

KWS beet varieties for anaerobic digesters and livestock 2018



**SEEDING
THE FUTURE**
SINCE 1856



KWS Energybeet and Feedbeet varieties 2018

The active selection process of key characteristics enables KWS to provide high performing varieties suitable for feeding to anaerobic digesters and livestock. These varieties are bred using the principles of modern sugar beet breeding techniques and offer valuable characteristics specifically suited to the UK market, including:

- High dry matter (DM) yields per ha
- Higher methane / energy yield per ha
- The highest DM contents
- Superior agronomic traits
- Even plant stand for reduced harvest losses

All our varieties are provided with the KWS proprietary seed treatment Early Plant Development (EPD) allowing for a fast and even plant emergence.

This leaflet provides you with information to select the most appropriate variety. If you have any questions or require more details, please don't hesitate to contact me.

Kind regards,

Ben Bishop

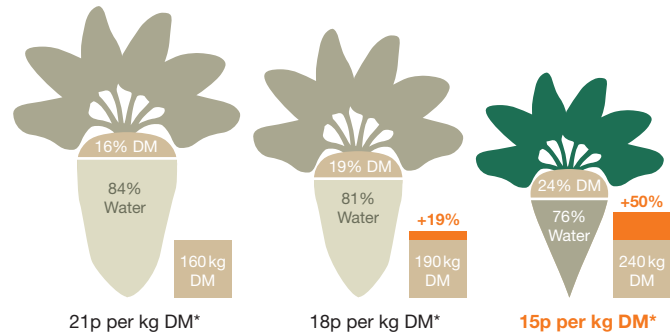
Ben Bishop
Country Manager Sugar Beet UK

The Importance of Dry Matter

Dry matter yield is the key characteristic to assess when selecting a beet variety's suitability for your operation.

Therefore targeting for high DM yields is the primary goal. Varieties providing high DM yields will be able to reduce your feed costs whether it be for biogas or livestock. Choosing a variety with a high DM content enables you to reduce your feed costs from £0.21 to £0.15 per kg DM.

Amount of DM per tonne of fresh weight and production cost



*Assuming 1 tonne of beet valued at £35/t fresh weight

KWS Energy- and Feedbeet produce **up to 50% more DM** yield per tonne of fresh weight than lower DM fodder beet. Why grow water when you can harvest DM?



KWS Feedbeet and Energybeet Portfolio 2018

| Variety Name | Dry Matter Yield (rel.) | Dry Matter Content (%) | Fresh Root Yield (rel.) | Dirt Tare (grams/kg DM) |
|-----------------|-------------------------|------------------------|-------------------------|-------------------------|
| Control result* | 19.2 t/ha | | 84.7 t/ha | |
| GERTY KWS | 100 | 22.73 | 100 | 481 |
| CINDY KWS | 105.6 | 23.78 | 100.9 | 402 |
| BERETTA | 107.6 | 24.54 | 99.6 | 634 |
| ELOQUENTA KWS | 116.4 | 24.65 | 107.3 | 518 |

Source: KWS UK 3 year average trials data; 2015 - 2017

*GERTY KWS is the control

Reducing Dirt Tare

Alongside DM, we recognise the difficulties growers have at harvesting in keeping the soil off their beet and in the field.

An important breeding trait is the production of a **smooth skinned beet** with a **reduced 'root groove'** and as a result, our best variety is CINDY KWS.

You can be confident that with high DM contents and fresh weights our beet varieties are producing the higher DM yields and lower dirt tares you seek for feeding to livestock and to biogas plants.

GERTY KWS

- Seven years in the UK
- High DM yields
- Low dirt tare levels

CINDY KWS

- Very low dirt tares
- Good all round performance
- 23 % DMC

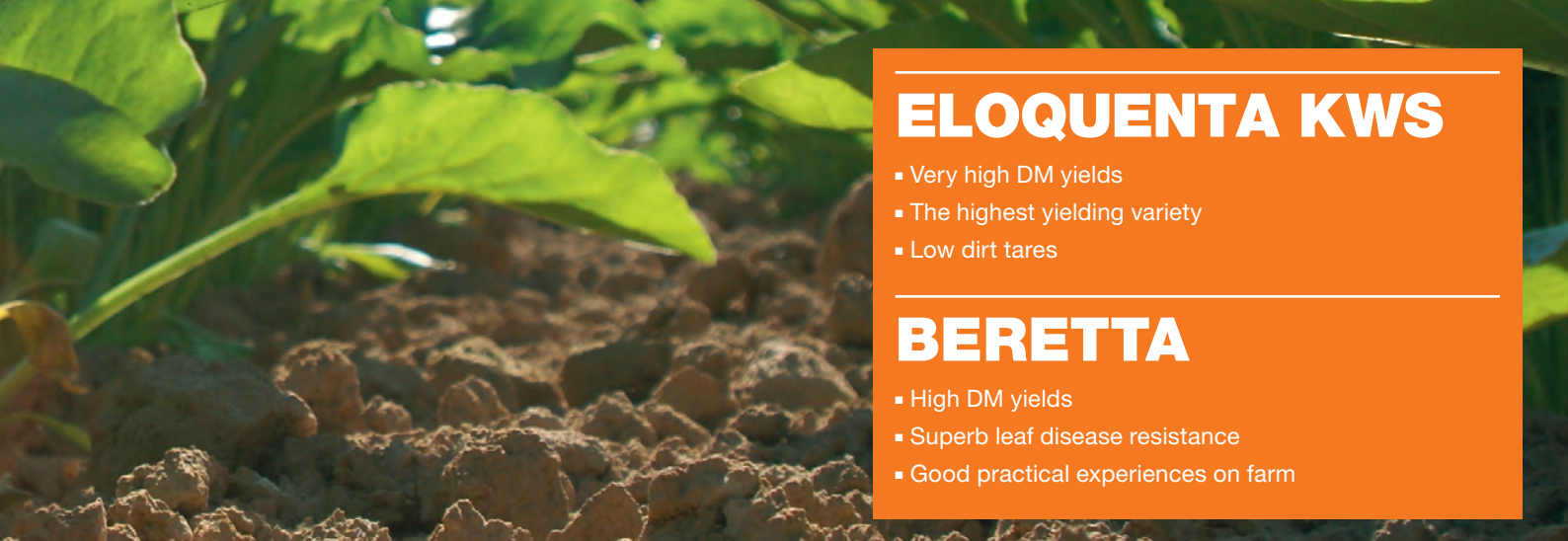


GERTY KWS: The consistent performer

GERTY KWS is the best established Energybeet in the UK and is grown from Inverness to Cornwall. Introduced seven years ago, GERTY KWS combines **high DM yields** with low dirt tares and on the back of its consistency over contrasting seasons it has been widely adopted on farm. GERTY KWS sits slightly higher out of the ground than other varieties and this, combined with its smooth skin, will help to minimise dirt tares on farm. **The corner-stone variety for all UK growers.**

CINDY KWS: For low dirt tares

CINDY KWS is a top performer that has combined high DM yields with the **lowest dirt tare levels of all KWS varieties**. CINDY KWS is perfect for growers who want high yields but especially want to **minimise dirt tare** and reduce the need for cleaning the beet. Very widely grown in Denmark and this is a variety that suits a number of situations, sites and growing conditions and will help balance out the variety selection across your acreage.



ELOQUENTA KWS

- Very high DM yields
- The highest yielding variety
- Low dirt tares

BERETTA

- High DM yields
- Superb leaf disease resistance
- Good practical experiences on farm

ELOQUENTA KWS: The next generation

ELOQUENTA KWS is the next step in our breeding programme designed to bring high dry matter yields which in turn bring high gas yields per ha. Where the biogas operator wants high DM content, high yields and low dirt tare then ELOQUENTA KWS can offer it all.

BERETTA – Feedbeet: A season-long performer

BERETTA is a high yielding beet variety with excellent agronomic traits. Beretta has been widely used since 2012 across the animal feed and biogas sector, providing high DM yields, **excellent field establishment** and very **healthy leaf canopy**. Growers have found that BERETTA maintains its leaf canopy for longer than other varieties making full use of the growing season to pile on some impressive yields.

Drilling Guide 45 cm rows

| Plant Spacings (cm) | Units / ha (1 unit = 100,000 seeds) | Units / ha (1 unit = 50,000 seeds) | Plant Establishment Target based on 45 cm rows – 000's | | | |
|---------------------|-------------------------------------|------------------------------------|--|------|------|------|
| | | | 60 % | 70 % | 80 % | 90 % |
| 15 | 1.5 | 3.0 | 88 | 104 | 118 | 133 |
| 16 | 1.4 | 2.8 | 83 | 97 | 111 | 125 |
| 17 | 1.3 | 2.6 | 79 | 92 | 105 | 118 |
| 18 | 1.25 | 2.5 | 74 | 86 | 98 | 110 |
| 19 | 1.2 | 2.4 | 70 | 82 | 94 | 105 |
| 20 | 1.1 | 2.2 | 67 | 78 | 89 | 100 |
| 21 | 1.05 | 2.1 | 64 | 74 | 85 | 95 |

■ = Optimum plant population (85,000–95,000 plants/ha)



Drilling Guide 50 cm rows

| Plant Spacings (cm) | Units / ha (1 unit = 100,000 seeds) | Units / ha (1 unit = 50,000 seeds) | Plant Establishment Target based on 50 cm rows – 000's | | | |
|---------------------|-------------------------------------|------------------------------------|--|------|------|------|
| | | | 60 % | 70 % | 80 % | 90 % |
| 15 | 1.3 | 2.6 | 80 | 93 | 107 | 120 |
| 16 | 1.25 | 2.5 | 75 | 88 | 100 | 113 |
| 17 | 1.2 | 2.4 | 71 | 82 | 94 | 106 |
| 18 | 1.1 | 2.2 | 67 | 78 | 89 | 100 |
| 19 | 1.05 | 2.1 | 63 | 74 | 84 | 95 |
| 20 | 1 | 2 | 60 | 70 | 80 | 90 |
| 21 | 0.95 | 1.9 | 57 | 67 | 76 | 86 |

■ = Optimum plant population (85,000–95,000 plants/ha)

For further technical advice please see our website:
www.kws-uk.com/feedbeet/agronomics



Early Plant Development (EPD)

Backing our better field agronomics, all of our KWS Energybeet and Feedbeet varieties will come with the KWS proprietary seed activation treatment, EPD.

This will:

- Increase the speed of germination
- Provide earlier emergence and boosting establishment
- Ensures more even plant stands
- Contribute to higher yields



Seed Packaging

| Variety | Type | EPD Treated | Insecticide | Unit Size |
|---------------|------------|-------------|--------------------|------------------------|
| ELOQUENTA KWS | ENERGYBEET | Yes | CRUISER FORCE | 1 unit = 100,000 seeds |
| GERTY KWS | ENERGYBEET | Yes | CRUISER FORCE | 1 unit = 100,000 seeds |
| CINDY KWS | ENERGYBEET | Yes | CRUISER FORCE | 1 unit = 100,000 seeds |
| BERETTA | FEEDBEET | Yes | Standard or Gaucho | 1 unit = 50,000 seeds |

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