

Tyfu Cymru: Technical Advice Sheet

Soft Fruit Notes – June

General Comments

From a growing perspective this has been a difficult season so far. We had seven months of wet weather, followed by two months of hot, dry weather and this has caused problems in soft fruit. Avoid re-using old bags even through the current crop may be looking strong and healthy as the risk of disease and pest carry over can be difficult to avoid.

Picking and Selling

As plants are coming into fruit consider your plans for harvesting each crop.

- This is especially important if you are picking for the first time as an alternative to PYO.
- Dedicated pickers, if trained correctly, should leave a much tidier crop than the general public would as they will be removing all ripe fruits which can be graded as first and second class or unmarketable, this will result in less wastage of so a higher percentage of marketable fruit
- In addition by the picking, removal and disposing of unmarketable (i.e. over ripe, damaged, diseased and pest infested fruit) away from the plantation they will improve the cleanliness of your tunnels to help pest/disease control most notably of spotted winged drosophila.
- While it may be inappropriate to track the productivity of individual pickers as you would see on larger farms, it is essential to spend sufficient time training your staff on how to pick and grade fruit especially if you are selling lower grade as a secondary product for jam making.
- If you are new to picking fruit and the crop is being grown on table tops you should provide the pickers with picking trollies. For a small investment you can make use of trollies which were originally designed for use in tunnels to improve the speed and efficiency of your pickers working both in protected and outdoor crops.
- These can also be used not only as picking aids but also to transport plants down rows when planting, for carrying tools when de-runnering, crown thinning or leaf plucking crops
- Chilling (field heat removal) can also be a new challenge if you are selling picked fruit for the first time. You should aim to get your fruit to at least 10°C or preferably 5°C or below within an hour of harvest to maintain quality and extend crop shelf life.
- You will probably find that in the main you're able to sell your fruit within a few hours or at most a day or so of harvest but especially when the weather is inclement and there a reduced foot fall on the farm being able to remove the field heat and too cold store fruit that has had to be picked during or just before the weather changed will help you to have quality product and continuity of supply to your customers no matter what the weather and to even out peaks and troughs in fruit ripening and picking.

- The renting of mobile trailer fridges could be worth considering, particularly if you're only going to be using it for a relatively short period of the year.
- Remember to keep up with social media to let your customers know what you have on offer, and consider how you can continue with other parts of your business – cafes, pre-picked vegetables or cut flowers will also be attractive to customers. For pricing, don't be afraid to update your prices for a new season, especially if you're selling ready-picked. Prices of around £5-6/kg for PYO can be increased to £7/kg to help cover your extra costs of picking. Remember that you are not competing with supermarkets, you're selling a very different product!

Other Crops for the PYO Market

As you move through the summer and make plans for next year, you could start thinking about crops for next year. A number of other products fit well with the PYO model and can supplement your business in a number of ways. **Sweetcorn** can be planted cheaply but sold at high value particularly as it will be at much higher value than that seen in supermarkets. **Cut Sunflowers** could be sold at three-for-£1 for basic varieties. Think about what sort of customers are visiting your site and what products are likely to be attractive to them. Other crops like gooseberry can be helpful in bridging harvest periods and can be very popular even if only grown in small areas, in contrast the appeal of black and redcurrants is likely to be less but many growers are surprised how many people still want to use currents to make cassis, ice cream and redcurrant jelly, so find both crops easily sell out. Both crops (notably the redcurrants) have the added advantage over other soft fruit crops that if the correct cultivars are planted they will ripen relatively late and provided that the temperature in July and early August are not excessively high will stand sometimes for weeks and still be marketable e.g. the redcurrant Rovado .

More products will also increase the average spend per customer as there will be greater choice for them to take home. In recent years many growers have observed that customers like to visit more often these days (several times/week) pick your own or farm shops and relatively small amounts of fruit or vegetables at each visit, so make sure you have a good range of crops available to them at every visit throughout the harvest season. To do this with vegetables and flowers will require as with the strawberries and if your raspberries are now grown in substrate several plantings or sowings to obtain a harvest (selling period) of months rather than just a few weeks)

Diseases in Strawberry

The recent weather has been ideal for the infection and rapid development powdery on leaves, runners/stolons and most importantly ripe and unripe fruit. If you are seeing up-cupping or yellow or purple brown blotches on the upper surface of the leaves, or off white spores on the surface on the fruit (right) apply a rapid fungicide application which is curative and ideally also protectant in action (note that if you use commodity potassium bicarbonate (of a product such as Karma) it is predominately curative in action, so you will need to follow soon after its use with a preventative fungicide. Higher temperatures increase the water uptake of plants to cope with increased transpiratory loss from foliage. As a result damage to the vascular tissue (xylem) within the crowns or roots of plants caused by phytophthora be it red core or crown rot will begin to show initially as as patches of irregular plant growth followed by wilting and plant death within plantations.



Strawberry Pests

We are seeing **Aphid** populations increasing rapidly on some sites, even where an effective IPDM program is in place and has been working well controlling pests such as thrips and two spotted spider mite. If you are seeing localised outbreaks of aphids you could consider ignoring it at present if at a very low level (but continue to monitor the situation so that you can act quickly if needs be to prevent foliar and fruit contamination with aphids and the honeydew they secrete or you could spot-treating effected areas now.

Thiacloprid (Calypto) can provide effective aphid control, but use sparingly as it can be harmful to beneficial predators and may upset your IPDM. This can be a similar story for **Two Spotted Spider Mite** – local flare ups should be spotted and responded to quickly, early treatment will keep things under control. Crop walk at least weekly, and monitor your crops for any changes.

The exceptionally hot weather in late May and throughout most of June has produced a high level of incidence of **Tarsonemid Mite** this year. You're unlikely to see the mites unless you are using a x20 hand lens, but the crinkling and curling of young leaves (right) will be easy to spot, some cultivars such as Malling Centenary and Elsanta are particularly susceptible to attack. You are more at risk if you have carried strawberry plantings made last year or have re-used bags or troughs containing compost that was used to produce crops last year.

If you are using *Neoseiulus (Amblyseius) cucumeris* for western flower thrips control these will be providing some tarsonemid mite control however the introduction rates of this predatory mite are far higher for tarsonemid mite so you are likely to need where damage to strawberry plants has now become obvious to make at least two introductions 10-14 days apart of *N. cucumeris* (according to tarsonemid mite population present of 100-400 mites/m²).

For spot control of two spotted spider mite (but only if a protected crop) the acaricide Cyflumetofen (Nealta) which has a 1 day harvest interval could be a useful option. One application is permitted/year, it can be effective against all mobile stages of this pest and also can reduce egg numbers. However it may have a slight adverse effect upon *Orius laevigatus* so this should be borne in mind where this predator is being used for rose and rubus thrips control in strawberries.



Flower Pests – As part of regular crop walking you should inspect flowers, tapping open flowers over white paper. **Pollen Beetle** (right) may be seen in your crops as they migrate in from oil seed rape, feeding on pollen. Low numbers are nothing to worry about, but 5 – 6 per flower can lead to damage due to trampling down onto the bases of anthers and petals so you might in some circumstances consider treatment. Pay close attention for **Thrips**. The black thrips often now seen in the flowers of strawberries in mid-late June and July i.e. rose and rubus thrips which can cause rapid and severe bronzing of the fruit of 60 day crops of June bearers as well as everbearer strawberry varieties are currently are sensitive to spinosad (Tracer). Calypso can be a useful product with these pests as well, but is best used for incidental control. However repeated use of these insecticides is likely to lead to resistance of these thrips species to these insecticides.



In addition spinosad is required for the control of SWD and in some cases **Tortrix** caterpillar control (notably Blastobasis) in protected strawberries. For outdoor and protected strawberry crops only 3 applications of this insecticide are permitted per year, so usage for thrips control should be kept to a minimum so as to ensure that especially in the case of everbearer cultivars there is sufficient rounds of spinosad available for the effective control of SWD. This year the problem of SWD and lack of options as regards pesticides for its control in both outdoor and protected strawberry crops has been exacerbated by the Emergency authorisation for Cyantraniliprole (Benevia 100D) 1339/20 restricting use between the 1 – 30th June 2020, with in addition only 1 application permitted/year.

Calypso can also be suitable for spot control of **Capsid** (right) or **Blossom Weevil** – capsids have this year become an increasingly significant problem in some areas, especially where there are large numbers of flowering weeds at the mouths or around the sides of tunnels that can act as a reservoir for this pest. Capsids will destroy flowers and make holes in petals, similar to blossom weevil. Both nymphs and adults are starting to become active now, but you'll need to be on the lookout as they tend to take flight about 1-2m in front of you as you walk down the tunnel. Other signs will be distorted (button nosed) fruit as shown below.



Cane Fruit

There has been in the case of established summer fruiting raspberry plantations often a poor bud break this spring in many but not all cases the main problem was the exceptionally mild and wet winter providing inadequate chilling for the floricanes of varieties with a high winter chilling requirement e.g. Glen Ample, Glen Dee, Glen Carron. . This highlights the benefits of using new pot or module grown plants that have been grown and then over winter cold stored by a specialist propagator, so that by the time they are planted out into the fruiting site they have received adequate cold units to break bud evenly down more or less the whole length of their floricanes. With overwintered in soil or in pot established i.e. carried through plantings made last year or earlier but break produced typically a bottle brush of flower/fruiting laterals on the top 25 or 30% of canes with weak or little or no bud break below this height, with consequent loss of crop. A series of frosts for several nights running and commencing on the 9 May also caused in some cases not only severe flower loss but also primary and in some cases whole secondary fruit lateral loss and in these situations the crop production may be minimal this year and confined to tertiary lateral (where varieties produce them) and late emerged basal fruit lateral production. Severe damage to current season primocane of all both summer and primocane (autumn fruiting) raspberries, black and hybrid berries also occurred and where complete removal of first flush of primocane is not practiced has produced, foreshortened, branched cane for next year's fruit production, the vascular tissue of which has been compromised and the cane rind split offering ideal egg laying sites for raspberry cane midge and for infection later in the year by Fusarium and cane blight.

Newly planted canes in substrate will be fruit 70-90 days after planting, considerably sooner and more consistently than soil-grown plants. Uncertainty from covid-19 is still making it difficult for growers, especially those originally targeting the PYO market although there are positive signs that restrictions will be relaxed before too long. If you are finding that raspberry canes are starting to reach the top of your tunnels you can consider cordoning the canes at a 45° angle, drawing the canes over the walkway to achieve a tunnel-like effect. It can be tempting to cut back growth, but be careful not to take at too many flowers if you do. If you are pot growing it may be best to limit the number of canes to 4 – 5 per pot at the start of fruiting, removing new spawn or tying in string either side.

Raspberry Pests

Raspberry Cane Midge numbers are still increasing, especially at sites where they have been a problem previously, and these should be monitored by using traps. Trapping out is not an option and unfortunately there are currently no fully effective pesticide options for control, those that are available will have a detrimental effect some lasting for weeks on the establishment and survival of introduced and native beneficial mites and insect predators in treated crops, so they should not be applied as overall only targeted sprays where the midges can be expected to be egg laying in addition the plan should be to achieve optimum control of the first generation of this pest. Later generations are more or less impossible to control as spray penetration to fully cover the rind of the primocane through the foliar canopy (of floricanes and primocane is often impaired even in outdoor plantations where spray can be applied into both sides of crop rows. In protected crops this is likely to be impossible to achieve especially for the outer side of the rows adjacent to the legs of tunnels.



One option is to remove the first flush of spawn so that there is no primocane present when the first generation of raspberry cane midge emerge from the soil or compost in the spring (April-May), however this technique may still leave a few canes that can be infested so a back up base of floricanes insecticide spray may also be required as soon as emergence of the adult midges has been detected and the threshold for control exceeded, especially where the pest was not a problem last year.

With long cane raspberry plantings that are to be cropped once and then grubbed removal of first and sometimes a second or third flush of canes is the norm as no primocane to carry through is required so they also will require no sprays for cane midge or cane blight control.

Blackberry Leaf Midge is also being widely caught in traps, for many years this has been a serious pest of protected autumn and double cropping primocane fruiting raspberry crops and some spine free blackberry cultivars notably Loch ness but more recently growers have started to see damage to the foliage and occasionally tips of primocane of some summer fruiting raspberry cultivars.

The first sign of their presence is the leaf tips becoming twisted and distorted by the feeding of the larvae of this insect (photo right). Most of the damage is caused by the pest to the growing tip of primocane of susceptible cultivars of black and raspberries this reduces the overall growth rate of canes and foliage can cause shoot tip loss and causes multiple branching rendering them unsuitable to retain to crop the following year.

Small and Large Raspberry Aphid are present in both protected and outdoor crops. They are most likely to be found feeding between the leaves and folds of the unfolding leaves at the tip of the primocane or floricanes fruiting intervals. Tell-tale signs of infestation is glistening honeydew on foliage below infested leaves or on the mulch below. Predators like ladybirds or hoverflies may be an indicator too. **Two Spotted Spider Mites** have been seen in protected and outdoor crops, both eggs and adults, mainly on the underside of the oldest foliage of flori and primocane towards the bottom and inside crop rows. Predator introductions (e.g. *Phytoseiulus* or of *Neoseiulus andersonii*) will help to provide control of this pest outside and under protection. **Raspberry Beetle** traps should be monitored carefully now to determine whether spraying will be necessary, if it is excellent results can be achieved by the application of thiacloprid (Calypso) at late green bud, generally with the exception of blackberries Calypso.

Raspberry Diseases

Cane Blight remains an issue in many established summer fruiting raspberry plantations causing many floricanes to die over winter, or initially to break bud and then to collapse between bud break and harvest. Its presence is due to, inadequate control of cane midge, late autumn and late winter frost and physical damage to the nodal buds and rind of floricanes. If you are having problems with controlling raspberry cane midge and or cane blight discuss your potential options now with your ADAS fruit consultant.



Raspberry Rust is also being seen early this summer with spore bodies being seen on both the upper (see picture adjacent) and more recently lower surface of foliage of flori and in some cases now primocane. The weather late last summer and during the autumn and this late spring and early summer has been ideal for this pathogen. At this time of year infection is typically sunken yellow spots on the upper surface of expanded leaves. These then change to bright orange/ yellow spore bodies (photo right). If the weather is wet and warm or hot and humid rust infection of the calyx or even drupelets of fruit can take place. Foliar infection may also become so severe that premature defoliation of primocane occurs during the early autumn reducing the canes winter hardiness. Some incidental control of early stage infection can be achieved by the application of myclobutanil (Systhane 20EW) on label for use in outdoor and protected crops, 3 applications/year, 14 day HI, or use of boscalid + pyraclostrobin (Signum - EAMU's permit use in outdoor and protected crops, 3 applications per year protected and 2 in outdoor crop, both have 3 day HI) or azoxystrobin (Amistar) (EAMU outdoor and protected crop), 2 applications/year and 7 day HI. Also note that azoxystrobin should not be used when the temperature is high (see label and EAMU for full details of use). Keeping tunnel and glasshouse protected crops well ventilated to reduce relative humidity and temperatures especially overnight will also reduce the development and spread of the disease. In the case of highly susceptible varieties of autumn

fruiting raspberry improving air circulation and reducing RH around the lower foliar canopy can also help by using trickle irrigation lines on the soil surface and not spreading water from drippers over the lower foliage of canes where the irrigation lines are placed above the soil or compost surface (also an option for reducing cane blight infection of the base of canes). In addition some growers remove the lowest foliage from canes in July to height of 20-30cms. **Phytophthora** root rot is also now beginning to be seen in crops as they fully leaf out and loss of roots start to take their toll., so check your crops regularly for any sign of this disease in your plantation – see photos below.



Bush Fruit

Early blackcurrant varieties, such as Ben Gairn, are starting to colour now meaning that harvest could start within a month depending on the weather conditions over this period. Blueberry fruit is starting to swell now, so ensure plants are getting sufficient water. Some varieties are looking to have bloomed and set fruit better than others depending on whether they were in flower during the colder periods of weather in early and mid-May. Gooseberry crops that survived frosts in May are now looking good and fruit ripening fast although recent hot and humid weather has favoured American powdery mildew infection of shoot tips, foliage and fruits of susceptible cultivars and may need additional protection against disease where branches are bowed with the weight of the crop.

Pests

Scale insects may still be a problem in some crops if the crawler stages were not controlled with thiacloprid (Calypso). Where they were inadequately controlled earlier in the growing season tortrix moth caterpillars can cause now significant damage now in blueberries. So it's important to continue to monitor crops for light brown apple moth and other tortrix moth caterpillars. In addition black, redcurrant and gooseberry crops should be checked regularly for the first signs of the feeding of **Sawfly** larvae. The leaves low down in and towards the centre of bushes should be checked for feeding damage and treated as necessary. **Aphid** damage depending on the crop and aphid species involved may also cause twisting, red coloured blisters and yellowing of leaves and stems.

Disease

Leaf Spot should be monitored for particularly in susceptible varieties such as Ben Hope. **Botrytis** is always a risk to crops pre-harvest, particularly with the changeable and damp weather we have experienced later. Botrytis control can be improved by mowing alleyways where weeds are starting to increase in height as this will increase the humidity and risk of Botrytis development. Monitor crops carefully and act if necessary. **Powdery Mildew** in gooseberries should have been treated for with routine sprays, but monitor the crop particularly when temperatures start to rise.

Blueberry Anthracnose may become noticeable once the fruits ripen and mature. Ripening fruits become sunken and wrinkled at the blossom end. Effective fungicide programmes during flowering should have reduce the risk of this developing. Where the crop is being packed ensure that the fruit is cooled as quickly as possible after harvest.

Disclaimer

Every effort is made to ensure the accuracy of information and recommendations given in these notes. All applications of crop protection chemicals should be made in accordance with label recommendations, which should be consulted before spraying. Some of the pesticides mentioned in these notes may not be supported by label recommendations for their use on crops but are permissible via Extension of Authorisation for Minor Use (EAMU) in the UK under 'The Revised Long Term Arrangements For Extension Of Use (2002)'. In these cases, the use of the pesticide is at the risk of the user and Tyfu Cymru does not accept liability for any loss or damage caused by such use. The references to on-label approvals and EAMUs for use of pesticides in crops and are correct at the time of writing. These are subject to change and approval may be withdrawn at any point. It is the grower's responsibility to check approvals before use of pesticides. If in doubt a grower should seek advice from a BASIS qualified advisor - this is available free of charge for eligible growers through the Tyfu Cymru program, please contact us to arrange an appointment – email/telephone advice is also available.