Sustainability and business improvement go hand in hand

Two brothers are striving to improve the efficiency and sustainability of their herd and dairy business, and say they're now in a good position and ahead of their milk processor's requirements.

TEXT PHIL EADES

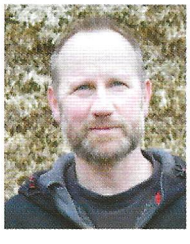
Developing a more sustainable dairying system has been a key driver for brothers Jonathan and James Pickford, who run the 420-strong Picston pedigree herd at Spotacre Farm near Stafford.

"Adopting a more sustainable system and making the most of the resources available on our farm just made sense," says Jonathan. "We made the decision to review everything we do. Producing more on the farm and feeding cows more efficiently were priorities, and the starting point was good soil management to help improve forage production."

Working with nutrition and soils consultant David Lievesley, the Pickfords have focused on improving soil structure and health at their 226-hectare unit, which is primarily down to grass. They also grow 32 hectares of maize annually on tenanted land. All crops are now established using min-till techniques.

"Key to improving the soil is ensuring adequate levels of calcium," says David. "Increasing soil calcium helps improve drainage and plant rooting and makes the soil more aerobic. It also improves the buffering capacity of soils."

Jonathan Pickford:
"Calves 'wean stronger' and 'keep going'"



Soil analysis

Soils and slurry are analysed at least once a year, and slurry is applied with a dribble bar to improve nutrient uptake. "By making better use of slurry, the Pickfords have applied just 23kg/ha of purchased nitrogen each year for the past three years," says David. "They now use calcium ammonium nitrate, rather than straight ammonium nitrate, and foliar humates within the crop protection plans are used with foliar nutrients."

Despite significant reductions to purchased fertiliser inputs, more than 7,000 tonnes of grass silage is made a year and 2022's first cut averaged 30% dry matter and 15% crude protein.

"Our aim is to increase protein production on farm by between 10% and 15% by improving grass leys and utilisation," adds Jonathan. "Every year we sow around

24 hectares with a pea, oat and vetch mix as a lead into reseeding with grass clover leys which will be down for between five and seven years. And herbs are now being added to the seed mixture."

Steps have also been taken to reduce the all-year-round-calving herd's carbon emissions. Milkers are housed all year, with dry cows and youngstock turned out to grass during the spring and summer. The herd is averaging 10,400 litres, at 4.3% fat and 3.3% protein. Concentrate feed rate averages 0.33kg/litre, and the herd averages 31 litres per cow per day.

Sexed semen

The Pickfords rear all their own replacements. Sexed semen is used on heifers, which are all genomically tested, and on some of their best cows, which are selected on £PLI. The aim is to breed the number of heifers required – no more. Rearing animals excess to requirements increases the herd's emissions.

The brothers have also focused on reducing age at first calving, from 27 months to two years. This has also reduced the carbon cost per heifer and the total number of youngstock on the unit. Particular attention is paid to maximising pre-weaning growth rates before heifers are weaned at 10 weeks old.

Calves are teat fed for two weeks before moving on to a robotic feeder. This encourages early rumen development and reduces stress. Jonathan says it is easier to monitor calves to ensure better dry feed intakes at weaning and onwards, and calves 'wean stronger' and 'keep going'.

Heifers are fed silage, straw and concentrate during the housed winter period, and are grazed during the summer and supplemented with 2kg of concentrate feed per day. Age at first services is now 13 months and heat detection has improved since moving onto Sensehub collars, which are fitted to all bulling cattle.

There's also a renewed focus on cow health and this, coupled with better fertility, has seen replacement rate fall from 25% to 19%, further reducing heifer requirements. Jonathan says the heat-detection collars have significantly improved fertility, while reducing the pressure on straw yards, while investing in cubicles with mats has helped reduce the incidence of mastitis. Both developments have also reduced the number of involuntary culls.

David Lievesley adds that the production of good-quality forage has also allowed the Pickfords to make changes to the diet, particularly reducing total protein content, and move away from soya, which is the ingredient seen to cause the most environmental damage. Central to this has been moving to Massey Harpers' Planet feeds, which contain zero soya.

"Eighteen months ago cows were being fed 0.8kg of soya per day, split between the blend and the compound, but now it is down to zero and this has had a significant impact on emissions," he says.

Zero soya

The cows are housed in four groups: fresh cows, high yielders, low yielders, and heifers. They are TMR fed twice a day with compound fed to yield in the parlour. The TMR comprises grass and maize silage, fodder beet and a Planet 22% protein blend. The amount of blend varies between groups. The 'high' TMR supports maintenance plus 25 litres, while the 'low' TMR will support maintenance plus 15 litres. An 18% Planet compound is fed to yield, to a maximum of 8kg per day. The TMR is now formulated to 15.8% crude protein, which is down from 18%.

"Both the blend and compound are formulated with zero soya, which is replaced with protein sources including protected rape, sunflower and prairie meal," explains Massey Feeds' Phil Stirk. "The compound also includes Novatan to improve protein utilisation."

Despite reducing protein and removing soya, herd performance has stayed the same. Yield per cow has remained constant with fresh calvers peaking at 49 litres. Heifers peak at 36 litres, despite reducing age at first calving by six months. Cows hold their condition better, partly due to the lower overall protein in the diet, and this has helped with fertility.

Overall, during the past 18 months, the business has reduced soya use by 108 tonnes per year, cutting its emissions by 324,000kg of carbon. This is equivalent to a saving of 0.08kg per litre of milk produced, and this has had no impact on performance.

"All the changes we've made will help to secure the long-term future of our business," Jonathan adds. "We're improving our soils and producing more from the farm in a sustainable way, allowing us to run our dairy herd more efficiently, cutting emissions through careful ration formulation, and carrying fewer youngstock." |