

## Health Surveillance Process for users of Organophosphate Pesticides

### Health Surveillance

Staff will be examined by the appointed medical practitioner in circumstances where:

- excessive exposure to OPs are suspected:
- workers are concerned
- symptoms suggestive of organophosphate poisoning are present

Additionally, testing of several workers during the period of use of organophosphate pesticides is desirable.

The medical-examination and will include an:

- Occupational history (as per Guidelines for Health Surveillance)
- Medical history, including the presence of any symptoms suggestive of exposure to OPs.
  - Staff will be examined by a medical practitioner when:
    - Excessive exposure to OPs is suspected
    - Workers are concerned
    - Symptoms suggestive of poisoning with OPs are present.
- Physical examination will be performed if it is indicated by the occupational and or medical history. Evidence of dermatitis on the hands and forearms may indicate advice is required on work practices.
- A Baseline sample of blood (preferably 2 samples) (of red cell and plasma cholinesterase activity levels by the Ellman method) should be taken before any exposure to OPs. (At least one and ideally 2) pre- exposure test should be performed at least three days apart and the Baseline obtained by averaging these tests. The results of these tests should be within 10% to be regarded as reliable.
  - At the same time blood should also be taken for a basic haematological screen and liver and kidney function tests.
- Staff who have skin, liver diseases, neurological disorders, significant cardiovascular or respiratory conditions should be carefully considered in occupations with exposure to OPs. Staff with serious liver damage or acquired low cholinesterase level should avoid exposure.
- If the worker has had previous exposure, then it is desirable that a period of four weeks of no exposure should occur before the Baseline level is established.
- Ongoing testing - Estimated action of red cell and plasma activity by the Ellman method. This estimation should be done in the latter half of a working day and organophosphate pesticides have used. If a 20% depression of cholinesterase activity is seen, workers should be re-tested.

## **During exposure to organophosphate pesticides**

Testing during a single pesticide season may be limited to cholinesterase testing of employees during maximum pesticide use periods. Cholinesterase testing, other than to establish a baseline, will not be done during periods of non-use because the effects of exposure are transient and no useful information will be gained by such sampling.

## **Removal from exposure to OPs**

If there is a fall in cholinesterase activity by 30% or more, then staff should be removed from further exposure to the organophosphate pesticides until such time as the level returns to baseline levels. The person can be moved to another area and can use other types of pesticides (except pyrethroids, for example, **permethrin** or carbamates).

The supervisor should be informed when abnormal findings have been detected so that control measures can be checked. The employee should be informed of the results of the health surveillance.

## **Personal protective equipment**

The availability, type, fit and maintenance and frequency of use of personal protective equipment should be monitored regularly.

## **Termination of employment**

If the staff member is using organophosphate pesticides, the reason for termination and record of any relevant symptoms should be included in the medical surveillance regime.

## **Reference:**

Guidelines for Health Surveillance: Organophosphate Pesticides, NOHSC: 7039(1998), Canberra.

Workplace Health and Safety Regulation 1997, GoPrint Brisbane

*Revised by OH&S Unit September, 2009*