NSW DPI

Pesticides and Veterinary Medicines in Organic Farming

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SMARTtrain Chemical Notes 5

Allowed inputs: standards, certification and legislation

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What producers can use in organic production systems is specified by certification bodies and in standards, e.g. *National Standard for Organic and Bio-dynamic Produce*, *NASAA Organic Standard*.

Many so-called 'allowed inputs' in organic farming systems are commodity chemicals, e.g. lime sulphur, potassium permanganate. Commodity chemicals are raw chemicals that have not been formulated into specific products. Under current federal and state legislation, use of these commodity chemicals as pesticides is illegal, as they are not registered products and have not been evaluated by the APVMA (Australian Pesticides and Veterinary Medicines Authority).

Nevertheless, it is possible for organic producers to obtain a minor use permit from the APVMA to legalise their use. Such permits are subject to a fee ($320) and the application has to be supported by information on the use pattern, control of potential environmental risks and human exposure, and a quality-approved supplier. Permit applications for commodity chemicals are more complex than for registered proprietary products. Help should be sought from a regulatory consultant or state department of primary industry/agriculture.

At both the federal and state levels, it is recognised that the current system for regulating pesticides and veterinary medicines does not cater for the needs of organic farmers. Initiatives for change are underway. Changes being examined include exempting low risk organic inputs from regulation and introducing minimal, fast track registration for low risk organic inputs. However, regulatory change is always slow as it is hard to get agreement between different levels of government and between agencies at the same level of government.

Many commodity chemicals are hazardous substances and human exposure has to be controlled under hazardous substances (OHS) legislation.

Other allowed inputs are registered pesticides, e.g. azadirachtin (neem) products. But not all such products sold to and used by organic growers are registered. Some are; some aren't. Organic farmers need to check that individual products are allowed inputs as defined by standards and certifying organisations, and also registered by the APVMA.

In organic systems, allowed pesticides are required to be natural products rather than synthetic chemicals and the formulation must not include inert ingredients that are synthetic chemicals. For example, pure pyrethrins are allowable inputs but pyrethrins in formulations with the common synergist PBO are not. (Pyrethrins are a chrysanthemum extract, whereas PBO is a synthetic chemical.) Similarly, lime sulphur is an allowed input as a commodity chemical but not as a registered pesticide, because such products are not 'pure' lime sulphur. There are a number of registered fungicides with the product name, 'Lime Sulphur'. These products contain the active ingredient calcium polysulphide. They are soluble concentrates of which about a quarter of the formulation is lime sulphur, the rest being inert ingredients like surfactants, i.e. synthetic chemicals.

In sum, organic growers have to comply with:

- organic certification requirements,
- federal Ag/Vet Code (i.e. registration of chemicals by APVMA),

- state pesticide control-of-use legislation, e.g. Pesticides Act, and
- OHS legislation, particularly hazardous substances (human exposure) and Dangerous Goods (transport and storage).

Note: if exporting organic produce, not all registered pesticides and veterinary medicines that are allowed inputs may be acceptable in the export destination. For example, the registered ectoparasiticides Extinosad and Flockmaster are acceptable for application as lice and blowfly treatments on sheep certified as organic in Australia but they are not allowed inputs under the USDA's (United States Department of Agriculture) National Organic Program (NOP). Consequently, meat and wool from such treated sheep would not qualify as organic if exported to the US. So, organic farmers intending to export their produce need to be aware of certification requirements in the export destination.

Just because the use of a chemical is organically certified, it does not make it legal.

Just because a product is organic does not mean it is harmless to people and the environment.

Calibration

Spray equipment should be dedicated to organic products to avoid contamination. Equipment that has been previously used for synthetic pesticides should be well cleaned.

Calibrate to an area rate rather than a dilution rate to know exactly what is being put out.

Labels

Labels of registered products have to be read: this is a requirement of the Pesticides Act.

Table 1 lists common pesticides that are both registered and certified. As certification is specific to different standards and certification bodies, the list needs to be checked against both. (DO NOT assume it is correct for all standards and certifiers.)

Check:

- BFA (Biological Farmers of Australia) endorsement logo on front label panel.
- Poisons Schedule on front label panel.
- Critical Comments in Directions for Use table – most oils (vegetable and mineral) are phytotoxic (cause plant damage) at high temperatures (>30°C).
- WHPs (withholding periods) – while many organic products have nil WHPs, others do not, e.g. mineral oils and rotenone have a 1 day WHP, spinosad 0–28 (depending on the crop).
- Environmental protection statements.
- If exporting, certification requirements in export destination (available from AQIS – Australian Quarantine and Inspection Service – or certifying organisation in export destination).

BFA ORGANIC REGISTERED PRODUCTS

Commodity chemicals

Commodity chemicals like boric acid, lime sulphur, potassium permanganate, and sulphur are hazardous substances. Their containers/packaging should be labelled and an MSDS obtained. They should be stored securely and entered into an inventory. Organic brews made from them should also be securely stored and labelled. If other than the grower has to use them or is exposed to them, a risk assessment will have to be done and recorded, and a SOP (standard operating procedure)/SWMS (safe work method statement) developed.

Livestock

Vet medicines, e.g. drenches, vaccines, antibiotics, are synthetic chemicals and not accepted in organic production systems. Vaccines are allowed, provided certain conditions are met (see NSW DPI Primefact, 'Use of vaccinations and other veterinary treatments in organic livestock farming' on NSW DPI website – www.dpi.nsw.gov.au).

There are, however, a few natural products that can be used for the treatment of external parasites of livestock, e.g. lice and blowfly. These are listed in the Table 2.

Records

Pesticides Act and Regulations:

- application records
- training records

OHS Act and Regulation:

- inventory of hazardous substances and Dangerous Goods
- risk assessments and SOPs /SWMSs
- PPE use and maintenance
- training records

Organic certification:

- all inputs
- all outputs (incl sales)
- wastage
- produce withheld from sale

Spelt crop at Cootamundra. Spelt is an ancient grain (sub-species of wheat), popular as a health food.
(Photo Phil Bowden, NSW DPI).

Spelt seeds (Photo Phil Bowden, NSW DPI).

Table 1: Registered organic plant protection products

ACTIVE INGREDIENT	PRODUCT	COMMENTS
ammonium chloride	Path-X	Sanitiser
amorphous silica	Abrade Abrasive Barrier Insecticide Absorba-cide	IGR, abrades insect cuticle
azadirachtin (Neem extract)	Azamax	IGR, relatively non-toxic, good IPM fit
botanical oil	EcoOil Synetrol Horti Oil	For use in fruit and vegetable crops
Bt	Dipel	Wide use pattern
canola oil	Nexus Spray Adjuvant	Claims to be a wetter, sticker, spreader; more likely a penetrant
diatomaceous earth	Perma-Guard D10	Desiccant
esters of vegetable oil	Hasten	Penetrant with non-ionic surfactant (?) added
fatty acid ethoxylates	Deluge 600 Wetting agent	Non-ionic surfactant
metarhizium	Green Guard	Fungal spores to control locusts in organic crops; toxic to bees
paraffinic oil	SK Enspray 99	Combination insecticide & fungicide
petroleum oil	Summer Spray Oil Winter Spray Oil Vicol Summer Oil Insecticide	Wide use pattern
pheromone	Wild May Fruit Fly Attractant	Attracts and kills in a 'wet' trap, i.e. fruit flies drown in attractant (pheromone products containing an insecticide not certified)
pine oil	BioWeed Control	Suppresses rather than controls
potassium bicarbonate	EcoCarb EcoRose	Limited to small scale, i.e. non-commercial, operations
potassium salts	Hitman Soap Insecticide	Wide use pattern
pyrethrins	Pyganic Organic Insecticide	Broad spectrum (incl. beneficials), short residual (breaks down quickly in sunlight)
rotenone	Derris Dust	Toxic to people and fish
spinosad	EcoNaturalure Entrust Naturalyte	Wide use pattern; resistance can be an issue if too heavily relied upon

Table 2: Registered organic animal health products

ACTIVE INGREDIENT	PRODUCT	COMMENTS
spinosad	Extinosad	Controls lice and fly in both short and long wool
magnesium fluorosilicate, sulphur, rotenone	Flockmaster	Controls lice and itchmite; poisonous to humans (S6)

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