

VEGETABLE NEWS

July 2007

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Carrot fly

Initial predictions for carrot fly have been pushed back by the colder weather and emergence is now predicted around 20 July.

The timing of foliar sprays for carrot fly control is critical. The sprays should be targeted against the adults and the aim should be to kill female flies before they lay eggs, since most pyrethroid insecticides are ineffective in the soil. The flies are killed either by direct contact with the insecticide or by contact with insecticide residues on the crop foliage. The best time to apply sprays to kill flies by direct contact is between 4 pm and 6 pm, when maximum numbers of female flies are in the crop.

Research has shown that the maximum damage is caused by the early 2nd generation larvae so it is advisable to use cyhalothrin-lambda eg Hallmark early in the programme. The maximum total dose approved is 450ml.

Deltamethrin eg Decis can be used later in the programme. However deltamethrin should be applied every 7-10 days, as its persistence

is shorter than that of cyhalothrin-lambda

Foliar diseases

Carrots

Check crops now to ensure no foliage dieback is occurring. Alternaria is likely to develop in warm, wet conditions and early onset of disease, which causes premature dieback, can dramatically reduce subsequent yield.

If crop is disease free the most appropriate programme is to begin with azoxystrobin eg Amistar, or Amistar Top followed by tebuconazole eg Folicur. Signum is also useful against alternaria and will give control of sclerotinia. Sprays should be repeated at 2- 3 weekly intervals depending on weather conditions/disease pressure. If the crop already has some disease begin with tebuconazole and use azoxystrobin later in the programme.

Lettuce/scallions

Downy mildew can affect a number of crops, but is probably most

destructive on lettuce and scallions. Dimethomorph + mancozeb (Invader), fosetyl-aluminium (eg Aliette) and metaxalyl + mancozeb (Fubol Gold) have off label approval for use in both crops. In addition for protection azoxystrobin (eg Amistar) is approved for both. Maintain a programme of regular sprays while conditions favourable to the disease persist.

Development of downy mildew is favoured by humid conditions with leaf wetness, particularly in low temperatures. If dry weather returns after infection the crop can partially recover.

Brassicas

Ringspot and white blister are appearing on brassica crops. Downy mildew is also present.

Chlorothalonil (eg Bravo) or azoxystrobin (eg Amistar) are useful protectants against foliar disease and can be tank mixed. Chemicals containing metalaxyl or metaxalyl M will control white blister. These products will also help control downy mildew.

Approved products for ringspot include boscaild + pyraclostrobin (Signum), difenocanazole (eg Plover), tebuconazole (eg Folicur) and tebuconazole + trifloxystrobin (Nativo).

Check approval for particular brassica crops.

Leeks

Rust occurs most frequently in conditions of high humidity with low rainfall. Spores can be carried long distances in the wind.

Azoxystrobin (eg Amistar) is a useful protectant with tebuconazole (eg Folicur) or tebuconazole +

trifloxystrobin (Nativo) having curative properties.

With all foliar diseases aim to dispose of crop debris as soon as possible after harvest to prevent spread of spores from infected material.

Fungicide usage

Fungicide resistance is a major threat to disease control, and it is important to use strategies to prevent resistance developing. Resistance is a genetic adjustment by a fungus that results in reduced sensitivity to a fungicide.

There are a number of factors which will affect the speed of resistance developing

- Large fungal populations (high disease situations) allow a greater opportunity for the selection of resistance.
- Resistance is more likely to develop against fungicides that have a single mode of action eg , especially if they are used alone for a long time.
- Broad-spectrum fungicides act by interfering with several of the fungus's life functions. The action of broad-spectrum fungicides allows less chance for resistance, since the fungus must undergo multiple changes to counteract the fungicide.

Fungicides are grouped in classes along with other compounds with similar chemistry. All compounds in this class have similar modes of action i.e. they all affect the fungus in the same way The class to which a particular fungicide belongs is

important; once a fungus develops resistance to one compound in a class, it becomes resistant to all other fungicides in that class. Unfortunately it is not always obvious from the product name which class the fungicide belongs to.

The table below shows the major fungicides along with risk factor. Where the fungicide contains two ingredients from different classes the product will appear in two groups.

| Chemical group | Active ingredient | Risk of resistance developing | Example |
|-----------------------|---------------------------|---|---|
| dicarboximide | iprodine | Medium to high risk | Rovral |
| dithiocarbamates | mancozeb | Multi site inhibitors low risk | in Fubol Gold (mancozeb + metalaxyM) Dithane |
| | thiram | | Thianosan |
| carbamate | propamocarb hydrochloride | Multi site inhibitors- low to medium risk | Filex Proplant |
| chlorophenyl | chlorothalonil | Multi site inhibitors- low to medium risk | Bravo |
| carboxamides | boscalid | Single site inhibitor – medium risk | in Signum (pyraclostrobin+ boscalid) |
| morpholines | dimethomorph | Low to medium risk | Invader (dimethomorph + mancozeb) |
| | fenpropimorph | | Corbel |
| phenylamide | metalaxyIM | Single site inhibitor – high risk | SL 567A in Fubol Gold (mancozeb + metalaxyI-M) |
| | fosetyl-aluminum | Low risk | Aliette |
| strobilurins | azoxystrobin | Single site inhibitor – high risk | Amistar |
| | pyraclostrobin | | in Signum (pyraclostrobin+ bscalid) |
| | trifloxystrobin | | Nativo (tebuconazole + trifloxystrobin) |
| triazoles | difenoconazole | Medium risk | Plover |
| | tebuconazole | | Folicur Nativo (tebuconazole+ trifloxystrobin) |
| thiadiazole | etridiazole | Low to medium | Aterra |
| inorganic | sulphur copper | Low risk | Sulphur Flowable Cuprokylt |

- ∅ Do not use two consecutive strobilurins in any spray programme.
- ∅ Only one application in three should be a strobilurin
- ∅ Alternate fungicides from different modes of action.
- ∅ When using tank mixes ensure the chemicals have different modes of action. Mixes where a protectant is mixed with a curative are useful
- ∅ Adhere to manufacturer's recommended rate and application interval.

Pesticide Update

The following off label approvals have been issued since the last Vegetable News

| Product | Active ingredient | Use | Crop | Off label number |
|---|----------------------|--|------------------|--|
| Gamit 36 SC | clomazone | weed control | swede | 0933/07 |
| Stomp | pendimethalin | weed control | broad beans | 1017/07 |
| SL567A | metalaxyl-M | downy mildew | scallion | 1027/07 |
| Decis Protech Delta M 2.5 EC Bandu Pearl Micro Decis | deltamethrin | general insecticide | carrots, parsnip | 1652/07 1263/07 1610/07 1662/07 1696/07 |
| Decis Protech Pearl Micro Bandu | deltamethrin | general insecticide | celery | 1158/07 1162/07 1579/07 |
| Fubol Gold | metalaxyl + mancozeb | downy mildew, root malformation disorder | beetroot | 1256/07 |
| Delta M 2.5 EC Bandu Cleancrop Decathlon Decis Protech Pearl Micro | deltamethrin | general insecticide | scallions | 1261/07 1579/07 1641/07 1652/07 1662/07 |
| Delta M 2.5 EC Bandu Cleancrop Decathlon Decis Protech PearlMicro Decis | deltamethrin | general insecticide | leek | 1262/07 1614/07 1632/07 1658/07 1662/07 1688/07 |
| Pearl Micro Delta M 2.5 EC Bandu Decis Decis Protech | deltamethrin | general insecticide | bulb onion | 1662/07 1264/07 1613/07 1698/07 1652/07 |

| Product | Active ingredient | Use | Crop | Off label number |
|---|--------------------------|---------------------------|---------------------------------|-------------------------------|
| Cleancrop Silo | lambda-cyhalothrin | general insecticide | parsley | 1283/07 |
| Cleancrop Silo | lambda-cyhalothrin | general insecticide | leek, onion, scallion | 1287/07 |
| Cleancrop Silo | lambda-cyhalothrin | cutworm, silver y moth | beetroot | 1294/07 |
| Cleancrop Silo | lambda-cyhalothrin | carrot fly, silver y moth | celery | 1295/07 |
| Cleancrop Silo | lambda-cyhalothrin | bruchid beetle, thrips | broad beans | 1298/07 |
| Orius Mitre Alpha Tebunconazole | tebuconazole | white rot | scallions | 1322/07 1361/07 1387/07 |
| Orius Mitre Alpha Tebunconazole | tebuconazole | ringspot | calabrese, cauliflower | 1326/07 1371/07 1375/07 |
| Orius Mitre Alpha Tebunconazole | tebuconazole | white rot | onion | 1336/07 1369/07 1384/07 |
| Orius Mitre Alpha Tebunconazole | tebuconazole | powdery mildew, rust | various herbs including parsley | 1332/07 1374/07 1383/07 |
| Orius | tebuconazole | rust | broad bean | 1338/07 |
| Mitre | tebuconazole | scallion | white rot | 1361/07 |
| Mitre Alpha Tebunconazole | tebuconazole | broad bean | rust | 1364/07 1390/07 |
| Stomp 400SC | pendimethalin | weed control | celery | 1430/07 |
| Stomp 400SC | pendimethalin | weed control | lettuce | 1432/07 |
| Stomp 400SC | pendimethalin | weed control | leek, onion, scallion | 1438/07 |
| Bandu Cleancrop Decathlon Pearl Micro | deltamethrin | general insecticide | celery, | 1579/07 1641/07 1659/07 |

| Product | Active ingredient | Use | Crop | Off label number |
|------------------------|-------------------|---------------------|--|------------------|
| Bandu | deltamethrin | general insecticide | lettuce | 1612/07 |
| Cleancrop Decathlon | | | | 1640/07 |
| Pearl Micro | | | | 1659/07 |
| Decis | | | | 1695/07 |
| Cleancrop Decathlon | deltamethrin | general insecticide | onion | 1631/07 |
| Pearl Micro | | | | 1659/07 |
| Cleancrop Chicane | fosetyl-aluminium | downy mildew | scallions | 1668/07 |
| Aliette | | | | 1906/07 |
| Cleancrop Chicane | fosetyl-aluminium | downy mildew | lettuce, various herbs including parsley | 1674/07 |
| Defy | prosulfocarb | weed control | celery | 1752/07 |
| Cabaret | cyproconazole | rust | beetroot | 1753/07 |
| Caddy | | | | 1755/07 |
| Cyperkill 5 | cypermethrin | leaf miner | lettuce | 1760/07 |
| Aramo | tepraloxym | grass control | beetroot | 1844/07 |
| Greencrop Pomeroy | cycloxydim | Grass control | broad bean | 1868/07 |
| Agriguard Cypermethrin | cypermethrin | general insecticide | broad bean | 1898/07 |
| Cleancrop Pyrimet | | | | 1944/07 |
| Cleancrop Pyrimet | cypermethrin | general insecticide | carrot, parsnip | 1943/07 |

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