

Soft Fruit News

Spring 2011

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Irrigation control

Getting irrigation perfectly right is a challenge for every soft fruit grower. The amount and frequency required depends on size of plant, stage of growth and weather. Irrigation control using a timer is convenient, but a change in weather dramatically alters crop demand, so measurement of moisture content of the compost is the best guide for when to water. Recent increases in prices of both water and soluble nutrients provide another incentive to deliver just what the plants need, with minimal wastage. Responding to this challenge, CAFRE at Greenmount Campus has installed a range of moisture sensors and control systems, to demonstrate and compare the alternatives. Also on view will be a nutrient dosing rig which can provide accurate plant feed along with the irrigation. Growers will be welcome to come one evening in the week June 6th to 10th, to see these systems in operation. Details of this open evening will be sent out nearer the time.

On-farm trial of irrigation control

In addition to the demonstration on ornamental crops, at Greenmount Campus, it would be helpful to see irrigation control using moisture sensors in a strawberry crop. The system is quite simple, and can be set up in one section of a tunnel or glasshouse, providing a comparison with the normal practice in other sections or other houses. Two sensors are required, one to detect when the compost is too dry and switch on irrigation and one to detect when it is too wet, to switch off the irrigation. When set up correctly the sensors will maintain the compost moisture within an ideal range for the crop. The sensors are connected to a data logger, which also maintains an accurate record of the compost moisture, this in turn is connected to a solenoid valve which triggers the irrigation system when required. This equipment will be provided by CAFRE for the duration of the trial. If any grower would like to host such a trial could they please contact Anne Stone (contacts at end of this bulletin) to discuss the details.

Two spotted spider mite (TSSM)

The TSSM were not harmed by the cold winter and some are already very active in crops. They overwintered as adults, mated and laid eggs in March, so by early April a new generation had appeared.

All protected strawberries and raspberries should be inspected with a hand lens. The movements of TSSM can often be seen by the naked eye but the two distinctive spots, one each side of the mid line, require magnification or extremely good eyesight. Both old and new leaves can be affected. If

the infestation is light then application of the predatory mite, *Phytoseiulus persimilis*, can gain control. More normally, chemical treatment is required first to knock back the pest, with introduction of the predatory mite 7-10 days later. The rate is usually 4 per m², so a house of 9m x 36m would require 1,300 predators. The predators can sometimes overwinter successfully, providing long term protection, though they are often killed by the cold and disinfection chemicals. The table below shows where predators can be obtained.

Supplier	Tel	Price	Carriage
Koppert	01440 704488	£15.24/2,000 or £72.37/10,000	£3.70
Syngenta Bioline	01255 863 200	£13.35/2,000	£5.00

A suitable chemical spray is Dynamec (abamectin) at 50ml per 100l water plus Apollo (clofentezine) at 40ml per 100l water. Both products require copies of the off label approval to be obtained before use, which for Dynamec is 0423/07 and for Apollo is 2270/0.

Gooseberries with leaves stripped by sawfly



Two spotted spider mite, highly magnified



Strawberry thrip



Thrips on strawberries

Thrips were a problem for many growers in England last year and are already appearing in the same crops this year. Crops in N.Ireland are rarely severely affected, but we should be ready to identify this pest so it can be quickly controlled if necessary. Several species of thrips can damage strawberries. They are very narrow

bodied insects 1-2mm in length and pale brown in colour, most commonly found in the flowers. Damage is more severe in hot weather and causes discoloured stamens and anthers in flowers and russeted fruit. Treatment depends on species, so if you suspect thrip damage ask for CAFRE to help identification.

Care of Raspberries in tunnels

The early season growth is soft and easily scorched by sprays. Ventilate the tunnel well before and after spraying, and spray at a cool time of day.

Powdery mildew can quickly become a problem in protected raspberries, especially when they are kept closed most of the time to hasten fruiting. The undersides of young leaves are whitish

with mycelial growth while the upper leaf surface can be discoloured. Control is by improved ventilation and reduction in humidity, for example by venting after irrigation.

Check protected raspberries for two spotted spider mite (TSSM), which can cause severe damage.

Gooseberries

The danger period from sawflies is approaching. Monitor crops and if sawfly are seen spray immediately with lambda cyhalothrin e.g. Hallmark, thiacloprid e.g. Calypso (SOLA 0335/06) or chlorpyrifos. The larvae are caterpillar-like, up to 20mm long and pale green with small back spots and black heads.

The main disease of gooseberries is powdery mildew. If the crops are well spaced, well irrigated and grown in soil with plenty of organic matter then mildew may not appear. If the crop has suffered mildew in the past then sprays of myclobutanil e.g. Systhane 20EW can prevent damage.

Approved fungicides 2011

Note that some approved actives have a one year harvest interval so are rarely appropriate. These are marked with *.

Active and product example	Disease protected against, and notes	Protected strawberry	Outdoor strawberry	Protected raspberry	Outdoor raspberry
azoxystrobin Amistar	P. mildew Black spot	✓	✓	✓	✓
*benthiavalicarb-isopropyl + mancozeb Valbon	1 year HI	X	✓	X	✓
boscalid + pyraclostrobin Signum	<i>Botrytis</i> P. mildew	✓	✓	✓	✓
bupirimate Nimrod	P. mildew	✓	✓	X	✓
copper oxychloride Cuprokylt	rust	X	X	✓	✓
captan Alpha Captan 50WT	H.I. 7 days	✓	✓	X	X
chlorothalonil Bravo 500 SOLA 0949/11	<i>Botrytis</i> H.I. 3 days Max conc. 2l in 2,000 l water	X	✓	X	✓
cupric ammonium carbonate Croptex Fungex	Till 30/11/11	✓	✓	✓	✓
*cyflufenamid Cyflamid SOLA 2915/08	H.I. 1 year	X	✓	X	✓
cyprodinil + fludioxonil Switch	<i>Botrytis</i> H.I. 3 days	✓	✓	✓	✓
dimethomorph Paraat	<i>Phytophthora</i> crown and root rots	✓	✓	✓	✓
fluazinam Shirlan	<i>Phytophthora</i> root rots. Use before 31 st March	X	X	✓	X
fenhexmid Teldor	<i>Botrytis</i>	✓	✓	✓	✓
fenpropimorph Corbel	p. mildew	X	✓	X	✓
fosetyl aluminium Aliette 80WG	<i>Phytophthora</i> crown and root rots Dip runners in 375g/100l water	✓	✓	X	X
iprodione Rovral	<i>Botrytis</i> H.I. 2 days	✓	✓	✓	✓

Active and product example	Disease protected, and notes	Protected strawberry	Outdoor strawberry	Protected raspberry	Outdoor raspberry
kresoxim-methyl Stroby WG SOLA 2503/07 (s'berries) and 2917/08 (r'berries)	p. mildew H.I. 14 days strawberries and 1 year in raspberries	✓	✓	✓	✓
mepanipyrim Frupica SC	<i>Botrytis</i> H.I. 3 days	✓	✓	X	X
meptyldinocap Kindred	P.mildew H.I. 3 days	✓	✓	X	X
*metalaxyl-M + mancozeb Fubol Gold (SOLA 2567/10	Downy mildew H.I. 1 year	✓	✓	✓	✓
myclobutanil Systhane 20EW	p. mildew H.I. 3 days	✓	✓	✓	✓
penconazole Topas SOLA 3651/07	p. mildew	✓	✓	X	X
potassium hydrogen carbonate commodity substance	p. mildew dilute at 0.5% to 1.0%	✓	✓	✓	✓
*propiconazole Bumper 250EC	H.I. 1 year	✓	✓	✓	✓
proquinazid Talius SOLA 0420/09	p. mildew	✓	X	✓	✓
pirimethanil Scala	<i>Botrytis</i>	✓	✓	✓	✓
quinoxifen Fortress SOLA 1923/04	p. mildew H.I. 14 days	✓	✓	X	X
sulphur Thiovit Jet	p. mildew	✓	✓	X	✓
*thiophanate methyl Cercobin WG	H.I. 1 year	X	✓	X	✓
thiram Thianosan DG	<i>Botrytis</i> H.I. 7 days	✓	✓	X	X
tebuconazole	rust	X	X	✓	X

Fungicide programme for protected strawberries

A range of alternative products and modifications on a programme are equally effective. Aphicides, acaricides and calcium products may be added to these fungicides.

This suggested programme shows use of a range of actives with different modes of action, to prevent resistance.

Timing	Product Name	Active ingredient	Disease and Notes....	Harvest interval
pre-flowering	Rovral	iprodione	<i>Botrytis</i>	2 days
white bud stage or at first flowers	Systhane + Switch	myclobutanil cyprodinil + fludioxinil	Mildew <i>Botrytis</i>	3 days 3 days
Plus 7-10 days	Frupica or Signum	mepanipirim boscalid + pyraclostrobin	Expensive, but active against both <i>Botrytis</i> and powdery mildew <i>Botrytis</i> with some control of mildew and black spot	3 days 3 days
Plus 7-10 days	Switch	cyprodinil +fludioxinil	<i>Botrytis</i>	3 days
Plus 7-10 days	Rovral+ Nimrod	iprodione bupirimate	<i>Botrytis</i> <i>Powdery mildew</i>	1 day 1 day
During picking	Teldor or Scala	fenhexamid pirimethanil	<i>Botrytis</i> <i>Botrytis</i>	1 day 1 day
During picking	Potassium bicarbonate		Mildew, dries up affected areas. Does not prevent	none
During picking	Serenade ASO	<i>Bacillus subtilis</i>	Ecologically good, but expensive and sometimes hard to obtain. Most effective if alternated with Scala	none

Note

In the interests of factual reporting in this newsletter, reference to commercial companies and products is inevitable. No endorsement is intended nor is criticism implied of similar companies and products which are not mentioned.

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