British Beet BBRO Research Organisation

Advisory Bulletin

IN BRIEF

- After a delayed start, drilling has eventually started on lighter land. More bodied land remains wet at depth and will need longer before drilling can commence.
- Last chance to check drill calibration settings. Accurate and uniform plant population is key to optimising yields. Consider using BBRO to a perform a drill test. This is a new service.
- On-farm hygiene. Spoil heaps and soil & crop debris under cleaner loaders and around clamps can all act as sources of pest & diseases and should be destroyed and removed.
- The 2018 forecast is now available and is lower than last year although the risk of virus yellows infection will increase with later sowings. Use of seed treatments will protect against virus-carrying aphids, leaf miners and soil pests on farm.

ADVISORY

Seedbed conditions

Whilst drilling is later than usual, ensuring seed goes into well prepared seedbeds with adequate moisture and sufficient tilth for seed-soil contact is key. Some warm conditions will soon encourage rapid emergence. Remember that in 2017 there were some very cold and dry conditions in April but warmth and rain in May and June resulted in very rapid canopy growth and created the platform for large yields.

With prolonged periods of wet weather soils are unable to dry to depth. The temptation is to start drill at the earliest opportunity, but it is important to check cultivation work isn't causing unseen damage beneath the surface. Get the spade out and check soil conditions at depth before cultivating. Equally important is:

- Keep drilling tractor weight to a minimum
- Reduce tyre pressures where possible
- Consider a coarser seedbed surface when drilling between rain showers

If testing different cultivation techniques such as plough vs plough and press (see photo to right) remember to mark up in the field so you assess any benefits at a later date.

Before drilling, set all units to drill the same depth. Seed should be placed into moist soil, ideally drilled between 2.0 and 3.0cm. Check drilling depth regularly as it will vary within field and between each field. Drilling depth should be increased where conditions are dry to a maximum depth of 3.5cm.

Drill testing

BBRO are operating an infield drill testing service this season. Please contact your BS Area Manager if you would like to arrange this.

The test will cover the following:

- Monitor seed population
- Assess drilling depth & moisture levels
- Monitor & benchmark row unit performance

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 a higher seed rate such as 1.25units/ha on 50 cm rows widths will therefore help compensate for losses and achieve the target plant population level where establishment is expected to be 80%.

The 'Establishment' tables identify the recommended spacing and seed rates for 50cm and 45 cm rows. It is important to base this on your expected establishment figure, typically 70-80%. Plant establishment is usually lower on headlands and parts of fields where seedbeds are poor. Higher seed rates should be considered in these areas. Fields prone to capping or wind erosion may also be candidates for a higher seed rate.

The tables are based on spacing to the nearest cm. In our last Bulletin we recommended different seed rates for 45 cm and 50 cm. Apologies for any confusion, especially if you drill at fractions of a cm. If you need any help please contact us for support,

Drilling at 1.25 units/ha requires a spacing of 16 cm on 50 cm row widths and 17.7 cm on 45 cm row widths. If you drill at 17cm on 45cm row width you will require a seed rate of 1.31units/ha.

Establishment - 000's plant/ha based on 50cm row widths							
Seed spacing cm	14	15	16	17	18	19	20
Seed units/ha (one unit = 100,000 seeds)	1.43	1.33	**1.25**	1.18	1.11	1.05	1.00
90%	129	120	113	106	**100**	**95**	90
80%	114	107	**100**	94	89	84	80
70%	**100**	93	88	82	78	74	70
60%	86	80	75	71	67	63	60
50%	71	67	63	59	56	53	50
40%	57	53	50	47	44	42	40

Establishment - 000's plant/ha based on 45cm row widths								
Seed spacing cm	14	15	16	17	18	19	20	21
Seed units/ha (one unit = 100,000 seeds)	1.59	1.48	1.39	**1.31**	1.23	1.17	1.11	1.06
90%	143	133	125	118	110	**105**	**100**	**95**
80%	127	118	111	**105**	**98**	94	89	85
70%	111	**104**	**97**	92	86	82	78	74
60%	**95**	88	83	79	74	70	67	64
50%	79	74	69	65	61	58	55	53
40%	64	59	56	52	49	47	44	42

Plant populations above optimal requirements that can still produce maximum yields but not maximum profit.

Optimum plant populations (within 5% of 100,000 plants/ha).

Plant populations below optimal requirements that may not produce maximum yields.

'Know where your different varieties are drilled in 2018'

Aim to identify where different varieties have been drilled by placing markers in the soil or using a phone or other GPS systems to locate where they are. This is important, allowing different varieties to be checked:

- For herbicide application. Differences between varieties in terms of growth stages and susceptibility to herbicide damage can be important. For different product and product mixes, the minimum beet crop growth stage must be either, expanded cotyledon, first pair of true leaves (at least 1 cm long) to first true leave fully expanded to two true leaves. A full list of minimum beet growth stages is available in the BBRO Reference Book which can also be found on the BBRO website www.bbro.co.uk/publications. Remember that soils and weather conditions are also important in determining the risk of herbicide damage.
- Identifying any potential emergence issues.

Crop Hygiene

It is likely that there are number of spoils heaps such as those below still on farm, following the 2017/18 campaign. With the new crops now being drilled, leaf growth on these may act as a source and reservoir of pests and diseases. Therefore, it is essential to clear these and destroy any remaining heaps as soon as possible.

Virus Yellows Forecast

The very cold end to February has led to the overall mean temperature across the sugar beet factories to be around one degree colder in January and February than last year. Consequently, the 2018 Virus Yellows forecast (Table x) is lower than that in 2017 and we do not anticipate the arrival of the first winged peach potato aphids until May or even early June, depending on location. However, the use of seed treatments will ensure that the crop is protected against the threat of virus yellows infection, leaf miners and soil pests.

Virus Yellows incidence forecast using mean air temperatures from 1 Jan to 28 Feb 2018

Factory area	Option	Virus Yellows (%) on Sowing Dates of			Usage of pesticide-treated seeds	Mean temperature
		15 March	30 March	15 April		
Bury	Without pest management	4.81	6.51	9.81	-	3.59°C
	With pest management	0.25	0.29	0.34	99.74%	
Cantley	Without pest management	4.81	6.51	9.81	-	3.59°C
	With pest management	0.26	0.29	0.34	99.32%	
Wissy	Without pest management	4.81	6.51	9.81	-	3.59°C
	With pest management	0.25	0.29	0.34	99.58%	
Newark	Without pest management	2.84	4.04	6.54	-	3.10°C
	With pest management	0.11	0.13	0.15	99.42%	

EVENTS

Beet Yield Competition.

Applications are now invited for the 2018 BYC competition. For further info please visit our website https://bbro.co.uk/on-farm/beet-yield-competition/

Summer Open Days.

Plans are proceeding for the BBRO Summer Open Days, with lots of opportunities to see our trials in progress and speak directly to the research team and view the RL varieties for 2019.

3rd July – Swanton Morley Farm, near Dereham. Norfolk.
5 th July – Bracebridge, Lincs. Invites will be released in May.

CONTACTS

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BASIS POINTS

Two BASIS points in total (not per bulletin) have been allocated for the period between 01/06/17 and 31/05/18 reference CP/59324/1718/g. To claim these points please email michele@basis-reg.co.uk