



**SUGAR BEET DRILL
MAINTENANCE AND TESTING
2017/18**



DRILLING FOR BETTER ESTABLISHMENT AND IMPROVED CROP PERFORMANCE

A successful sugar beet harvest begins with the preparation of the seed bed and ensuring optimum performance of both drill and operator. Good crop establishment helps to produce healthy uniform plants, improving yield and profitability.

The course is open to all sugar beet drill operators and contractors, providing the basic principles of drill set-up for all models.

SESSIONS TO INCLUDE:

- Practical soil management.
- Cultivation techniques for the perfect seed bed.
- Pelleting and seeds.
- Drill maintenance for optimum performance.

Tuesday 30th January 2018

BBRO, Bexwell,
Downham Market, PE38 9LU

Wednesday 31st January 2018

Riseholme College, Riseholme Park,
Lincoln, LN2 2LG

The course will start 08:30 and come to a close at 13:30. Refreshments will be provided.

For further information or to reserve your place:

email: francesca.broom@bbro.co.uk call: **01603 672172**

or book online at: www.bbro.co.uk/events

Presentations and practical support from **Kverneland**, **Monosem** and **Vaderstad**

CONTENTS

Benefits of Drill Testing	3
Drill Setup Checklist	4
Manufacturers	7
Common Drill Problems	8
Drill Testing Providers	10



British Beet Research Organisation

Innovation Centre, Norwich Research Park, Colney Lane, Norwich, NR4 7GJ
01603 672169 | bbro@bbro.co.uk | www.bbro.co.uk



“ BBRO trials have shown that the target population for maximum yield in UK growing conditions is to establish 100,000 plants on every hectare drilled.”

BENEFITS OF DRILL TESTING

Poorly maintained drills can lead to uneven plant establishment and erratic seed spacing and depth. Therefore, a well maintained drill is essential to achieve an even plant stand to ensure maximum yields.

Having your machine tested in advance of the drilling season will help to minimise in-field breakdowns.

Depending on the make and model of your drill, testing is either carried out at the dealer premises or through an on-farm drill testing service.

The on-farm drill testing service available for some makes provides a comprehensive assessment of the whole drill including a complete mechanical check of the seeding system, seed output test, terminal compatibility check and optional software updates if available.

This booklet contains an in-field checklist for you to follow and a list of known drill testing providers (please note, this is for your convenience only, the BBRO cannot endorse any individual company listed).

**SUGAR BEET PRECISIONS DRILLS REQUIRE REGULAR
MAINTENANCE FOR OPTIMUM PERFORMANCE**

DRILL SETUP CHECKLIST

SEED SPACING

- Ideal spacing is 15 to 18 cm for 50 cm row widths and 17 to 20cm for 45cm rows. Aim for a minimum of 1.2units/ha, use a higher rate in poor seedbed conditions.
- Seed spacing should be checked regularly whilst drilling adjusting if necessary. Poor seed spacing will be obvious at early stages of establishment, so remember to go back and check you got it right.

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.

- On electric drive drills use a variable seed rate if soil conditions vary across the field when drilling.
- It is essential to match row widths with those of the harvester and ensure the spacing between each row is the same width.
- Record the variety being drilled. It may be helpful in determining seed choice in future.
- Check any sensors are clean, use a soft brush to remove any debris.

DRILL MARKERS

- If using mechanical markers, it is good practice to carry out a few dry runs before drilling commences to ensure accuracy of the bout joins are correct. If using GPS marking the same procedure is necessary.
- Check all electronics are working correctly including tramlining markers.

DRILLING DEPTH

- Before drilling starts, set all units to the same depth. Seed should be placed into moist soil, ideally drilled between 2.0 and 3.0 cm deep. Check drilling depth regularly as it will vary within fields as well as between each field.
- Drilling depth should be increased where conditions are dry to a maximum of 3.5 cm. Use clod pushers to remove some of the dry soil if necessary.
- Ensure that all seed is well covered to help avoid mouse damage.

CLOD PUSHERS

- In dry soil conditions increase penetration depth and soil movement by adding extra weights or adjusting the depth control.
- If conditions are damp, reduce soil movement by decreasing soil depth or totally remove from soil.

DRILL HOPPERS

- Check that each hopper is filled with an equal amount of seed.
- Spin the wheels or use the electric drive on headlands to check all units are working correctly.

SOIL COVERERS

- Soil coverers may need to be adjusted to throw more or less soil depending on conditions.
- Regularly check that none have become damaged. The intermediate wheels also aid seed cover but can pick up and dislodge seed in wet conditions.

DRILLING SPEED

- Optimum drilling speed is between 5 and 8 kph (3 to 5 mph). Check the manufacturer's handbook for the drill's optimum speed in relation to the cell wheel or seed disc fitted to your drill.

INTERMEDIATE PRESS WHEELS

- Use intermediate press wheels only in dry conditions where they will aid consolidation of soil around seed.
- If they are used in damp conditions they can pick up seeds and flick them out of the furrow.

MANUFACTURERS



Monopill | Monopill SE

Kverneland UK, Walkers Lane, St Helens,
Merseyside, WA9 4AF
t: 01744 853200



Distributed by **TOUCAN**
FARM MACHINERY LTD

Meca 3 | Meca V4 | Meca 2000
NG Plus | NC Technic

Monosem, Toucan Farm Machinery Ltd,
Parker Drive, Fakenham,
Norfolk, NR21 8HW
t: 01328 258010



Unicorn S | Unicorn SD
Synchro Drive

Vicon, Walkers Lane, St Helens,
Merseyside, WA9 4AF
t: 01744 853200



Rallye | Webb | Seleкта

Stanhay Webb, BCS House, Pinfold Road,
Bourne, PE10 9HT
t: 08451 801 480



Tempo TPT6

Vaderstad Ltd, Unit One, Ellesmere
Business Park, Grantham,
Lincolnshire, NG31 7XT
t: 01476 581900



Becker | Centra | Centra 2000
Aeromat

Kongskilde U.K. Ltd, Hempstead Road,
Holt, Norfolk, NR25 6EE
t: 01263 713291



AMAZONE

ED | Contour

Amazone Ltd, Blyth Road, Harworth,
Doncaster, South Yorkshire, DN11 8NE
t: 01302 751200



Maestro CC

HORSCH UK Limited, Spalding Road,
Bourne, PE10 0AU
t: 01778 426987



“ BBRO recommends drill testing as an integral part of sugar beet management. It is vitally important to replace any worn parts. Wear and tear will impact on seed placement, plant establishment and ultimately yield returns.”

COMMON DRILL PROBLEMS

COULTERS

Sugar beet drill coulters, in common with other soil engaging components, can suffer severe wear because they tend to be softer than the abrasive particles in the soil.

Continued use of the worn coulters can lead to poor harrow formation, inconsistency of depth and seed placement, ultimately leading to poor yields.



The profile of a worn coulters against the template of a new part can be clearly seen.

DISCS

Disc wear can cause more than one seed to be picked up at a time resulting in seed damage and poor plant population.



This photo shows excessive wear to the disc. The shoulder of the pin should not go straight through as shown. This type of wear can cause damage to seed and result in more than one seed being placed in the soil.



The results of this type of disc wear can be seen when clearly when checking the disc on the test rig. **Doubles, missed seed or uneven spacing will be visible.**



The drill unit in place on the test rig to check cell fill and seed spacing.



Testing each unit helps to ensure good placement in the field.

DRILL TESTING PROVIDERS

***Ben Burgess**, Aylsham Ind Estate, Dunkirk, Aylsham, Norfolk, NR11 6SU

Ben Burgess, Eldernell Lane, Coates, Peterborough, Cambs, PE7 2DD

Ben Burgess, Brook Farm, Ellington, Huntingdon, Cambs, PE28 0AE

Ben Burgess, Windmill Hill, Exning, Newmarket, Suffolk, CB8 7NP

Ben Burgess, Dereham Road, Beeston, Kings Lynn, Norfolk, PE32 2LE

Ben Burgess, Europa Way, Martineau Lane, Norwich, Norfolk, NR1 2EN

B W Mack Machinery, Barroway Drove, Downham, Norfolk, PE38 0AL

***Chandlers (Farm Equipment) Ltd**, High Road, Whaplode, Spalding, Lincs, PE12 6NT

Chandlers (Farm Equipment) Ltd, Station Road, Barnack, Stamford, Lincs, PE9 3DW

Chandlers (Farm Equipment) Ltd, Main Road, Belton, Grantham, Lincs, NG32 2LX

Chandlers (Farm Equipment) Ltd, Boston Road, Horncastle, Lincs, LN9 6JN

Chandlers (Farm Equipment) Ltd, Boston Road, Spilsby, Lincs, PE23 5HQ

Chandlers (Farm Equipment) Ltd, Arkwright Hill Ind. Park, Lutterworth Road, Cosby, Leics, LE9 1RH

Ernest Doe Power, 66 Holt Road, Fakenham, Norfolk, NR21 8DY

Ernest Doe & Sons Ltd, Stanford Tuck Road, Lyngate Ind Estate, North Walsham, Norfolk, NR28 0TY

Farmstar Ltd, Bridge Street, Brigg, North Linc, DN20 8NF

Farmstar Ltd, Becklands Park Ind Estate, York Road, Market Weighton, York, YO43 3GA

Farmstar Ltd, Grove Farm, Church Lane, Marr, Doncaster, DN5 7AU

Farmstar Ltd, Hawton Lane, New Balderton, Newark, Notts, NG24 3BU

***G & J Peck**, Lisle Lane, Ely, Cambs, CB7 4PU

G & J Peck, 456A Herne Road, Ramsey St Marys, Cambs, PE26 2TJ

G & J Peck, Elsoms Way, Wardentree Park, Pinchbeck, Spalding, Lincs, PE11 3JG

G & J Peck, Main Street, Mareham Le Fen, Boston, Lincs, PE22 7QW

G & J Peck, Yaxham Road Industrial Estate, Greens Road, Dereham, Norfolk, NR20 3TG

Garford Farm Machinery, Frognall, Deeping St James, Peterborough, Cambs, PE6 8RP

Irelands Farm Machinery, Medlam Yard, Carrington, Lincs, PE22 7LU

***Irelands Farm Machinery**, Wigtown Road, Sutterton, Lincs, PE20 2EL



01263 734311		✓		
01733 840777		✓		
01480 890990		✓		
01638 577877		✓		
01328 701347		✓		
01603 628251		✓		
01366 324256				✓
01406 370789		✓		
01780 740000		✓		
01476 590077		✓		
01507 527211		✓		
01790 753467		✓		
01455 201790		✓		
01328 855611				✓
01692 405121			✓	
01652 654944	✓			
01430 875900	✓			
01302 786786	✓			
01636 671628	✓			
01353 664515		✓	✓	
01733 844642		✓	✓	
01775 724343		✓		
01507 568484		✓		
01362 698698		✓		
01778 342642				✓
01205 480460	✓			✓
01205 460600	✓			✓

DRILL TESTING PROVIDERS

***J Squires (Engineers) Ltd**, 61 Millgate, Newark, Notts, NG24 4TU

N Richardson Ltd, The Hanger Dairy, Norwich, Norfolk, NR11 6QZ

P Tuckwell Ltd, Chelmsford Road Ind Estate, Chelmsford Road, Great Dunmow, Essex, CM6 1HD

P Tuckwell Ltd, Ardleigh Hall, Ardleigh, Colchester, Essex, CO7 7LG

***P Tuckwell Ltd**, Shop Street, Worlingworth, Suffolk, IP13 7HU

***Peacock & Binnington**, Old Foundry, Foundry Lane, BRIGG, North Lincs, DN20 8NR

Peacock & Binnington, Grimsby Road, Louth, Lincs, LN11 0SY

Peacock & Binnington, High Steet, Corringham, Gainsborough, Lincs, DN21 5QP

Peacock & Binnington, Unit 9, Oakney Wood Road, Selby Business Park, Selby, YO8 8LZ

Sharmans Agricultural, College Farm, Gonerby Moor, Grantham, Linc, NG32 2AB

Sharmans Agricultural, Stamford Road, Easton on the Hill, Stamford, Lincs, PE9 3NS

Thurlow Nunn Standen Ltd, Wisbech Road, Littleport, Ely, Cambs, CB6 1RA

Thurlow Nunn Standen Ltd, Eagle Iron Works, Creake Road, Sculthorpe, Fakenham, Norfolk, NR21 9NH

Thurlow Nunn Standen Ltd, The Street, Melton, Woodbridge, Suffolk, IP12 1PL

Thurlow Nunn Standen Ltd, Moulton Road, Kennett, Newmarket, Suffolk, CB8 8QT

***Thurlow Nunn Standen Ltd**, Hinderclay Hall, Hinderclay, Diss, Norfolk, IP22 1HN

Thurlow Nunn Standen Ltd, 3 Maurice Gaymer Road, Attleborough, Norfolk, NR17 2QZ

***Main dealers** – Units can be taken to any satellite dealer and will be transported to the main dealer for testing then returned to the original location for collection.



For electric drive drills, dealers offer a full on-farm testing service:

- Complete mechanical check of the seeding system
- Electrical test on motors, sensors etc.
- Seed output test
- Terminal compatibility checks
- Optional software updates

For mechanical drills, units can be taken to your nearest dealer for testing on a 'sticky belt' rig. This calibrates each unit to ensure accurate speed spacing.



Comprehensive service by factory trained technicians, including precise tolerance checks of the seed metering box for wear, and seed output test for performance.



01636 704453			✓	
01603 558014				✓
01371 875751	✓			
01206 230283	✓	✓		
01728 628325		✓		
01652 600200			✓	
01507 353500			✓	
01427 838696			✓	
01757 700699			✓	
01476 562561	✓			
01780 762196	✓			
01353 863038	✓		✓	
01328 862333	✓			
01394 382801	✓			
01638 750322	✓			
01379 890823	✓			
01953 450400	✓			



Comprehensive service checking and calibrating each unit to ensure regular and accurate speed spacing using a 'sticky belt' rig.



For electric drive drills, dealers offer a full on-farm testing service:

- Complete mechanical check of the seeding system
- Electrical test on motors, sensors etc.
- Seed output test
- Terminal compatibility checks
- Optional software updates

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Maximise Your Sugar Beet Crop with Germain's Seed Technologies

Germain's continues to be committed to delivering innovative seed technologies to the UK's Sugar Beet Industry.

Benefits of Xbeet® Seed Technologies:

- 1 Increased tolerance in stressful conditions
- 2 Faster field emergence
- 3 Improved uniformity
- 4 Increased yield potential

Supporting UK Growers

Tessa Seymour

Commercial Development Manager

Dedicated to backing British farming by promoting sustainable and environmentally friendly cultivation practices, Tessa Seymour works directly with UK sugar beet growers in trialing new seed treatments to help increase your yield.

Contact Tessa for more information about our current and future products:


Xbeet®enrich¹⁰⁰

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