British Beet BBRO Research Organisation

Advisory Bulletin

BBRO Advisory Bulletin No.2 - Week Ending 17th March 2017

Drilling Update

There was some good progress made with the start of drilling last week on lighter soils which had dried sufficiently. However, many growers are still having to be selective with fields as some, even lighter soils, remained wet at depth. Variable rainfall over the weekend and the early part of this week may delay further drying so patience is key. In particular, check soil at depth and in lower lying areas of the field as land may need a little more time.

Ensure the seedbed provides good seed-soil contact. This will assist with germination, rapid root establishment and plant anchorage. Prepare the seedbed to a depth of 5-7 cm with a sufficient smaller fine soil particles (<3 mm) around the seed. Consolidation of the seedbed, especially on lighter land, can help improve seed-soil contact.

At drilling, check ALL seed is fully covered and that the drilling depth is correct. Seed should be drilled between 2.0 and 3.0 cm deep. Continue to check regularly as it will vary within fields as well as between each field. Drilling depth should be increased to a maximum of 3.5 cm where conditions become dry. Use clod pushers to remove some of the dry soil if necessary.

Target plant populations

Remember that the target plant population is 100,000/ha and typical establishment is usually between 70-80% of the seed population drilled. Drilling at 1.25 units/ha (on 50 cm row widths) will therefore help achieve the target plant population level where establishment is expected to be 80%.

For crops drilled on 50 cm rows the spacing for 1.25 units/ha is 16 cm.

For crops drilled on 45 cm the spacing target 1.31 units/ha at 17 cm spacing.

Check the calibration settings on your drill and then check your actual in row spacing regularly, especially if soil conditions change.

Plant establishment is frequently lower on headlands and parts of fields where seedbeds are poor. Higher seed rates should be considered in these areas.

New 2017 Seed treatments

There are a number of new seed treatments that have been placed on farm this season. These include the **Germains Xbeet enrich 100** and **KWS EPD** products.

BBROs current position on new seed treatments is that we continue to work on the evaluation of some of these products and particularly to assess the site by season interactions which are often associated with such products. This work needs to be conducted over a minimum of three years to establish consistency in performance. In many cases this work is still in progress and needs to be completed before BBRO can provide an independent conclusion.

If you are trying some of the new products, ensure you have got good traceability of where the treated stocks are located. Use a marker in the field and ensure you have kept the seed label. Alternatively taking a photograph of the seed label in the field at the point they are drilled is useful as on many phones this will also give you the location of the photograph. Try to ensure you have an untreated stock of the same variety ideally drilled alongside the treated stock, or in the same field, to allow a good comparison of performance.

If you are keen to assess any differences you will probably need to assess emergence and then early canopy development to establishment (6-leaf stage) twice a week across the treated areas. A regular photographic record is an easy way of doing this.

As well as different seed-treated seed stocks, aim to keep a record of where different varieties have been planted. This will allow you to identify any differences in emergence, canopy development as well as susceptibility to pest and diseases and ultimately impacts on yield and root quality performance.

Virus Yellows

The mean air temperatures from the reference weather stations for January and February range from 4.4 - 4.6 °C (slightly cooler than 2016) although the potential risk from Virus Yellows infection remains high. However, use of insecticide treated seed (see table) will minimise this risk and protect the crop from significant yield loss. The BBRO will keep you updated on the 2017 aphid migration once the yellow water traps are deployed at the 30 reference sites in early May when the first sugar beet aphids are predicted to arrive.

Table 1 Virus Yellows incidence forecast for 2017/2018 sugar beet crops using mean air temperature from 1 Jan to 28 Feb

Factory area	Option	Virus Yellows (%) on Sowing Dates			Usage of pesticide-treated seeds	Mean temperature
		15 March	30 March	15 April		
Bury	Without pest management	17.7	23.9	35.2	-	4.66°C
	With pesticide-treated seeds	0.73	0.82	0.97	99.52%	
Cantley	Without pest management	14.5	19.8	29.5	-	4.50°C
	With pesticide-treated seeds	0.62	0.71	0.83	99.25%	
Wissington	Without pest management	17.7	23.9	35.2	-	4.66°C
	With pesticide-treated seeds	0.73	0.82	0.97	98.00%	
Newark	Without pest management	19.8	28.3	43.3	-	4.46°C
	With pesticide-treated seeds	0.51	0.58	0.69	99.40%	

On Farm hygiene

To minimise the risk of yield losses this season from pests and diseases please ensure that all root remnants are destroyed and cleaner loader sites removed as demonstrated from this recent photograph taken in East Anglia!

Fertiliser application

Application of nitrogen should be timed to ensure there is sufficient N to support rapid seedling growth and early canopy development. This requires 30-50 kg/ha of fertiliser N to be applied at, or as soon as possible after drilling and the remainder at full emergence. Some growers are choosing to apply all the fertiliser at drilling and although there have been no reported cases of fertiliser damage this is a potential risk, especially where the fertiliser comes into contact with the seed. BBRO is undertaking trials to assess these risks to provide further guidance.

If placing fertiliser, aim to place the fertiliser 5-10 cm to the side and below the seed. Again, check that the fertiliser, especially liquid fertiliser, is not too close to the seed where it may impair germination.

BBRO has an on-going programme of work assessing the benefits of fertiliser placement. Previous work by the Nordic Beet Research organisation has shown small but consistent yield increases where fertiliser has been placed. The response is dependent on soil moisture and is considered to be due to increased N uptake efficiency by plants.

Caution: *this information is based on results of experiments and experience but cannot constitute a recommendation.*

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