.000
Ethanol		-5.0X10 ⁻⁵	1.1X10 ⁻⁴	0.607	1.000
Poison2		1.163	0.960	0.223	3.200
Totnear		-0.015	0.032	0.647	0.985
Head	Age	-0.002	0.020	0.911	0.998
	School	0.006	0.048	0.899	1.006
	Exwghti	0.609	0.741	0.411	1.839
	Plasma1	-2.2X10 ⁻⁴	0.0001	0.080	1.000
	Ethanol	5.0X10 ⁻⁵	4.8X10 ⁻⁵	0.297	1.000
	Poison2	0.752	0.665	0.258	2.122
	Totnear	-0.011	0.013	0.397	0.989
	Exp	0.367	0.466	0.431	1.444
Fumes	0.757	0.511	0.139	2.132	
Head3	Age	0.033	0.033	0.318	1.034
	School	-0.011	0.080	0.893	0.989
	Exwghti	1.087	1.083	0.316	2.964
	Plasma1	-0.0001	0.0002	0.729	1.000
	Ethanol	-8.0X10 ⁻⁵	7.7X10 ⁻⁵	0.315	1.000
	Poison2	2.104	0.780	0.007	8.197
	Totnear	0.006	0.022	0.786	1.006
	Brain	1.558	0.824	0.059	4.750
	Cage	1.045	0.365	0.004	2.845
Sleepy	Age	-0.039	0.023	0.091	0.962
	School	-0.075	0.056	0.183	0.928
	Exwghti	0.097	0.773	0.901	1.101
	Plasma1	-1.4X10 ⁻⁴	0.0001	0.305	1.000
	Ethanol	1.5X10 ⁻⁴	5.1X10 ⁻⁵	0.004	1.000
	Poison2	0.874	0.774	0.259	2.396
	Totnear	-0.017	0.015	0.271	0.983
	Exp	0.309	0.573	0.589	1.363
	Event	0.130	0.165	0.429	1.139

Sleepy3	Age	-0.014	0.032	0.666	0.986
	School	-0.117	0.075	0.121	0.890
	Exwghti	-0.255	1.033	0.805	0.775
	Plasma1	-0.0001	0.0002	0.503	1.000
	Ethanol	4.4×10^{-5}	6.4×10^{-4}	0.497	1.000
	Poison2	0.930	0.869	0.284	2.534
	Totnear	-0.005	0.021	0.791	0.995
	Acutel	0.028	0.016	0.078	1.028
	Cage	0.500	0.269	0.063	1.649
	Sitquant	0.003	0.001	0.076	1.002
	Exp	-0.234	0.842	0.781	0.791
	Domgard	1.129	0.669	0.091	3.092
	Chest	Age	-0.019	0.023	0.412
School		-0.072	0.055	0.186	0.931
Exwghti		0.498	0.766	0.516	1.645
Plasma1		-2.9×10^{-4}	0.0002	0.053	1.000
Ethanol		2.8×10^{-5}	5.2×10^{-5}	0.581	1.000
Poison2		1.123	0.615	0.068	3.075
Totnear		-0.021	0.017	0.205	0.979
Event		0.434	0.142	0.002	1.543
Grnddur		0.099	0.039	0.011	1.104
Chest3		Age	0.051	0.035	0.140
	School	-0.076	0.089	0.397	0.927
	Exwghti	-0.744	1.528	0.627	0.475
	Plasma1	-0.0001	0.0002	0.737	1.000
	Ethanol	-1.9×10^{-4}	1.1×10^{-4}	0.076	1.000
	Poison2	0.813	0.886	0.356	2.256
	Totnear	-0.035	0.017	0.264	0.965
	Cage	0.975	0.379	0.010	2.651
Tired	Age	-0.041	0.021	0.049	0.960
	School	-0.075	0.047	0.109	0.927
	Exwghti	-0.181	0.688	0.793	0.835
	Plasma1	-1.6×10^{-4}	0.0001	0.192	1.000
	Ethanol	-2.0×10^{-5}	5.1×10^{-5}	0.740	1.000
	Poison2	1.417	0.649	0.029	4.122
	Totnear	0.019	0.013	0.158	1.019
	Fumes	0.181	0.473	0.702	1.200
	Event	0.508	0.140	0.0003	1.662
Tired3	Age	0.029	0.030	0.334	1.030
	School	-0.127	0.075	0.092	0.881
	Exwghti	-0.910	1.184	0.442	0.402
	Plasma1	-7.0×10^{-5}	0.0002	0.970	1.000
	Ethanol	-1.0×10^{-4}	7.3×10^{-5}	0.179	1.000
	Poison2	1.821	0.692	0.009	6.180
	Totnear	0.019	0.019	0.318	1.019
	Cage	0.688	0.314	0.028	1.989
	Mast	0.075	0.046	0.099	1.078

Table A7.12 Multiple logistic regression analysis of symptom score outcomes amongst deciduous fruit farm workers using cumulative exposure (EXWGHTI) in the analyses

<u>Outcome</u>	<u>Predictor</u>	<u>Parameter Estimate</u>	<u>Standard Error</u>	<u>P-value</u>	<u>Odds Ratio</u>
Nnscore	Age	0.008	0.020	0.070	1.008
	School	-0.021	0.049	0.674	0.979
	Exwghti	0.069	0.708	0.374	1.875
	Plasma	-0.902	1.268	0.477	0.406
	Ethano	0.330	0.359	0.358	1.391
	Poison2	0.759	0.774	0.327	2.135
	Totnear	0.005	0.014	0.708	1.005
	Exp	0.767	0.345	0.026	2.154
	Event	0.436	0.204	0.033	1.546
	Fumes	1.743	0.705	0.013	5.716
	Playvid	-0.533	0.419	0.204	0.587
	Cage	0.259	0.134	0.056	1.296
	Brain	-0.344	0.474	0.468	0.709
Ddscore	Age	-0.016	0.022	0.449	0.984
	School	-0.084	0.051	0.097	0.920
	Exwghti	0.790	0.716	0.270	2.203
	Plasma	0.145	1.188	0.902	1.156
	Ethano	-0.016	0.371	0.966	0.984
	Poison2	1.214	0.586	0.038	3.367
	Totnear	-0.008	0.015	0.572	0.992
Event	0.446	0.134	0.001	1.562	

Nnscore = 1 if nscore>1 ; Nnscore = 0 if nscore < 2.

Ddscore = 1 if nscore>0 ; Ddscore = 0 if nscore =0.

Plasma = 1 if plasmal<4000; Plasma = 0 if plasmal>3999.

Ethano = 1 if ethanol>3267; ehtano = 0 if ethanol<3267.1

Table A7.13 Multiple linear regression analysis of vibration sense and tremor intensity amongst deciduous fruit workers using cumulative exposure (EXWGHTI) in the analyses

<u>Outcome</u>	<u>Model r²</u>	<u>Predictor</u>	<u>B-slope</u>	<u>P-value</u>	<u>Partial r²</u>
Logvib	0.262	Age	0.020	0.0001	0.204
		School	-0.015	0.108	0.010
		Exwghti	-0.018	0.898	0.0003
		Plasma1	3.6X10 ⁻⁵	0.180	0.001
		Ethanol	2.7X10 ⁻⁶	0.777	0.00004
		Totnear	0.005	0.068	0.013
		Poison2	0.056	0.678	0.0003
		Height	0.015	0.008	0.034
		Alb1	-0.023	0.044	0.017
		TFK	0.173	Age	-0.086
School	0.085			0.164	0.012
Exwghti	1.121			0.211	0.004
Plasma1	-1.2X10 ⁻⁴			0.471	0.0001
Ethanol	1.1X10 ⁻⁵			0.851	0.002
Totnear	-0.018			0.299	0.003
Poison2	-1.255			0.138	0.009
Height	-0.087			0.013	0.028
GGT1	0.033			0.002	0.040
Tremintd	0.198			Age	0.006
		School	-0.014	0.262	0.014
		Exwghti	-0.027	0.886	0.002
		Plasma1	-3.3X10 ⁻⁵	0.327	0.0001
		Ethanol	9.1X10 ⁻⁶	0.475	0.002
		Totnear	0.003	0.401	0.005
		Poison2	0.249	0.206	0.002
		Height	0.023	0.002	0.062
		Event	-0.051	0.179	0.011
		Smokee	0.581	0.001	0.040
		Tendayop	0.243	0.015	0.034
		Tremintn	0.066	Age	0.002
School	-0.036			0.019	0.027
Exwghti	0.104			0.633	0.005
Plasma1	1.1X10 ⁻⁵			0.784	0.0003
Ethanol	5.4X10 ⁻⁶			0.704	0.001
Totnear	0.002			0.578	0.002
Poison2	0.022			0.919	0.0002
Acute	0.002			0.187	0.011

Table A7.14 Multiple logistic regression analysis of maze count and tremor count amongst deciduous fruit farm workers using average lifetime intensity of exposure (EXWGHTI) in the analyses

<u>Outcome</u>	<u>Predictor</u>	<u>Parameter Estimate</u>	<u>Standard Error</u>	<u>P-value</u>	<u>Odds Ratio</u>	
Laff	Age	0.002	0.023	0.928	1.002	
	School	0.162	0.058	0.005	1.176	
	Exwghti	-0.329	0.789	0.677	0.719	
	Plasma1	0.0001	0.0001	0.376	1.000	
	Ethanol	3.1×10^{-5}	5.2×10^{-5}	0.558	1.000	
	Poison2	-0.599	0.706	0.396	0.549	
	Totnear	-0.047	0.016	0.003	0.954	
	Height	-0.011	0.034	0.747	0.989	
	Acute	-0.004	0.004	0.306	0.996	
	Sitquant	0.001	0.001	0.606	1.001	
	Nlaff	Age	-0.026	0.019	0.161	0.974
School		0.050	0.043	0.244	1.051	
Exwghti		0.589	0.638	0.356	1.802	
Plasma1		-0.0001	0.0001	0.252	1.000	
Ethanol		-3.0×10^{-5}	4.4×10^{-5}	0.502	1.000	
Poison2		-0.340	0.592	0.566	0.712	
Totnear		0.010	0.013	0.429	1.010	
Height		-0.050	0.025	0.045	0.951	
Sitquant		0.002	0.001	0.046	1.002	
Maztimd		Age	0.025	0.018	0.166	1.025
		School	-0.041	0.041	0.320	0.960
	Exwghti	0.313	0.599	0.601	1.367	
	Plasma1	-9.2×10^{-5}	0.0001	0.397	1.000	
	Ethanol	-5.0×10^{-5}	4.5×10^{-5}	0.226	1.000	
	Poison2	0.037	0.562	0.948	1.038	
	Totnear	0.005	0.012	0.656	1.005	
	Mast	0.041	0.026	0.114	1.041	
	Maztimn	Age	0.031	0.019	0.096	1.032
		School	-0.034	0.042	0.417	0.967
Exwghti		1.035	0.628	0.099	2.816	
Plasma1		0.0001	0.0001	0.449	1.000	
Ethanol		-2.0×10^{-5}	4.6×10^{-5}	0.667	1.000	
Poison2		0.588	0.624	0.346	1.800	
Totnear		-0.005	0.012	0.694	0.995	
Mast		0.033	0.026	0.205	1.034	
Mazectd		Age	-0.038	0.020	0.059	0.963
	School	0.152	0.045	0.001	1.164	
	Exwghti	-0.708	0.637	0.266	0.492	
	Plasma1	4.0×10^{-5}	0.0001	0.702	1.000	
	Ethanol	7.7×10^{-6}	4.7×10^{-5}	0.870	1.000	
	Poison2	-0.171	0.624	0.784	0.843	
	Totnear	0.013	0.013	0.299	1.013	
	Height	-0.024	0.025	0.323	0.976	
	Cage	0.236	0.124	0.058	1.266	

Mazectn	Age	-0.048	0.019	0.011	0.953
	School	0.048	0.042	0.246	1.049
	Exwghti	0.054	0.607	0.929	1.056
	Plasma1	6.0×10^{-5}	0.0001	0.585	1.000
	Ethanol	2.8×10^{-5}	4.2×10^{-5}	0.506	1.000
	Poison2	0.217	0.580	0.708	1.243
	Totnear	0.002	0.012	0.899	1.002

Table A7.15 Multiple linear regression analysis of WHO NCTB battery among deciduous fruit workers using cumulative exposure (EXWGHTI) in the analyses

<u>Outcome</u>	<u>Model r²</u>	<u>Predictor</u>	<u>B-slope</u>	<u>P-value</u>	<u>Partial r²</u>
Aimwrng	0.245	Age	1.387	0.0001	0.207
		School	-1.080	0.012	0.010
		Exwghti	3.269	0.563	0.0003
		Plasma1	-0.0005	0.634	0.003
		Ethanol	6.0X10 ⁻⁵	0.878	0.00002
		Totnear	-0.038	0.731	0.001
		Poison2	-2.971	0.600	0.002
		Sqrj10	-4.923	0.009	0.031
Spanf	0.281	Age	-0.017	0.033	0.073
		School	0.116	0.0001	0.171
		Exwghti	-0.031	0.908	0.0009
		Plasma1	1.4X10 ⁻⁵	0.762	0.0005
		Ethanol	4.8X10 ⁻⁶	0.009	0.043
		Totnear	0.003	0.524	0.003
		Poison2	0.096	0.706	0.0004
		Innum	-0.647	0.057	0.016
Spanb	0.245	Age	-0.008	0.338	0.058
		School	0.084	0.0001	0.102
		Exwghti	-0.108	0.727	0.0004
		Plasma1	1.5X10 ⁻⁵	0.786	0.003
		Ethanol	1.9X10 ⁻⁵	0.367	0.016
		Totnear	-0.001	0.907	0.001
		Poison2	-0.025	0.932	0.0003
		Innum	-1.820	0.0001	0.088
Spam	0.351	Age	-0.026	0.059	0.091
		School	0.199	0.0001	0.190
		Exwghti	-0.139	0.761	0.001
		Plasma1	2.9X10 ⁻⁵	0.719	0.002
		Ethanol	6.7X10 ⁻⁶	0.032	0.042
		Totnear	0.002	0.770	0.002
		Poison2	0.071	0.871	0.000002
		Innum	-2.468	0.0001	0.076
Scoref	0.296	Age	-0.029	0.032	0.078
		School	0.204	0.0001	0.180
		Exwghti	0.122	0.789	0.004
		Plasma1	3.7X10 ⁻⁵	0.647	0.001
		Ethanol	8.1X10 ⁻⁵	0.010	0.042
		Totnear	0.005	0.597	0.002
		Poison2	0.316	0.466	0.002
		Innum	-1.202	0.039	0.019

Scoreb	0.225	Age	-0.022	0.135	0.066
		School	0.133	0.0001	0.010
		Exwghti	0.0001	0.994	0.001
		Plasma1	8.3×10^{-5}	0.366	0.008
		Ethanol	3.3×10^{-5}	0.318	0.013
		Totnear	-0.001	0.887	0.0002
		Poison2	0.250	0.588	0.0006
		Innum	-2.235	0.0004	0.056
Raw	0.339	Age	-0.052	0.024	0.101
		School	0.332	0.0001	0.188
		Exwghti	0.190	0.802	0.004
		Plasma1	5.9×10^{-5}	0.662	0.002
		Ethanol	1.0×10^{-4}	0.052	0.032
		Totnear	0.005	0.726	0.002
		Poison2	0.580	0.423	0.002
		Innum	-3.431	0.0005	0.054
Waissp	0.278	Age	-0.023	0.159	0.054
		School	0.231	0.0001	0.174
		Exwghti	-0.041	0.940	0.001
		Plasma1	3.5×10^{-5}	0.719	0.002
		Ethanol	8.6×10^{-5}	0.023	0.036
		Totnear	0.0001	0.945	0.0003
		Poison2	0.318	0.542	0.0008
		Innum	-2.093	0.004	0.037
Benton	0.283	Age	-0.034	0.029	0.127
		School	0.194	0.0001	0.149
		Exwghti	0.114	0.827	0.001
		Plasma1	7.4×10^{-5}	0.427	0.005
		Ethanol	1.5×10^{-6}	0.967	0.001
		Totnear	-0.006	0.585	0.001
		Poison2	0.248	0.617	0.001
		Innum	-1.580	0.018	0.025
Stalt3t	0.293	Age	-0.176	0.001	0.130
		School	0.374	0.002	0.054
		Exwghti	-0.676	0.730	0.004
		Plasma1	3.3×10^{-4}	0.298	0.004
		Ethanol	1.7×10^{-4}	0.162	0.032
		Totnear	0.011	0.738	0.006
		Poison2	-1.483	0.367	0.003
		Innum	-3.668	0.098	0.020
		Spr1	1.677	0.155	0.015
		Eryth	-0.137	0.111	0.017
		Dagga	2.395	0.009	0.027
		Glue	7.437	0.029	0.022
Stalt3d	0.017	Age	-0.007	0.249	0.003
		School	-0.004	0.764	0.001
		Exwghti	0.125	0.542	0.003
		Plasma1	1.6×10^{-5}	0.663	0.0005
		Ethanol	2.9×10^{-6}	0.837	0.0004
		Totnear	0.006	0.150	0.009
		Poison2	0.068	0.731	0.001

Sta2t4t	0.249	Age	-0.262	0.0001	0.137
		School	0.214	0.127	0.023
		Exwghti	-2.632	0.180	0.002
		Plasma1	6.3×10^{-4}	0.073	0.017
		Ethanol	3.4×10^{-4}	0.017	0.046
		Totnear	0.051	0.208	0.010
		Poison2	-0.793	0.686	0.0008
		Innum	-5.090	0.048	0.017
		Playvid	2.371	0.040	0.021
Sta2t4d	0.082	Age	0.001	0.914	0.005
		School	0.009	0.672	0.002
		Exwghti	-0.080	0.799	0.0003
		Plasma1	1.5×10^{-4}	0.010	0.025
		Ethanol	4.9×10^{-6}	0.087	0.001
		Totnear	0.011	0.090	0.010
		Poison2	0.065	0.821	0.001
		Recalc	0.001	0.004	0.041
		Waissyb	0.303	Age	0.015
School	0.247			0.0001	0.283
Exwghti	0.036			0.925	0.001
Plasma1	6.5×10^{-6}			0.925	0.0003
Ethanol	4.6×10^{-5}			0.086	0.012
Totnear	0.004			0.567	0.0006
Poison2	0.605			0.114	0.012
Aimlt2	0.542	Age	-1.452	0.0001	0.319
		School	5.036	0.0001	0.317
		Exwghti	-7.608	0.294	0.003
		Plasma1	1.6×10^{-3}	0.219	0.008
		Ethanol	3.6×10^{-4}	0.470	0.002
		Totnear	0.048	0.725	0.0002
		Poison2	6.107	0.403	0.003
Sqrtam2	0.326	Age	-0.026	0.029	0.114
		School	0.211	0.0001	0.228
		Exwghti	-0.262	0.491	0.001
		Plasma1	1.1×10^{-4}	0.122	0.012
		Ethanol	1.8×10^{-4}	0.486	0.002
		Totnear	0.001	0.944	0.00005
		Poison2	0.100	0.798	0.0003
Digitc	0.469	Age	-0.030	0.0001	0.171
		School	1.674	0.0001	0.343
		Exwghti	0.522	0.816	0.002
		Plasma1	1.5×10^{-4}	0.722	0.001
		Ethanol	2.9×10^{-4}	0.072	0.013
		Totnear	0.034	0.449	0.001
		Poison2	3.129	0.167	0.009

Table A7.16 Multiple linear regression analysis of information processing tests amongst deciduous fruit workers using cumulative exposure (EXWGHTI) in the analyses

<u>Outcome</u>	<u>Model r²</u>	<u>Predictor</u>	<u>B-slope</u>	<u>P-value</u>	<u>Partial r²</u>
Lavrt2	0.110	Age	0.002	0.354	0.001
		School	-0.006	0.172	0.012
		Exwghti	0.066	0.315	0.002
		Plasma1	-6.1X10 ⁻⁶	0.597	0.0004
		Ethanol	-6.5X10 ⁻⁶	0.152	0.009
		Totnear	0.001	0.606	0.002
		Poison2	0.015	0.813	0.0003
		Height	-0.007	0.005	0.038
		Prevent	0.006	0.090	0.018
		Totexp	-0.004	0.013	0.032
		Lavmt2	0.107	Age	0.003
School	-0.008			0.094	0.018
Exwghti	0.004			0.954	0.002
Plasma1	-6.6X10 ⁻⁸			0.996	0.0002
Ethanol	5.1X10 ⁻⁶			0.472	0.010
Totnear	-0.002			0.228	0.007
Poison2	0.036			0.573	0.002
Alcwknd	-0.0001			0.447	0.016
Recalc	-0.0001			0.387	0.004
Lavrt4	0.100			Age	0.0004
		School	-0.006	0.126	0.014
		Exwghti	0.040	0.479	0.0003
		Plasma1	3.1X10 ⁻⁶	0.755	0.00002
		Ethanol	-3.3X10 ⁻⁶	0.394	0.005
		Totnear	0.001	0.892	0.003
		Poison2	0.054	0.327	0.005
		Homegif	-0.070	0.038	0.018
		Totcum	-0.061	0.060	0.010
		Protect	-0.062	0.002	0.045
Lavmt4	0.116	Age	0.005	0.016	0.068
		School	-0.003	0.582	0.003
		Exwghti	0.082	0.794	0.0006
		Plasma1	3.4X10 ⁻⁶	0.782	0.001
		Ethanol	2.5X10 ⁻⁶	0.686	0.012
		Totnear	-0.002	0.084	0.015
		Poison2	0.050	0.448	0.003
		Recalc	-0.0002	0.055	0.018

Lavrt6	0.072	Age	0.001	0.639	0.006
		School	-0.008	0.052	0.015
		Exwghti	-0.004	0.944	0.001
		Plasma1	4.4×10^{-6}	0.677	0.0002
		Ethanol	5.3×10^{-6}	0.204	0.009
		Totnear	0.001	0.534	0.002
		Poison2	0.037	0.532	0.002
		Homegif	-0.073	0.042	0.020
		Totcum	-0.069	0.048	0.019
Lavmt6	0.090	Age	0.006	0.003	0.056
		School	-0.006	0.188	0.009
		Exwghti	0.0003	0.997	0.006
		Plasma1	-8.8×10^{-7}	0.940	0.0003
		Ethanol	5.5×10^{-6}	0.224	0.010
		Totnear	-0.002	0.067	0.017
		Poison2	0.006	0.927	0.00004
Lavrt8	0.117	Age	0.0003	0.868	0.003
		School	-0.006	0.209	0.006
		Exwghti	0.029	0.673	0.0002
		Plasma1	1.0×10^{-6}	0.935	0.000001
		Ethanol	4.6×10^{-6}	0.340	0.003
		Totnear	0.001	0.514	0.0005
		Poison2	0.082	0.225	0.007
		Height	-0.007	0.006	0.038
		Homegif	-0.131	0.002	0.046
		Totcum	-0.078	0.051	0.017
Lavmt8	0.124	Age	0.007	0.0004	0.087
		School	-0.002	0.567	0.002
		Exwghti	0.002	0.806	0.0003
		Plasma1	-2.7×10^{-6}	0.806	0.00002
		Ethanol	-8.1×10^{-7}	0.848	0.002
		Totnear	-0.003	0.011	0.034
		Poison2	0.044	0.472	0.003
Lavrt10	0.087	Age	0.002	0.740	0.003
		School	-0.012	0.291	0.014
		Exwghti	-0.139	0.372	0.002
		Plasma1	-1.6×10^{-5}	0.556	0.005
		Ethanol	-1.3×10^{-7}	0.991	0.001
		Totnear	0.001	0.712	0.001
		Poison2	-0.003	0.984	0.00003
		Locc	-0.164	0.025	0.042
		Sitquant	-0.0004	0.075	0.023
Lavmt10	0.098	Age	-0.005	0.408	0.039
		School	0.001	0.917	0.005
		Exwghti	-0.069	0.537	0.0002
		Plasma1	-1.4×10^{-5}	0.452	0.0003
		Ethanol	-6.7×10^{-6}	0.352	0.004
		Totnear	-0.003	0.179	0.011
		Poison2	-0.014	0.887	0.0001
		Decidyrs	0.003	0.422	0.014
		Sqrj10	0.047	0.335	0.015
		Totyrs	0.006	0.113	0.014

Tefsc10	0.149	Age	-1.7X10 ⁻⁷	0.822	0.001
		School	-0.00003	0.178	0.011
		Exwghti	-3.9X10 ⁻⁵	0.873	0.001
		Plasma1	5.3X10 ⁻¹⁰	0.990	0.003
		Ethanol	-3.4X10 ⁻⁸	0.047	0.022
		Acute1	1.3X10 ⁻⁵	0.001	0.090
		Totnear	-8.1X10 ⁻⁶	0.076	0.029
		Poison2	7.2X10 ⁻⁶	0.975	0.00001
Lavrt12	0.074	Age	0.003	0.492	0.006
		School	0.010	0.336	0.006
		Exwghti	-0.168	0.273	0.002
		Plasma1	9.9X10 ⁻⁶	0.703	0.00001
		Ethanol	4.4X10 ⁻⁷	0.967	0.0005
		Totnear	0.0004	0.897	0.001
		Poison2	-0.014	0.921	0.0006
		Fumes	0.180	0.052	0.036
		Grnddur	0.017	0.050	0.025
		Lavmt12	0.109	Age	-0.003
School	0.008			0.297	0.001
Exwghti	-0.084			0.385	0.002
Plasma1	-1.5X10 ⁻⁶			0.929	0.001
Ethanol	5.6X10 ⁻⁶			0.392	0.004
Totnear	-0.002			0.347	0.007
Poison2	0.054			0.546	0.002
Sqrj10	0.105			0.008	0.040
Lpsrt12	0.111	Age	0.006	0.633	0.010
		School	-0.077	0.009	0.040
		Exwghti	-0.035	0.400	0.001
		Plasma1	-5.3X10 ⁻⁵	0.426	0.0004
		Ethanol	-1.4X10 ⁻⁵	0.615	0.001
		Totnear	-0.008	0.289	0.007
		Poison2	-0.167	0.656	0.001
		Eryth Farmsize	-0.040 0.740	0.038 0.042	0.025 0.029
Lavrt15	0.363	Age	0.014	0.0001	0.137
		School	-0.057	0.0001	0.206
		Exwghti	-0.093	0.357	0.009
		Plasma1	2.0X10 ⁻⁵	0.279	0.009
		Ethanol	-2.0X10 ⁻⁵	0.007	0.032
		Totnear	-0.003	0.167	0.007
		Poison2	-0.186	0.079	0.015
Sspin15	0.366	Age	-0.003	0.0002	0.139
		School	0.011	0.0001	0.194
		Exwghti	0.020	0.323	0.010
		Plasma1	-4.8X10 ⁻⁶	0.198	0.008
		Ethanol	4.0X10 ⁻⁶	0.006	0.029
		Totnear	0.0005	0.267	0.004
		Poison2	0.027	0.210	0.008
		Smokee	-0.036	0.033	0.030

Sefin15	0.390	Age	-0.003	0.0001	0.150
		School	0.011	0.0001	0.210
		Exwghti	0.017	0.383	0.009
		Plasma1	-4.6X10 ⁻⁶	0.205	0.008
		Ethanol	4.1X10 ⁻⁶	0.004	0.031
		Totnear	0.0005	0.239	0.005
		Poison2	0.027	0.201	0.008
		Smokee	-0.036	0.027	0.032
Stfa15	0.212	Age	-0.004	0.059	0.042
		School	0.013	0.004	0.061
		Exwghti	-0.139	0.029	0.005
		Plasma1	-1.5X10 ⁻⁵	0.229	0.007
		Ethanol	-0.2X10 ⁻⁶	0.956	0.00001
		Totnear	0.001	0.491	0.004
		Poison2	0.049	0.494	0.003
		Sitquant	-0.0002	0.013	0.029
		Protect	0.063	0.009	0.043
		Nicotine	0.004	0.012	0.041
		Lwgi15	0.067	Age	-0.0002
School	0.001			0.148	0.012
Exwghti	0.020			0.150	0.013
Plasma1	5.5X10 ⁻⁷			0.828	0.0007
Ethanol	3.5X10 ⁻⁷			0.972	0.0001
Totnear	-0.0003			0.350	0.001
Poison2	0.028			0.058	0.018
Totexp	0.001			0.019	0.025
Lvarin15	0.144	Age	-0.012	0.001	0.085
		School	0.014	0.078	0.022
		Exwghti	0.057	0.603	0.003
		Plasma1	-2.5X10 ⁻⁶	0.901	0.001
		Ethanol	4.2X10 ⁻⁶	0.609	0.0002
		Totnear	0.002	0.372	0.003
		Poison2	0.082	0.475	0.003
		Cage	-0.032	0.141	0.014
Totcum	-0.123	0.061	0.019		
Lavrt18	0.300	Age	0.014	0.0001	0.202
		School	-0.023	0.0001	0.073
		Exwghti	-0.038	0.623	0.002
		Plasma1	-1.5X10 ⁻⁵	0.284	0.004
		Ethanol	-1.7X10 ⁻⁵	0.002	0.047
		Totnear	-0.0006	0.694	0.001
		Poison2	-0.022	0.791	0.0003
Lavrt21	0.198	Age	0.011	0.0001	0.122
		School	-0.015	0.003	0.039
		Exwghti	0.008	0.910	0.0002
		Plasma1	-4.3X10 ⁻⁶	0.745	0.00001
		Ethanol	1.4X10 ⁻⁵	0.007	0.039
		Totnear	-0.002	0.147	0.010
Poison2	0.007	0.925	0.00004		

Dift121	0.178	Age	-7.460	0.031	0.065
		School	7.617	0.383	0.008
		Exwghti	266.781	0.022	0.010
		Plasma1	0.044	0.032	0.008
		Ethanol	0.006	0.476	0.071
		Totnear	-2.327	0.306	0.004
		Poison2	-119.658	0.269	0.006
Lavrt24	0.379	Age	0.015	0.0001	0.277
		School	-0.030	0.0001	0.100
		Exwghti	-0.009	0.927	0.002
		Plasma1	-1.2X10 ⁻⁵	0.517	0.002
		Ethanol	-6.6X10 ⁻⁶	0.349	0.005
		Totnear	-0.0005	0.810	0.0005
		Poison2	0.018	0.874	0.0002
		Acutel	0.004	0.022	0.037
Sntrn24	0.264	Age	0.019	0.101	0.174
		School	-0.059	0.012	0.047
		Exwghti	0.022	0.948	0.004
		Plasma1	-5.4X10 ⁻⁶	0.927	0.0001
		Ethanol	-8.5X10 ⁻⁶	0.697	0.001
		Totnear	0.004	0.481	0.002
		Poison2	0.029	0.933	0.0001
		Totyears	0.017	0.089	0.016
Lavrt30	0.097	Age	0.005	0.028	0.026
		School	0.005	0.323	0.002
		Exwghti	0.051	0.506	0.001
		Plasma1	4.2X10 ⁻⁶	0.763	0.0001
		Ethanol	-8.7X10 ⁻⁶	0.126	0.011
		Totnear	-0.002	0.304	0.008
		Poison2	0.060	0.474	0.003
		Fumes Smokee	0.099 0.100	0.044 0.104	0.031 0.018
Lavrt33	0.306	Age	0.011	0.0001	0.128
		School	-0.027	0.0001	0.084
		Exwghti	-0.066	0.449	0.008
		Plasma1	1.9X10 ⁻⁵	0.259	0.001
		Ethanol	-1.5X10 ⁻⁵	0.020	0.028
		Totnear	-0.001	0.772	0.0004
		Poison2	-0.030	0.755	0.001
		Blunt GGT1	0.071 -0.004	0.094 0.0005	0.022 0.076
Tpsrc33	0.215	Age	0.014	0.049	0.004
		School	-0.031	0.041	0.031
		Exwghti	0.147	0.466	0.0003
		Plasma1	-1.7X10 ⁻⁵	0.658	0.0002
		Ethanol	-3.6X10 ⁻⁵	0.018	0.026
		Totnear	-0.003	0.428	0.004
		Poison2	-0.443	0.123	0.021
		Abnquan	0.001	0.219	0.041
		Normquan	0.002	0.167	0.021
		Sitquant	0.001	0.180	0.014
		Locc Nicotine	0.257 0.007	0.011 0.117	0.053 0.022

Lavrt36	0.269	Age	0.010	0.008	0.066
		School	-0.035	0.0001	0.123
		Exwghti	0.058	0.591	0.001
		Plasma1	-1.0X10 ⁻⁵	0.625	0.001
		Ethanol	-2.5X10 ⁻⁵	0.003	0.087
		Totnear	0.003	0.170	0.021
		Poison2	-0.042	0.698	0.002
Tpsrc36	0.191	Age	0.026	0.033	0.101
		School	-0.043	0.120	0.023
		Exwghti	0.552	0.115	0.034
		Plasma1	3.3X10 ⁻⁵	0.615	0.001
		Ethanol	-6.8X10 ⁻⁶	0.795	0.001
		Totnear	0.016	0.044	0.043
		Poison2	-0.109	0.755	0.001
Tefsc36	0.282	Age	0.008	0.017	0.121
		School	-0.027	0.001	0.094
		Exwghti	0.112	0.251	0.016
		Plasma1	-1.5X10 ⁻⁵	0.439	0.002
		Ethanol	-7.6X10 ⁻⁶	0.296	0.009
		Totnear	0.005	0.020	0.061
		Poison2	-0.114	0.248	0.014
Lavrt39	0.123	Age	0.011	0.230	0.050
		School	0.011	0.677	0.008
		Exwghti	0.390	0.206	0.051
		Plasma1	-6.5X10 ⁻⁶	0.901	0.001
		Ethanol	-1.5X10 ⁻⁵	0.539	0.014
		Totnear	-0.002	0.813	0.002
		Poison2	-0.106	0.793	0.003
Tpsrc39	0.162	Age	-0.010	0.690	0.005
		School	0.009	0.897	0.0002
		Exwghti	0.407	0.621	0.031
		Plasma1	-1.8X10 ⁻⁴	0.209	0.079
		Ethanol	4.2X10 ⁻⁵	0.530	0.023
		Totnear	-0.014	0.448	0.019
		Poison2	-0.650	0.554	0.015
Lavrt42	0.113	Age	-0.001	0.776	0.018
		School	-0.027	0.001	0.066
		Exwghti	0.005	0.965	0.001
		Plasma1	-2.1X10 ⁻⁵	0.323	0.002
		Ethanol	-1.3X10 ⁻⁵	0.116	0.011
		Totnear	-0.002	0.513	0.002
		Poison2	0.021	0.862	0.0001
		Totyyears	0.007	0.058	0.016
Lavrt45	0.155	Age	0.006	0.058	0.042
		School	-0.025	0.001	0.072
		Exwghti	-0.001	0.990	0.000001
		Plasma1	-3.5X10 ⁻⁵	0.054	0.014
		Ethanol	-1.1X10 ⁻⁵	0.133	0.015
		Totnear	-0.001	0.594	0.001
		Poison2	-0.051	0.653	0.001
		Playvid	-0.118	0.055	0.018

Dift145	0.096	Age	2.719	0.175	0.009
		School	-4.903	0.299	0.001
		Exwghti	-56.539	0.402	0.002
		Plasma1	-0.020	0.098	0.012
		Ethanol	0.002	0.629	0.002
		Totnear	-1.344	0.315	0.003
		Poison2	-93.820	0.147	0.010
		Lifetot	-52.107	0.0002	0.061
ACT	0.301	Age	-0.063	0.146	0.119
		School	0.382	0.0002	0.130
		Exwghti	1.564	0.283	0.005
		Plasma1	0.0002	0.283	0.005
		Ethanol	-8.8X10 ⁻⁵	0.375	0.000001
		Totnear	-0.0004	0.990	0.0003
		Poison2	0.514	0.718	0.001
		Innum	-5.241	0.003	0.050
		Domi	3.034	0.021	0.030
		Echo	0.092	Age	-0.016
School	0.110			0.0008	0.051
Exwghti	-0.463			0.383	0.004
Plasma1	0.0001			0.142	0.009
Ethanol	3.5X10 ⁻⁵			0.287	0.006
Totnear	0.010			0.289	0.006
Poison2	-0.077			0.871	0.0001

APPENDIX 7.3

Multiple logistic regression modelling of clinical neurological outcomes using cumulative lifetime, and average lifetime intensity exposure to OPs amongst deciduous fruit farm workers - Ceres 1993.

Table A7.17 Multiple logistic regression modelling of clinical neurological deficit amongst deciduous fruit farm workers

<u>Outcome</u>	<u>Predictor</u>	<u>Parameter Estimate</u>	<u>Standard Error</u>	<u>P-value</u>	<u>Odds Ratio</u>
Clinical deficit	Age	0.014	0.054	0.800	1.014
	School	-0.057	0.141	0.687	0.945
	Exwght	0.004	0.046	0.938	1.004
	Plasma1	-0.0002	0.0004	0.669	1.000
	Ethanol	5.4×10^{-5}	1.1×10^{-4}	0.642	1.000
	Poison2	1.072	1.268	0.398	2.921
	Totnear	-0.047	0.054	0.381	0.954

APPENDIX 7.4

Multiple linear regression modelling of neurological and neurobehavioural outcomes using cumulative lifetime, and average lifetime intensity exposure to BEs OPs amongst deciduous fruit farm workers - Ceres 1993.

Table A.7.18 Multiple linear regression analysis of selected neurological and neurobehavioural tests amongst deciduous fruit workers using cumulative exposure (EXWGHTB) in the analyses

<u>Outcome</u>	<u>Model r²</u>	<u>Predictor</u>	<u>B-slope</u>	<u>P-value</u>	<u>Partial r²</u>
Logvib	0.263	Age	0.020	0.0001	0.205
		School	-0.015	0.110	0.010
		Exwghtb	-0.00002	0.881	0.0005
		Plasma1	3.7X10 ⁻⁵	0.177	0.001
		Ethanol	2.6X10 ⁻⁶	0.781	0.00005
		Totnear	0.005	0.069	0.013
		Poison2	0.057	0.676	0.0003
		Height	0.015	0.008	0.034
		Alb1	-0.023	0.043	0.017
TFK	0.176	Age	-0.097	0.0002	0.086
		School	0.085	0.155	0.012
		Exwghtb	0.001	0.095	0.005
		Plasma1	-1.2X10 ⁻⁴	0.448	0.0001
		Ethanol	1.5X10 ⁻⁵	0.797	0.002
		Totnear	-0.019	0.268	0.003
		Poison2	-1.305	0.122	0.009
		Height	-0.087	0.012	0.028
		GGT1	0.034	0.002	0.042
Tremintd	0.198	Age	0.006	0.290	0.044
		School	-0.014	0.259	0.014
		Exwghtb	-0.027	0.776	0.002
		Plasma1	-3.3X10 ⁻⁵	0.320	0.0002
		Ethanol	9.4X10 ⁻⁶	0.463	0.002
		Totnear	0.003	0.417	0.005
		Poison2	0.254	0.198	0.002
		Height	0.023	0.002	0.062
		Event	-0.051	0.181	0.011
		Smokee	0.539	0.001	0.040
		Tendayop	0.244	0.014	0.035
		Tremintn	0.065	Age	0.002
School	-0.035			0.020	0.027
Exwghtb	0.0001			0.752	0.003
Plasma1	1.1X10 ⁻⁵			0.785	0.0002
Ethanol	5.9X10 ⁻⁶			0.680	0.002
Totnear	0.003			0.552	0.002
Poison2	0.023			0.917	0.0002
Acute	0.002			0.178	0.010

Aimlt2	0.546	Age	-1.331	0.0001	0.317
		School	5.020	0.0001	0.316
		Exwghtb	-0.013	0.048	0.014
		Plasma1	-0.002	0.235	0.007
		Ethanol	0.0003	0.570	0.001
		Totnear	0.077	0.589	0.001
		Poison2	7.715	0.291	0.005
Stalt3t	0.292	Age	-0.168	0.002	0.128
		School	0.370	0.002	0.054
		Exwghtb	-0.001	0.618	0.001
		Plasma1	-0.0003	0.336	0.003
		Ethanol	0.0002	0.186	0.032
		Totnear	0.014	0.676	0.007
		Poison2	-1.403	0.396	0.003
		Innum	-3.695	0.100	0.019
		Spr1	1.754	0.116	0.017
		Eryth	-0.143	0.097	0.018
		Glue	7.504	0.028	0.022
		Dagga	2.452	0.007	0.029

Table A.7.19 Multiple linear regression analysis of selected neurological and neurobehavioural tests amongst deciduous fruit workers using intensity of exposure (EXWGHTB) in the analyses

<u>Outcome</u>	<u>Model r²</u>	<u>Predictor</u>	<u>B-slope</u>	<u>P-value</u>	<u>Partial r²</u>
Logvib	0.262	Age	0.020	0.0001	0.205
		School	-0.015	0.111	0.010
		Exwghtbi	-0.005	0.860	0.0002
		Plasma1	3.7X10 ⁻⁵	0.178	0.001
		Ethanol	2.7X10 ⁻⁶	0.774	0.00004
		Totnear	0.005	0.068	0.013
		Poison2	0.057	0.676	0.0003
		Height	0.015	0.008	0.034
		Alb1	-0.023	0.044	0.017
		TFK	0.174	Age	-0.085
School	0.088			0.143	0.012
Exwghtbi	0.254			0.189	0.006
Plasma1	-1.3X10 ⁻⁴			0.449	0.0001
Ethanol	1.0X10 ⁻⁵			0.858	0.002
Totnear	-0.018			0.284	0.004
Poison2	-1.257			0.137	0.009
Height	-0.087			0.013	0.028
GGT1	0.033			0.002	0.039
Tremintd	0.198			Age	0.006
		School	-0.015	0.245	0.014
		Exwghtbi	0.009	0.823	0.003
		Plasma1	-3.3X10 ⁻⁵	0.314	0.0001
		Ethanol	9.0X10 ⁻⁶	0.478	0.002
		Totnear	0.003	0.372	0.006
		Poison2	0.242	0.217	0.002
		Event	-0.051	0.180	0.011
		Height	0.023	0.023	0.061
		Smokee	0.580	0.001	0.041
		Tendayop	0.236	0.018	0.032
		Tremintn	0.098	Age	-0.0005
School	-0.012			0.532	0.027
Exwghtbi	0.046			0.343	0.013
Plasma1	1.6X10 ⁻⁵			0.682	0.0003
Ethanol	5.1X10 ⁻⁶			0.719	0.001
Totnear	0.001			0.754	0.001
Poison2	0.063			0.771	0.0001
Acute	0.001			0.234	0.009
Aimlt2	0.520			Age	-1.468
		School	5.046	0.0001	0.316
		Exwghtbi	-1.641	0.296	0.003
		Plasma1	-1.4X10 ⁻³	0.295	0.007
		Ethanol	5.7X10 ⁻⁴	0.315	0.004
		Totnear	0.058	0.692	0.0004
		Poison2	6.115	0.405	0.003

Stalt3t	0.294	Age	-0.178	0.001	0.130
		School	0.375	0.002	0.055
		Exwghtbi	-0.284	0.509	0.003
		Plasma1	-3.4X10 ⁻⁴	0.277	0.004
		Ethanol	1.7X10 ⁻⁴	0.157	0.032
		Totnear	0.013	0.709	0.005
		Poison2	-1.448	0.378	0.003
		Innum	-3.784	0.089	0.020
		Spr1	1.860	0.119	0.017
		Eryth	-0.140	0.102	0.017
		Dagga	2.371	0.009	0.027
		Glue	7.415	0.029	0.022

APPENDIX 7.5

Multiple linear regression modelling of neurological and neurobehavioural outcomes using cumulative mistblower days exposure to OPs amongst deciduous fruit farm workers - Ceres 1993.

Table A7.20 Multiple linear regression analysis for selected neurological and neurobehavioural tests amongst deciduous fruit farm workers using cumulative mistblower exposure (CUMULTR) in the analyses

<u>Outcome</u>	<u>Model r²</u>	<u>Predictor</u>	<u>B-slope</u>	<u>P-value</u>	<u>Partial r²</u>
Logvib	0.263	Age	0.020	0.0001	0.205
		School	-0.015	0.116	0.010
		Cumultr	-0.00002	0.774	0.0001
		Plasma1	3.8X10 ⁻⁵	0.178	0.001
		Ethanol	2.6X10 ⁻⁶	0.782	0.00005
		Totnear	0.005	0.065	0.013
		Poison2	0.061	0.655	0.0004
		Height	0.015	0.007	0.034
		Alb1	-0.023	0.044	0.017
TFK	0.173	Age	-0.094	0.0003	0.086
		School	0.085	0.160	0.012
		Cumultr	0.001	0.181	0.002
		Plasma1	-1.3X10 ⁻⁴	0.417	0.00004
		Ethanol	1.5X10 ⁻⁵	0.795	0.002
		Totnear	-0.016	0.336	0.003
		Poison2	-1.360	0.111	0.010
		Height	-0.087	0.013	0.028
		GGT1	0.034	0.002	0.042
Tremintd	0.197	Age	0.007	0.189	0.050
		School	-0.013	0.270	0.011
		Cumultr	0.00002	0.823	0.006
		Plasma1	2.9X10 ⁻⁵	0.374	0.00002
		Ethanol	8.8X10 ⁻⁶	0.463	0.002
		Totnear	-0.004	0.304	0.006
		Poison2	0.225	0.248	0.001
		Event	-0.051	0.160	0.012
		Height	0.023	0.002	0.059
		Smokee	0.573	0.001	0.038
		Tendayop	0.236	0.018	0.029
		Tremintn	0.104	Age	0.003
School	-0.013			0.483	0.025
Cumultr	0.00005			0.622	0.006
Plasma1	9.8X10 ⁻⁸			0.998	0.0001
Ethanol	5.0X10 ⁻⁶			0.713	0.002
Totnear	0.001			0.840	0.001
Poison2	-0.010			0.965	0.0002
Acute	0.002			0.127	0.013

Aim1t2	0.552	Age	-1.306	0.0001	0.330
		School	4.959	0.0001	0.305
		Cumultr	-0.009	0.010	0.025
		Plasma1	-0.002	0.211	0.008
		Ethanol	0.0002	0.694	0.001
		Totnear	0.038	0.791	0.00005
		Poison2	8.988	0.220	0.007
Stalt3t	0.278	Age	-0.177	0.001	0.149
		School	0.379	0.002	0.048
		Cumultr	-0.001	0.454	0.0002
		Plasma1	-0.0003	0.300	0.003
		Ethanol	0.0001	0.228	0.019
		Totnear	-0.017	0.610	0.0005
		Poison2	-1.338	0.440	0.003
		Innum	-3.552	0.118	0.018
		Spr1	2.333	0.047	0.023
		Eryth	-0.138	0.120	0.013
		Dagga	1.816	0.045	0.015
		Glue	7.240	0.043	0.018

APPENDIX 7.6

Multiple linear regression modelling of neurological and neurobehavioural outcomes using cumulative lifetime exposure prior to 1983 for Kgs OPs amongst deciduous fruit farm workers - Ceres 1993.

Table A7.21 Multiple linear regression analysis for selected neurological and neurobehavioural tests amongst deciduous fruit farm workers using cumulative Kg OP exposure prior to 1983 in the analyses

<u>Outcome</u>	<u>Model r²</u>	<u>Predictor</u>	<u>B-slope</u>	<u>P-value</u>	<u>Partial r²</u>
Logvib	0.156	Age	0.019	0.013	0.104
		School	-0.020	0.203	0.017
		Prev	-0.002	0.766	0.0005
		Plasma1	8.7X10 ⁻⁶	0.850	0.002
		Ethanol	5.4X10 ⁻⁷	0.967	0.0003
		Totnear	0.008	0.073	0.028
		Poison2	0.203	0.324	0.010
TFK	0.163	Age	-0.113	0.014	0.104
		School	0.150	0.117	0.035
		Prev	0.033	0.346	0.005
		Plasma1	-1.6X10 ⁻⁴	0.573	0.005
		Ethanol	1.9X10 ⁻⁵	0.807	0.001
		Totnear	-0.009	0.727	0.0002
		Poison2	-1.667	0.176	0.019
Tremintd	0.179	Age	0.018	0.035	0.097
		School	-0.020	0.266	0.015
		Prev	-0.003	0.610	0.003
		Plasma1	7.2X10 ⁻⁵	0.162	0.018
		Ethanol	8.3X10 ⁻⁶	0.567	0.001
		Totnear	-0.003	0.423	0.010
		Poison2	0.512	0.036	0.045
Digitc	0.551	Age	-0.226	0.070	0.137
		School	1.646	0.0001	0.422
		Prev	-0.044	0.597	0.015
		Plasma1	3.5X10 ⁻⁴	0.583	0.001
		Ethanol	3.5X10 ⁻⁴	0.063	0.032
		Totnear	0.002	0.969	0.0005
		Poison2	3.141	0.341	0.011

Aim1t2	0.621	Age	-1.174	0.0009	0.274
		School	5.036	0.0001	0.372
		Prev	-0.919	0.0004	0.109
		Plasma1	-0.002	0.281	0.017
		Ethanol	8.3×10^{-4}	0.150	0.019
		Totnear	0.298	0.110	0.029
		Poison2	3.856	0.700	0.002
Stalt3t	0.315	Age	-0.199	0.053	0.149
		School	0.598	0.003	0.126
		Prev	-0.006	0.927	0.005
		Plasma1	-3.6×10^{-4}	0.508	0.006
		Ethanol	3.1×10^{-4}	0.042	0.043
		Totnear	0.017	0.127	0.002
		Poison2	-1.320	0.748	0.003

APPENDIX 7.7

Multiple linear regression modelling of neurological and neurobehavioural outcomes using including past occupation as a sprayman as an explanatory variable in a model with cumulative lifetime Kgs OPs exposure amongst deciduous fruit farm workers - Ceres 1993.

Table A7.22 Multiple linear regression analysis for selected neurological and neurobehavioural tests amongst deciduous fruit farm workers using previous status as a sprayer versus current sprayer (PAST1) in the analyses

<u>Outcome</u>	<u>Model r²</u>	<u>Predictor</u>	<u>B-slope</u>	<u>P-value</u>	<u>Partial r²</u>
Logvib	0.278	Age	0.027	0.0001	0.225
		School	-0.014	0.244	0.012
		Exwght	-0.003	0.520	0.00002
		Past1	0.072	0.667	0.001
		Plasma1	3.4X10 ⁻⁶	0.912	0.001
		Ethanol	1.0X10 ⁻⁵	0.319	0.008
		Totnear	0.003	0.068	0.284
		Poison2	0.038	0.806	0.0002
		Height	0.015	0.021	0.034
		Alb1	-0.013	0.380	0.005
TFK	0.185	Age	-0.108	0.004	0.082
		School	0.044	0.585	0.007
		Exwght	0.040	0.184	0.002
		Past1	0.058	0.958	0.00001
		Plasma1	-5.2X10 ⁻⁵	0.803	0.002
		Ethanol	1.4X10 ⁻⁷	0.998	0.001
		Totnear	-0.019	0.354	0.002
		Poison2	-1.968	0.056	0.028
		Height	-0.093	0.036	0.023
		GGT1	0.037	0.004	0.051
Tremintd	0.236	Age	0.013	0.123	0.054
		School	-0.011	0.530	0.010
		Exwght	-0.004	0.516	0.002
		Past1	0.583	0.012	0.061
		Plasma1	-1.9X10 ⁻⁵	0.634	0.00001
		Ethanol	-1.3X10 ⁻⁵	0.356	0.002
		Totnear	-0.004	0.339	0.003
		Poison2	0.276	0.220	0.006
		Event	-0.065	0.181	0.016
		Height	0.023	0.021	0.055
		Smokee	0.476	0.020	0.030
		Tendayop	0.206	0.095	0.024

Tremintn	0.140	Age	-0.006	0.432	0.030
		School	-0.017	0.408	0.043
		Exwght	0.001	0.829	0.003
		Past1	-0.012	0.972	0.000004
		Plasma1	2.7×10^{-5}	0.507	0.001
		Ethanol	1.3×10^{-5}	0.345	0.007
		Totnear	0.0003	0.953	0.001
		Poison2	0.092	0.672	0.0001
		Acute	0.002	0.123	0.016
Aim1t2	0.644	Age	-1.767	0.0001	0.464
		School	4.771	0.0001	0.296
		Exwght	-0.260	0.230	0.009
		Past1	-16.672	0.039	0.030
		Plasma1	-7.6×10^{-4}	0.593	0.002
		Ethanol	4.3×10^{-4}	0.397	0.003
		Totnear	0.039	0.792	0.002
		Poison2	9.548	0.196	0.011
		Stalt3t	0.399	Age	-0.120
School	0.387			0.005	0.042
Exwght	-0.057			0.296	0.0001
Past1	-2.449			0.214	0.013
Plasma1	-4.4×10^{-4}			0.211	0.007
Ethanol	8.7×10^{-4}			0.486	0.039
Totnear	-0.012			0.740	0.0004
Poison2	-1.125			0.518	0.006
Innum	-15.237			0.0004	0.078
Spr1	-0.480			0.747	0.0002
Eryth	-0.232			0.033	0.038
Dagga	2.263			0.009	0.027
Glue	7.662			0.014	0.041