



NSW DEPARTMENT OF
PRIMARY INDUSTRIES

Emergencies & Animal Welfare
Locked Bag 21, Orange NSW 2800
Tel: (02) 6391 3680 Fax: (02) 6391 3740
Email: emergency.preparedness@industry.nsw.gov.au

Procedure – Ground Control of Plague Locusts

Authorised by	Director, Emergencies and Animal Welfare	Authorisation date	24/08/09
Authorisation period		Effective date	2/1/2009
Prepared by	David Croft, Agricultural Protection Officer		
Contact Officer	Agricultural Protection Officer, Head Office		

REVISION HISTORY

Version	Date	Amendments	
		Section	Details
1	12 Nov 08		For approval
2	18 Aug 09	All 4 5.2 5.4	Update NSW DPI to I&I NSW Inclusion of SWMS, risk assessments New section to clarify procedure Changed spray technique – distance ahead

1. Application / Scope

This procedure is issued with the concurrence of the Director-General of Industry & Investment NSW (I&I NSW) under Clause 6.2 of the Memorandum of Understanding between the Director-General of I&I NSW and State Management Council of the Livestock Health and Pest Authorities.

- Control of plague locusts using insecticides is the responsibility of the landholder according to the [Rural Lands Protection Act 1998](#)
- Ground control of plague locusts can be conducted by Livestock Health and Pest Authority (LHPA) and I&I NSW personnel according to the Activation of Ground Control for Plague Locusts policy.
- Landholders, contractors and LHPA/I&I NSW personnel are responsible for ensuring ground control of plague locusts is conducted according to the relevant legislation and regulations to ensure safety for non-target areas, people and the environment. Refer to the procedure Engagement of Contractors for Ground Control of Plague Locusts.

2. Abbreviations / Definitions

- APLC – Australian Plague Locust Commission
- APO/PDO – Agricultural Protection Officer/Program Development Officer
- DECC – Department of Environment and Climate Change
- EC – Emulsifiable concentrate
- EOC – Emergency Operation Centre
- GPS – Global Positioning System
- LHPA – Livestock Health and Pest Authority (formerly Rural Lands Protection Boards)
- MSDS - Material Safety Data Sheet – required for each insecticide
- I&I NSW – Industry & Investment NSW (formerly NSW Department of Primary Industries)
- PPE – Personnel Protective Equipment
- SC – Suspension concentrate
- SWMS – Safe methods Work Statements
- ULV – Ultra low volume

3. Resources / Equipment

- Communication equipment eg mobile phone
- First aid kit
- GPS (for accurate location of locust control)
- Kestrel (for recording wind speed, temperature etc)
- Magnifying glass
- Mister on a suitable vehicle
- PPE (according to Material Safety Data Sheet)
- Record forms
- Relevant and approved insecticides and associated MSDS, label and permit
- Sprayer suitable for the control site

4. Warnings

- Risks associated with the use of insecticides and associated impact on the environment and personnel have been identified in the following risk assessments and procedures:
 - Risk assessments:
 - [Environmental impact of insecticide application for locusts control](#)
 - [Use of spray units to deliver insecticide for the control of plague locusts](#)
 - [Insecticide application for locust control](#)
 - Procedure – Environmental Considerations in a Locust Control Response
- Safe Working Method Statements (SWMS) have been developed to identify, assess and control risks associated with ground control.

- [Driving vehicles](#)
 - [Property visits](#)
 - [Manual handling – stores](#)
- LHPA personnel, contractors and landholders responsible for spray operations should ensure that tasks are conducted according to their current safe work method statements
 - First Aid kits – must be available and suitable for the area and number of people on site

ALWAYS READ AND COMPLY WITH LABEL DIRECTIONS.

5. Procedure

5.1 Notification

- Landholders, including public land managers, must notify their local LHPA when locusts (nymphs or adults) are present on their property
- LHPAs must notify all registered apiarists in the area where insecticides may be used. A general public notification may also inform landholders who have unregistered hives.
- All lands that may be subject to environmental constraints, threatened or endangered species, biological control agents or organic farms should be identified, noted, mapped and available as a resource for I&I NSW, Australian Plague Locust Commission (APLC) and LHPAs.

5.2 Equipment and insecticide selection

- Insecticide labels may indicate the type of equipment that should be used. Only equipment listed on the insecticide label or permit can be used to apply the insecticide.
- Ground application of EC/SC insecticide may be applied to nymphs and roosting adults.
- The use of Ultra Low Volume (ULV) insecticide supplied by I&I NSW for control of nymphs and to roosting adults is permitted provided it is applied using equipment listed on the label and only after consultation with the APO/PDO.

5.3 Calibration of equipment

- All equipment must be calibrated prior to application of insecticide to deliver the recommended amount of insecticide in mL/ha.
- There are various methods of calibrating spray equipment. The SMARTtrain Boom spray Calibration is one of the methods available to calibrate boom sprays. Calibration of other types of insecticide applicators should be in accordance with manufacturer's directions.
- Calibrate equipment and record calibration each time it is used.
- I&I NSW can provide a video to assist in the training of landholders and LHPA personnel in the calibration of spray equipment.

5.4 Ground control procedure

- Insecticide for control of plague locusts must be issued and used according to the procedure Insecticide management for plague locusts.
- LHPAs should obtain occupier approval to enter land to control locusts. Approval can be obtained up to three months prior.

- Entering and spraying land without occupier's permission should only occur in exceptional circumstances with approval of the State Controller.
- Withholding periods and grazing intervals for insecticide application apply for livestock, crop and pasture and are specified on the product label and permit. Always check the label and permit for current withholding periods and to ensure that the insecticide is registered or permitted for application on pastures or specific crops. For further information on withholding periods and residue management see the brochure '[Australian Plague Locust, Landholder Control Strategies for NSW](#)' and the revised SAFEMEAT brochure '[Plague locusts, wingless grasshoppers and livestock residues](#)' and its supplement.
- The application rate — the amount of product required per hectare — is specified on the label of the insecticide container or the permit as millilitres of insecticide per hectare (mL/ha). It is a legal requirement under the [Pesticides Act 1999](#) for the user of the insecticide to ensure that they use the application rate as indicated on the label or permit for the insecticide. **Note** : The mL/ha is not the same for all insecticides.
- Buffer zones, where no spray is to be applied, may be required between the site of application and sensitive areas. Buffer zones may be specified on the product label or permit and these must be complied with. Sensitive areas include (but are not limited to) natural streams, rivers, waterways, farm dams, human dwellings, school bus runs and neighbouring properties. The proximity of application to livestock, crop and pasture that cannot be withheld as per the label or permit must also be considered.
- Locusts should be sprayed in a series of runs orientated at right angles to the wind and beginning at the downwind edge of the target. The spraying technique should ensure that the vegetation in which the locusts are located and also the vegetation into which the locusts are moving (approximately 1 boom width or approximately 20 m ahead) receive an adequate application of insecticide. A lethal dose is accumulated by the locusts through direct contact with the spray mixture and through ingestion and contact with sprayed foliage. Spraying should not be undertaken if rain is imminent (approximately within 6 hours before or after). Always check the label or permit requirements.
- Insecticide sprayed locusts may take 24 to 72 hours to die. A quick kill (that is, locusts dying within six hours) may indicate overdosing, and the spray equipment should be examined and recalibrated.
- Metarhizium (Green Guard ®) will take up to 2 weeks to kill locusts depending on temperature, as it is a fungal biocontrol agent and so is generally only used on nymphs and not adults.
- If significant numbers of locusts are present 72 hours after spraying, the insecticide label or permit should be consulted to determine the minimum period before any respraying should be undertaken. The equipment should also be checked and recalibrated.
- Locust spray records must be maintained for insecticide applications. The Australian Plague Locust Spray Record form or a suitable alternative can be used.

5.5 Control of nymphs

- Refer to procedure in Section 5.4 of this procedure
- Timing of control of nymphs - should occur from the second to fourth instar when banding is at its peak. If control is undertaken while nymphs are still hatching, re-infestation will quickly occur. If control is not undertaken until nymphs are fifth instar or fledgling, they may disperse over a wide area and might not be viable to spray.

5.6 Control of roosting adults

- Refer to procedure in Section 5.4 of this procedure
- LHPA rangers may determine a need to spray roosting adults. Spraying for roosting adults would normally be undertaken in the late evening or early morning.
- Consideration should be given to the height of the spray equipment depending on the vegetation and locust activity

6. References

Policies

- [Activation of Ground Control for Plague Locusts](#)
- A-038 Occupational Health and Safety

Procedures

- [Engagement of contractors for ground control of plague locusts](#)
- [Environmental considerations in a locust control response](#)
- [Insecticide management for plague locusts](#)

Forms

- [Australian Plague Locust Spray Record](#)
- [Calibration of misters and boomless jets](#)
- NSW DPI Contractor Induction Checklist
- [SMARTtrain Boom Spray Calibration Method](#)

Risk Assessments

- [Environmental impact of insecticide application for locusts control](#)
- [Use of spray units to deliver insecticide for the control of plague locusts](#)

Safe Work Method Statements

- [Driving vehicles](#)
- [Property visits](#)
- [Manual handling – stores](#)

[Material Safety Data Sheets \(MSDS\) and labels](#)

Information

- [‘Australian Plague Locust, Landholder Control Strategies for NSW’](#)
- [SAFEMEAT brochure ‘Plague locusts, wingless grasshoppers and livestock residues’ and its supplement.](#)
- [Primefact – Pesticides - reducing damage to honey bees](#)
- [Primefact – Pesticides – a guide to their effects on honey bees](#)

Legislative Acts and Regulations

- [Pesticides Act, 1999](#)
- [Pesticides Regulation, 1995](#)
- [Rural Lands Protection Act, 1998](#)
- [National Parks and Wildlife Act, 1974](#)
- [Threatened Species Conservation Act, 1995](#)
- [Protection of the Environment Operations Act, 1997](#)
- [Occupational Health and Safety Act, 2000](#)

7. Appendices

Nil