

# myKWS MAIZE

NEWSLETTER | ISSUE 7 | SPRING 2021

SEEDING  
THE FUTURE  
SINCE 1856



PAGE 3

## Agronomy Tips

Advice and considerations for: fertiliser; row spacing and seed rates; drilling depth

PAGES 4-5

## Sowing Maize with Runner Beans

A novel concept that we'll be trialling this year

PAGE 6

## Avitus KWS

All the facts and figures for this early variety

PAGE 7

## KWS Pasco

Suitable for forage or biogas and ideal for corn cob mix or beef finishing rations

# Hello...

...and welcome to the seventh issue of the myKWS quarterly newsletter. Our series aims to provide you with relevant and timely advice and information about how to get the best out of your maize crop.

In this issue, we cover the latest agronomy tips, including seedbed preparation and fertiliser. We also offer you a glimpse of the future, setting out our novel trial project for the coming season; a mixture of maize and runner beans will be planted at our demonstration site in Lydney, Gloucestershire. Watch this space to follow its progress. We also have a focus on one of our flagship varieties, Avitus, which includes comments from a farmer and an agronomist, as well as highlighting a new one for next year.



Please scan this QR code to sign up for future issues.

## MAIZE FOLLOWING TWO YEAR-PLUS GRASS LEYS

Growers who traditionally follow two year-plus grass leys with maize will be affected by the ban imposed on the wireworm seed treatment, Sonido. Dursban has also been withdrawn, leaving few other weapons in the armoury.

Two choices are available to combat wireworm and one is Force 20CS. It is not as effective as Sonido, as well as being quite expensive and difficult to handle. In addition, the product tends to crystallise during seed treatment and it is hard to achieve an even application. For all these reasons, we will not be using it on KWS maize seed.

The other option is to adopt a cultural approach. It would involve sowing winter wheat or winter barley for at least two consecutive years prior to maize planting. The grass is ploughed up in early spring, which allows the insects to feed in the summer, and an autumn cereal that has been treated with Signal (cypermethrin) will follow. The extra expense of the Signal treatment will add a cost of about £100/tonne of seed, but it will kill off the wireworm in large numbers. **E**

### ? DID YOU KNOW?

The KWS breeding programme has produced some tremendous varieties in recent times. These push the boundaries of dry matter and starch yields. Our focus for the past several years is to ensure that the new varieties have excellent standing power and we have been highly successful in this goal.

## COMMENT

# MAIZE UNDER SOWING

JOHN BURGESS, KWS

We are increasingly getting enquiries from growers who may be interested in under-sowing maize with grass.

KWS has worked on projects with machinery manufacturer, Vaderstad, in the past and it would be interesting to see future modifications to enable maize seed and grass seed to be sown in one pass. This would be welcome as a way of reducing establishment costs. As I understand it, it will not be available for the coming season, but it does reflect burgeoning demand for the service. **E**



# AGRONOMY TIPS

JOHN BURGESS, KWS



**The 2020/21 winter saw heavy rainfall and we have had a very slow start to the growing year. Some land has been flooded and water-logging has been extensive. In general,**

**maize is a fairly tolerant crop but seed and seedlings must be sown into a friable, well-oxygenated soil if plants are to reach their potential at harvest time.**

Another consideration is the damage to soil structure by travelling the land before conditions are right. I would urge all growers to exercise patience at sowing time. Waiting until conditions are right really will pay off in the long term.

## FERTILISER

**Nitrogen** – The legal N-Max is 150kgs/ha and this is normally adequate for maize. Growers who sow ultra-early and early varieties could cut the rate to 130kgs/ha if they have been planted late, because the growing season will be too short for maximum rate take-up.

**Phosphate** – The recommended DAP requirement is 125kgs/ha. Growers who apply poultry manure, which is rich in P, could reduce the rate to 100kgs/ha.

**Potash** – Once again, the autumn proved tricky for ground operations in many regions. Those who applied potash last year were fortunate, because only a narrow window of opportunity will be available for this spring. Timings will be delayed in some cases and this is a cause for concern. Potash is an essential maize nutrient, because crops will not reach their potential unless the soil index meets the target of index 2-plus. The general recommended potash application rate is 250-275kgs/ha.

## ROW SPACING & SEED RATES

### Pros and Cons (50cms and 75cms row widths)

Research has shown that row spacing manipulation can affect dry matter and starch yields. Closer row spacings result in a denser crop which produces slightly higher freshweight yields, with minimal starch dilution.

It is best adopted on favourable sites. These denser crops tend to dry-down more rapidly, compared with crops sown at the standard 75cms row width figure. I would warn against the production of excess plant numbers, because it can lead to lodging.

## Seed Rate Table

Standard rates based on the desired plant population (assuming 5% field losses)

Plants/ha (acre)	Units <sup>a</sup> /ha (acre)	Deposition distance (cm)	
		at 75cm (30")	at 50cm (20")
85,000 (34,000)	1.8 (0.72)	14.9	22.4
90,000 (36,000)	1.9 (0.76)	14.1	21.2
95,000 (38,000)	2.0 (0.81)	13.3	20.1
100,000 (40,000)	2.1 (0.85)	12.7	19.0
105,000 (42,000)	2.2 (0.89)	12.1	18.1
110,000 (44,500)	2.3 (0.93)	11.5	17.3
115,000 (46,500)	2.4 (0.98)	11.0	16.6

1 unit = 50,000 seeds

## DRILLING DEPTH

The withdrawal of the seed treatment Mesuro (methiocarb), which had a bird deterrent action, prompted us to launch our own Initio Bird Protect (IBP) seed treatment. It was used extensively across our variety portfolio last season and feedback has been very positive. IBP has proved to be highly effective in preventing bird damage to maize crops. It also contains key nutrients to help the young seedling get off to a good start.

### Drilling Depth Recommendations

Early to mid-season (April to early May)	3-5 cms
Mid-season (early May onward)	5-7cms
Late (mid-May onward)	7-9 cms max

## SOIL TEMPERATURE

**The figure must exceed 10°C for five consecutive days before sowing. This should be adjusted to 8°C for light soils and 12°C for heavy soils.**

We have taken some of the hard work out of assessing soil temperature by offering all growers the free use of our online soil temperature tool (see insert). You do not have to have purchased KWS seed to be able to use the service.

## AN IDEA FOR THE FUTURE

# SOWING MAIZE WITH

JOHN BURGESS, KWS

This year, we will be trialling a combination of maize and runner bean seed at our HQ in Gloucestershire – look out for progress results in our forthcoming myKWS newsletters. It's a novel concept, but we think it holds several potential benefits for growers; the system is successful in Germany and Switzerland. Our system is not commercially available in the UK at present, but if there is enough grower interest we may launch it for the 2022 season; it would be available as a pre-mix, also known as a mixed unit.

### BENEFITS

#### Forage

Can increase crop protein content (by up to 2% compared with standard maize silage)

#### Biogas and Forage

- Can extend crop rotation (enhances disease control)
- Helps to suppress weeds
- Improves biodiversity



### WHAT'S IT ALL ABOUT?

#### Protein

Combining maize and runner bean seed in a single sowing can increase forage protein content by up to 2%, compared with standard maize silage.

#### Extends rotation/disease control

Previous research indicates that a maize/runner bean combination can reduce disease incidence

and therefore offers a potential opportunity to extend the rotation.

#### Weed suppression

The beans give better soil shading, which can help to reduce overall crop weed pressure.

#### Improved biodiversity

Unlike maize plants, beans are pollinators and insects like bees benefit from the flowers. Growing two crops in one field improves biodiversity and may help growers to comply with future support schemes. The seed mix system is popular in Germany, for example, as farmers are offered a protein subsidy for which beans qualify. Similar support was previously given to UK growers, but it was withdrawn in the 1990s. The increased focus on environmentally-friendly production could see its reintroduction in this country.

### HOW'S IT DONE?

#### Seed Mix

The mix contains one third beans and two thirds maize seed, to give a target four runner bean plants and eight maize plants per square metre. As with standard maize crops, the soil temperature should be on a rising plane before drilling. No special kit is required and the beans do not need a seed treatment. The mix can be used with either 50cms or 75cms row spacings, along with standard seed rates.

#### Weed Control

Herbicides should be applied in the pre-emergence stage at a maximum of five days post-sowing at the maximum rate. A post-emergence treatment cannot

# RUNNER BEANS

not be used as the beans are susceptible, so further weed control should be limited to mechanical operations. Maize plants typically show aggressive growth in early summer and the risk of the crop being shaded by the beans is minimal.

## Harvest Tips

Beans have a lower dry matter content of 20%, compared with maize. Therefore the combination crop will need a good level of maturity before cutting. The ensiling process is not affected.

## HOW TO SELECT SUITABLE MAIZE VARIETIES

Maize varieties must have good stability, so they can bear the weight of the bean crop. However enhanced standing power has been a main focus of the KWS breeding programme in recent years and there is a wide range of varieties across all maturity ratings that are suitable for the mixed species system. One example would be KWS Exelon, which is a stand-out variety in the portfolio. It has an average yield of 19.4 tonnes/DM/ha and a starch content of 34%-plus. If we decide to launch our maize/runner bean system commercially in the UK, the mix options will include top-performing varieties of both plant species.

## ENERGY DENSITY

Because beans are included at a relatively low rate, there will be little effect on crop energy content. Another relevant factor is that the number of plants – and therefore cobs – is lower overall. This will allow greater light interception for individual cobs, with the result that their raised energy content should make up for the slight starch deficit in beans. A further point is that maize has a high harvest index, with a cob to plant ratio of 55% and 45% respectively. Beans have a much lower harvest ratio and are included at a low rate, so their properties will have negligible influence on the final crop analysis.

## CONCLUSION

The concept of mixing maize and bean seed is not new; in fact it is more than a century old. The idea has been taken forward by KWS plant breeder, Dr Walter Schmidt, who has travelled the world looking at inter-cropping in many different countries. His theory is that the progression of intensive farming methods in Europe has excluded some systems that have been continued further afield. They could be useful to meet the demands being placed on European agriculture today.

The environmental benefits of the maize/bean mix will be attractive to many growers and its appeal may be even greater in the future, depending on how the environmental schemes progress. Biogas growers are looking for high yields as a priority and I predict that they will use the mix as a small percentage of the total maize crop.

Some will accept a minor yield penalty which will have little overall effect and the rotational advantages can be significant. Meanwhile, the mixed forage is still an excellent feed for livestock. The only downside is the limited opportunity to apply herbicides, although a judicious application of a pre-emergence product should be sufficient. 📌



Dr Walter Schmidt

# AVITUS KWS



## FACTS & FIGURES...



### Suitable for forage or biogas...

Early variety	FAO 160/170
---------------	-------------

DM yield	18.3t/ha
----------	----------

Starch	35.1%
--------	-------

ME	11.83 MJ/Kg
----	-------------



David Cobb



Ben Lowe

**“A tremendous early-maturing variety; matching the yield performance of later types, while shaving a potential two to three weeks off harvest dates.”**

That is how Agrii’s Dorian Jones describes one of KWS’ flagship varieties, Avitus.

His claims are backed up by award-winning milk producer, David Cobb, who harvested 220ha of Avitus last year to feed his 13,000-litre ‘Chalclyffe’ Holstein herd near Poole in Dorset. The maize produced a 13.t/DM/ha crop within a growing

period of just five months in 2020, allowing him to follow harvest with a winter cover mix of ryegrasses. This double-cropping method boosted grass silage stocks by an additional 3.5t/ha/DM.

Mr Jones stresses that early hybrids like Avitus require a shorter growing season, compared with mainstream types. They can be planted in a range of sowing windows, but will mature ahead of their rivals. In the past, these qualities have incurred a small yield penalty, but Avitus has “well and truly broken the mould,” he says.

“Some growers opt for a slightly later-maturing variety in order to pursue high yields, but we have had some very wet autumns which have made

harvest extremely challenging. In a minority of cases, fields have had to be written off.

“In addition, environmental concerns like soil structure damage have also made farmers increasingly averse to cutting maize beyond around late-October. Early harvesting also allows for a second crop to be sown and as Mr Cobb has found, this comes with a considerable number of advantages. Growers are looking to widen their options and a bonus crop of cereals, grass or forage rye can fit the bill.”

In 2020, Agrii national forage product manager, Ben Lowe, kept a close eye on Avitus and other maize varieties growing across the UK and near his base at Shrewsbury in Shropshire.

“Most Cheshire and Shropshire areas are not truly classed as favourable,” he comments. “Maize would normally be cut around mid-October in general, but clients with Avitus in the ground started harvesting as early as the end of September. The weather then closed in and brought progress to a halt, but the Avitus suffered no ill effects and was still cut earlier than its rivals, with yields living up to expectations.

“Avitus reaches what I call ‘true maturity’ naturally, which means that it reaches the optimum dry

matter figure due to its own genetic capability. Conversely, some varieties get to the point where they simply die. This situation can be tricky, especially if the contractor is not immediately available or the weather breaks, because the crop will not perform to its potential once it has passed the point of optimum maturity and quality will be very significantly reduced.

“Avitus stands out from the crowd because it demands no compromise, producing unrivalled yields in the early segment. It made the official forage maize descriptive list for 2019 and not only did it join as one of the three highest-yielding first choice varieties for favourable sites, it also came well within the top 10 for less favourable sites.

This is a very uncommon achievement for a maize variety and it has maintained its position in the top half of these rankings for 2021 sowings.

“The variety has excellent early vigour and it will lay down starch before dry matter. Unsurprisingly, it remains the number one starch yielder of all 30 first choice varieties on the 2021 favourable site list. We continue to see Avitus as the pick of the early variety bunch,” says Mr Lowe. 📍



## KWS PASCO

**Suitable for forage or biogas and ideal for corn cob mix or beef finishing rations**

<b>Early variety</b>	<b>FAO 170/180</b>
<b>DM yield</b>	<b>19.t/ha</b>
<b>Starch</b>	<b>34.3%</b>
<b>ME</b>	<b>11.67 MJ/Kg</b>

“KWS Pasco will be one to watch out for when it is added to the Descriptive List in 2022,” says Mr Lowe. “I am confident that it will be an ideal stable mate for Avitus KWS, having many of the same yield benefits and early maturity qualities.

“Many growers like to spread risk by extending their selection beyond a single variety. This is where Avitus and Pasco, grown side by side, could be a good fit for many farms. I have monitored KWS Pasco in trials and it looks extremely impressive. In my view, it represents the next generation of top-quality hybrids.” 📍

# INITIO BIRD PROTECT

KWS SEED TECHNOLOGIES

## The importance of a good start

**INITIO BIRD PROTECT** seed treatment offers maximum root health and crop safety in maize



### Meet the Team

#### KWS UK LTD – MAIZE

Atwoods Grange  
Station Road  
Woolaston  
Lydney  
Gloucestershire  
GL15 6PN

[www.kws-uk.com](http://www.kws-uk.com)



#### Rob Hunt

Mobile:  
E-mail:

Commercial Director  
+44 (0)7979 290702  
[rob.hunt@kws.com](mailto:rob.hunt@kws.com)



#### John Burgess

Mobile:  
E-mail:

Maize Product Manager  
+44 (0)7766 258264  
[john.burgess@kws.com](mailto:john.burgess@kws.com)



#### John Morgan

Mobile:  
E-mail:

Maize Sales Manager  
+44 (0)7595 562943  
[john.morgan@kws.com](mailto:john.morgan@kws.com)



#### Alison Phipps

Telephone:  
E-mail:

Maize General Enquiries  
+44 (0)1594 528234  
[maize@kws-uk.com](mailto:maize@kws-uk.com)

Follow us on social media and share your stories!



@KWSUKLtd



@KWSUKLtd



@KWSUKLtd



KWS UK Ltd