



Issued: 22nd April 2021



IN BRIEF

- Soils have remained cold and increasingly dry since the last Bulletin (10th April) and despite good seedbeds, crops are taking some time to germinate and emerge. As a benchmark, our sandy loam Demonstration site near Downham Market took 18 days to emerge after drilling. **Remember, germination will start where soil temperatures are above 3°C but will be slow below 5°C.**
- Small amounts of frost damage reported across the growing region.
- Weed control - weed emergence is also very slow in the cold and dry conditions. Any pre-emergence herbicides will appear not to be very effective this year but may play a part in sensitising weeds to the effects of post-emergence applications.
- With all post emergence herbicide applications, it is important allow beet crops to harden off as much as possible before applications are made. High light levels, dry soils and large changes in diurnal temperatures increase susceptibility to herbicide damage. Check crop growth stages and compliance with the minimum crop growth stage on product labels especially where emergence has been variable and/or where there may be different varieties in the field.
- Try to keep the first post-emergence spray as 'gentle' as possible. Using high rates, increasing the number of partners in the mix, and adding oil will further increase the risk of crop damage.
- As soils are becoming increasingly dry, do not delay in getting nitrogen on to crops. Make sure there is sufficient time for top-dressed nitrogen to be washed into the soil and available to plants to drive rapid leaf growth, although this is challenging under current conditions.
- Several reports of bird/animal grazing of cotyledons have been received. In most cases the growing point remained intact, so the beet should be able to grow away from such damage.
- No reports of aphids in the current crop have been received to date. This is similar to other European countries too.
- The BBRO yellow water pan network (50 sites) will be placed in crops on the 30th April. The first real time data will be available on BBROplus from 4th May onwards.
- Farm hygiene remains crucial to limit any sources of aphids, virus or other diseases such as downy mildew and cercospora leaf spot.



Frost impact

The combination of cold frosty conditions and dry soils is leading to some slow and erratic emergence of low vigour sugar beet. We have now experienced a long run of frosts and whilst there are few reports of widespread frost damage to date, some more advanced crops have been affected with cotyledons showing the effects of low temperature, turning yellow at the leaf margins. More seriously frost-affected plants will initially wilt and then shrivel turning brown/black, usually within a few days of the frost damage occurring.



Fig 1: Small seedling 'nipped' by frost.

Temperatures indicate that the recent frosts have been less severe than those in January and February (see temperature chart below). It is important to check all crops for signs of frost damage, redrilling may be required in cases of severe damage.

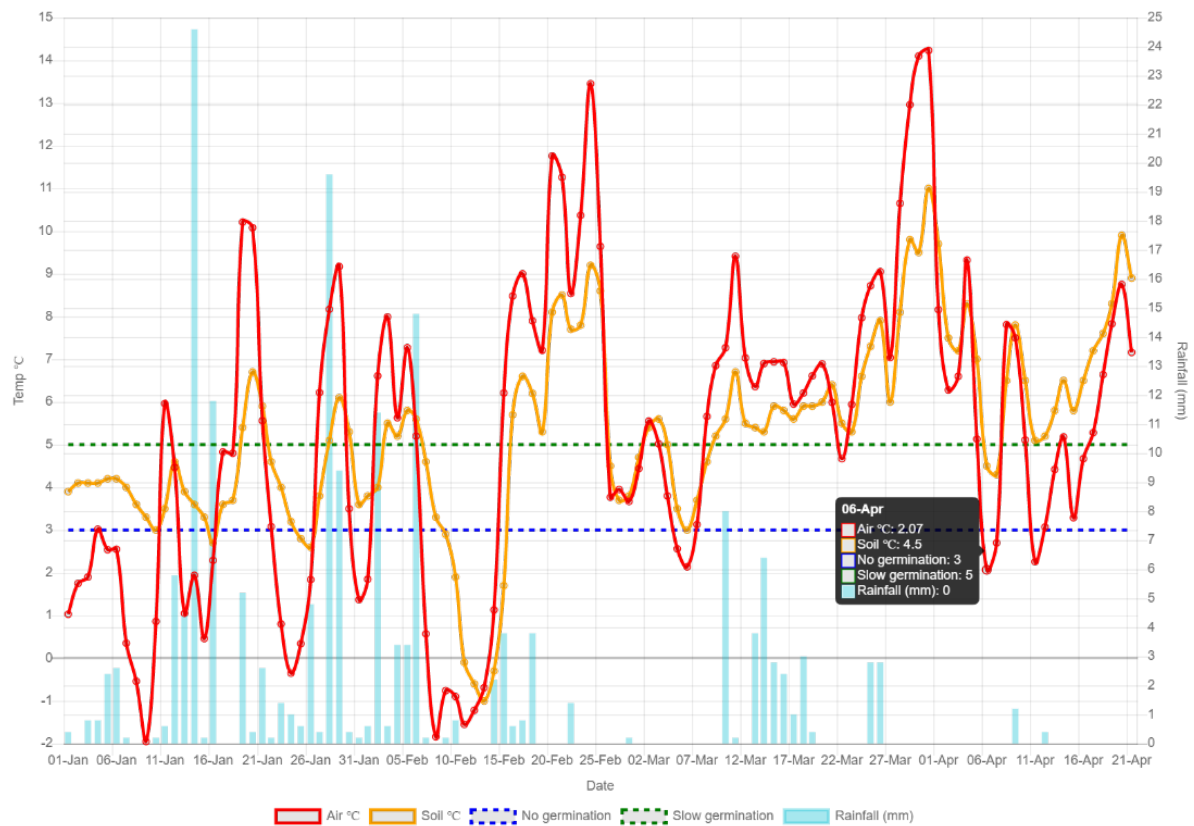
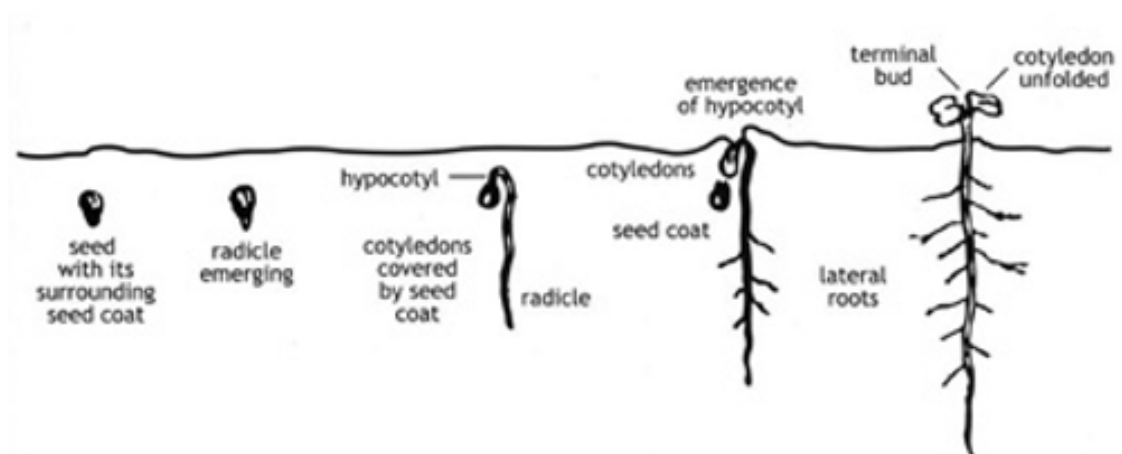


Fig 2: Chart by courtesy of Germain's seed technology. Bury St Edmunds site

Dry conditions

Many crops have been drilled into moisture and this will sustain growth for a while. Remember, by the time cotyledons are unfolded above ground, the initial roots will already be 2-4cm long below ground and hopefully into moisture. However, soils are progressively drying at depth, and rain is required very soon.



We have some received some questions about irrigating crops to help with germination and establishment in these dry conditions. Firstly, have a good check for rooting and the moisture levels in the root zone before deciding on any action. **If you irrigate, avoid applying a large amount of water to reduce the risk of capping and, initially target an application of 15mm of water.**

Herbicides

Metamitron is the least damaging herbicide to the crop under frosty conditions and one of the most effective herbicides under dry conditions due to reliable residual activity. In dry conditions mixing metamitron with oil will help the leaves of the weeds take up the herbicide.

Phenmedipham is purely contact, and it can enter crop leaves when they have been damaged by frost. It is important that the crop has been hardened off before treatment and rates are kept low. Allowing crops to become hardened off is more important if phenmedipham + ethofumesate are to be mixed, used at high rates, or applied with oil.

Lenacil cannot be applied until the crop is at cotyledons fully expanded. Do not apply it under dry conditions as it can damage crops in frosty conditions. Mixing lenacil with phenmedipham can lead to lower levels of damage in frosty conditions due to a synergistic effect.

For Conviso smart crops applications of Conviso One should be delayed until fat-hen is at 2 leaves stage.

The table below is a brief reminder of the options for pre-emergence and post-emergence herbicides.

Active	Residual	Contact	Pre-emergence	Post-emergence	HRAC (2020)	Strengths
clopyralid		✓		✓	4	Volunteer potatoes, Thistles, Mayweeds, Black-bindweed
dimethenamid-p	✓			✓	15	Cranesbill, Shepherd's purse, Poppy, Cleavers
ethofumesate	✓	✓	✓	✓	15	Cleavers, Knotgrass, Black-bindweed, Chickweed, Annual meadow grass, Fat hen, Orache
formasulfuron		✓		✓	2	Broad spectrum
lenacil	✓			✓	5	Brassica species, Black-bindweed, Knotgrass, Persicaria
metamitron	✓	✓	✓	✓	5	Mayweeds, Knotgrass, Small nettle, Fat hen, Orache, Annual meadow grass
phenmedipham		✓		✓	5	Black-bindweed, Fat hen, Charlock, Ivy-leaved speedwell
quinmerac	✓		✓	✓	4	Cleavers, Ivy-leaved speedwell, Fool's parsley
thiencarbazone-methyl	✓	✓		✓	2	Broad spectrum
triflusalufuron-methyl		✓		✓	2	Brassica species, Fool's parsley, Cleavers, Mayweeds

Aphids and virus yellows 2021

Following the previous cold winter and information provided by Rothamsted Research insect survey we still do not anticipate aphids in sugar beet crops until the middle of May at the earliest, some five to six weeks later than last year. This is good news for the 2021 crop although occasional green wingless aphids have been found in April on oilseed rape plants (old yellow leaves at the bottom of the canopy) or in fodder beet clamps. However, none of these were winged.

BBRO will once again be undertaking its detailed aphid and virus monitoring programme in 2021. At this stage of the season BBRO also encourage you, as a matter of urgency, to ensure all sources of potential virus infection (e.g. root remnants, regrowth on cleaner loader sites etc.) are removed to decrease the risk of virus infection in your current crop.

Currently Teppeki remains the only approved aphicide for aphid control in 2021 however the Industry has applied for two emergency authorisations, outcomes of which will be published as soon as information is provided by HSE.



EVENTS

Details of our summer events will be released shortly, including some on-farm events in June, places will be limited.



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