

Maize is heavily relied upon to maintain the 10,000kg-plus milk yield achieved by the 300 cows on Rob and Phil Godwin's farm. Wendy Short reports.

Maize a vital ingredient on Wiltshire farm



PICTURES: Nigel Goldsmith

The light soil covering thin Cotswold brash at Middle Hill Farm, near Chippenham, Wiltshire, makes the grassland prone to 'burning up', says Rob Goodwin.

Along with his brother Phil, the business milks 300

high-yielding commercial Holstein Friesians. This precludes a reliance on grazed grass to make a significant contribution towards sustaining the high yield target of more than 10,000kg and therefore maize silage is an important dietary ingredient.

It is used at an inclusion rate

of 23kg/head for the high-yielding group, while the diet also contains brewers' grains, home-grown wholecrop cereals, rapemeal, protected rape, molasses and a rumen by-pass fat product.

Sugar beet pulp is included, along with either crimped

wheat or crimped maize, while the maize silage is also fed to the youngstock.

Soya was taken out of

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The high-yielding group gets 23kg/head of maize silage.

the ration five years ago to comply with the milk buyer's requirements.

Rob says: "When the soya was first removed, we struggled for six months to rebalance the diet.

"The successful solution was to use a combination of rapemeal, protected rape and sugar beet. It arrives by wagon in layers and is added to the mix. It has worked so well that we would not return to soya, even if our milk buyer relaxed the rules."

Crimped maize was produced for the first time in 2021 and it will feature again next season.

Crimping

A contractor was brought in to cut the maize for crimping and it was cut at 30% moisture and treated with a biological additive.

Rob says: "Historically we had fed ground maize and it was very successful. It was introduced because we could never persuade cows to eat more than 4kg/head/day of caustic wheat and the rise in energy prices made drying expensive.

"Unfortunately, 2022 was not the right year for making

Farm facts

- ▶▶ The farm has 607 hectares (1,500 acres) of land
- ▶▶ Cows are housed in cubicles and milked twice a day, with calving all year round and a 180-day grazing period
- ▶▶ The region has an average annual rainfall level of 785mm (30.9in)
- ▶▶ The business also has an arable rotation and a large free-range egg enterprise
- ▶▶ High-yielders are trough-fed every day during turnout, with the allowance dictated by grass availability

crimped maize. The spring drought brought increased risk of poor establishment and low yields on the available land.

"It could not be fitted into the rotation this time and instead the fields were sown with grass for silage-making.

"Nevertheless, milking cows performed very well on the crimped maize and it proved extremely palatable.

"It was also fed at 6kg/head/day to the beef finishing cattle. We are looking forward to



Beef cattle receive some maize silage towards the end of finishing.



adding it to the ration for next season.”

The two varieties which have been grown for the past couple of years are KWS Exelon and Severus KWS. KWS Exelon has a dry matter (DM) yield average of 19 tonnes/hectare (7.7t/acre) and an average starch content of 34.1%.

The variety has the potential to carry 20 grain rings and has been bred with a lower ear insertion height to offset the heavy cob weight.

Severus KWS (FAO 170) is an older variety, but it has shown consistently favourable DM yields on-farm and has a high average starch level of 35.1%, with metabolisable energy at 11.51MJ/kg of DM.

Rob has three main criteria when selecting a maize variety.

He says: “First and foremost, the maize needs to be harvested by the first week in October at the latest. We try to avoid cutting in wet conditions and causing compaction.

“It must also be high-yielding, with good starch figures. Exelon has performed well this year in terms of tonnage, but it was slightly later to mature.

“This factor did not make much difference given the sea-

sonal conditions, but the later ripening could possibly have caused problems in a different year. However, I try and work on a five-year average when assessing varieties, because no two seasons are the same.”

The 2021 harvest resulted in a bumper crop, which exceeded 49t-plus/ha (20t-plus/acre).

In 2022, the low rainfall was problematic, but Rob says he is grateful for the farm’s 35.8t/ha (14.5t/acre) average, having heard reports of even lower yields in parts of the country more severely affected by the drought.

In anticipation of potentially low yields, the business purchased 16ha (40 acres) of standing maize from a neighbour, who grows it as a break crop. Yielding 29.6t/ha (10t/acre), it has made up for the shortfall.

Rob says: “Our forage stocks are looking satisfactory and will see us through winter and beyond. That is a relief, because at any one time we may have more than 800 head of cattle on-farm.

Filling

“I had heard some growers say the cobs were not filling adequately, but we did not experience that issue. This year’s maize silage

“We are expecting a fairly high-quality forage because the starch should be more concentrated due to the lower yield average

ROB GODWIN

analysis is not yet available, but we are expecting a fairly high-quality forage because the starch should be more concentrated due to the lower yield average.”

The 2022 maize was drilled on May 1, with the fields receiving ample quantities of farmyard manure and slurry, as well as 125kg/ha (50kg/acre) of chemical nitrogen.

As an experiment, half of the fields were given a micro-granular product ‘down the spout’ and the rest received di-ammonium phosphate.

Rob says: “There was no visible difference between the two

products and the micro-granular fertiliser was less expensive.

“On the better land there would probably be an opportunity to leave out the chemical nitrogen, but it is essential for maximising yields on the poorer soils.”

The farm started using sexed semen in March 2022 for the heifers and first calvers.

The family is working towards improving conception rates for mature cows and the current average calving interval is 395 days.

Another goal is to bring down the average heifer calving age to 24 months. Infra-red motion detection tags are used to enhance fertility performance.

Rob says: “Some 90 females are inseminated with sexed semen annually, as we need 75 dairy replacements and this allows for the odd loss or bull calf.

“If we arrive at a point where too many heifers are coming through, we will probably cull some of the older cows, rather than sell the surplus.”



About 90 females are artificially inseminated to sexed semen to produce herd replacements.

The lower end of the herd is put to an Aberdeen-Angus bull to produce beef for Waitrose, with heifers taken to about 22 months and steers to 25 months. They receive some maize silage towards the end of the finishing period.

Rob says: “The beef cattle finish well off maize silage. It is not really necessary for the heifers, but at the moment we do not have the facilities to split them up into groups according to sex.”

The business is currently facing a number of challenges, he says.

“My brother and I work long hours and we have three full-time staff for the dairy cows at present. Ideally, we would like



Rob Godwin

a fourth team member to help us cope with the workload.

“Another factor is the milk price. Input costs have risen to an alarming degree in recent months and I think we need milk prices to be maintained at 50ppl, although we are always trying to maximise efficiency of production.

“A number of herds in the area have been sold recently. Our intention is to carry on milking cows and continue making small changes which help us to maintain business profitability.”

2021 maize silage

- ▶▶ Dry matter (DM): 31.3%
- ▶▶ Starch: 35.2%
- ▶▶ Metabolisable energy: 11.89MJ/kg of DM
- ▶▶ pH: 3.86