



Zero grazing: it can allow producers to utilise every single blade of grass they grow

How much land is really needed for profitable milk production?

Overstocked and underpaid?

Whatever your issue is with land – be it availability, price or management problems – you can't produce milk without it.

We asked a few specialists to put some perspective on just how much land is actually needed to produce milk profitably and what's the best way to put the figures on paper into practice.

text **Allison Matthews**

Whether producers graze or house cows, land availability on expanding dairy units is a problem. Until recently quotas were responsible for restricting milk production but, according to Thompsons' dairy specialist James Black, land is the new 'bottleneck'. "With CAP reform making the headlines on a weekly basis, it seems certain that

most producers will have a reduced payment and increased charges on ground rented from non-active producers. There is going to be greater competition for land and, in particular, productive hectares that can be grazed or harvested for grass silage," he says. "This is leaving some producers in a position where they are overstocked for

the land base that they manage," says independent financial consultant Jason McMinn. "The onlooker might suggest to these producers that the best approach is to cut back on cow numbers, but often it's not as simple as that. The average debt per cow can be around £1,600 and many producers have commitments to loans and hire purchase agreements that make it uneconomical to downsize," he adds.

Stocking rates

There are key variables that should be assessed, which will help to identify the best way forward for a producer. "Cow accommodation, milking facilities, grazeable hectares, infrastructure, debt, available labour and cow type all need to be looked at objectively. The answer to the question of how to make the best use of the land available should be



Jason McMinn: "One size does not necessarily fit all"



James Black: "Land is the new 'bottleneck' for many dairy businesses"



Neal Pepper: "Zero grazing allows us to utilise all the grass that we grow"

somewhere within those variables," says Mr Black.

Maximising stocking rates per hectare is something Mr McMinn uses figures to evaluate, but he explains that every unit is unique and one size does not necessarily fit all. "As you move towards housing cows it is possible to increase stocking rates on the available land by 33%. The practical reality of this becomes significant when it is considered that a 150-cow herd can increase to 200 cows on the same land base, assuming that the housing and parlour can cope."

The downside to the housed system is that forage and its quality becomes a greater priority than ever before.

Mr Black explains the impact of housing cows on poor silage in comparison to grazed grass. "If the forage side of the diet does not hold the same nutritional benefits as grass, then large increases in concentrate will be required to sustain the comparable milk yield. Compared to a zero-grazed herd, the fully-housed herd will need another 1.2 tonnes of concentrate, or nearly a tonne over and above that of a conventionally grazed herd, during the summer period."

At the home of Utopian Holsteins, Quilly Farm in County Down, Neal Pepper explains why they decided to invest in a zero-grazing system. "The herd had struggled through the past few wet

summers to achieve good grass intakes and poaching was an issue on the heavier ground. We had invested in good cow housing a few years ago and the cows genuinely seemed to prefer staying indoors," says Mr Pepper. "The zero-grazing system allows us to utilise every blade of grass we grow and we can also bring grass from fields that we couldn't walk high yielding dairy cows to."

Cost variations

When you apply economics to the different systems, the impact of feed, machinery and housing costs vary. But, as Mr McMinn explains, there are practical ways to control every situation. "Where viable, the hectares round the yard should be grazed 'hard' as soon as cows can be turned out. This will allow high quality grass to grow for the lower yielding portion of the herd.

"If the ground is available then grazing is still the most profitable option for stale cows. Lower yielding cows cost more to feed in a housed or zero-grazed system. As for dry cows and youngstock, grazing standards can be lax and are, therefore, just an inefficient use of ground. Contract rearing on another farm or straw-based feeding systems may be an option," adds Mr McMinn.

If faced with challenges regarding land or forage availability this spring, it is a good idea to take an hour and calculate the stocking rate. Realistic questions need to be asked but, as Mr Black points out, sometimes analysing dairy systems creates more questions than it answers.

"We must take into account that if there is a shortfall in forage intakes in the fully housed system, this must be filled with concentrates. So a keen eye should be kept on feed costs, which are trading lower than this time last year but are not necessarily cheap. By reviewing the cost of every system, and knowing what land is available, educated decisions can be made so that, when the milk price shifts, the only figure that matters is the margin," he adds. |

Table 1: Comparison of the intakes involved in three different systems

forage DM intakes per cow	fully housed	zero grazed	full-time grazing
180-day winter x 11kg DM silage (t DM)	1.98	1.98	1.98
185-day summer housed x 11kg DM silage (t DM)	2.04		
185-day summer zero grazed x 17kg DM (t DM)		3.14	
185-day grazed herd x 15kg DM (t DM)			2.78
add 20% waste on the grazed herd (t DM)			0.56
total DM intake (t DM)	4.02	5.12	5.32
typical stocking rate (grass growth 12t DM/ha) (cows/ha)	3	2.35	2.25

Table 2: Comparison of the economics involved in three different systems

economics per cow	fully housed	zero grazed	full-time grazing
winter feeding costs 1.98t DM x £100/t (£)	198	198	198
185-day summer housed x 11kg DM silage (£)	204		
185-day summer zero grazed x 17kg DM x £70/t (£)		220	
185-day grazed herd x 15kg DM x £70/t (£)			195
add 20% waste on the grazed herd (£)			39
summer housing costs (see assumptions) (£)			
185 days x 27p/cow/day (£)	50	50	
zero grazing costs 185 days x 50p/cow/day (£)		93	
concentrates fed winter 5.5kg/day (£)	257	257	257
summer feed rate (kg)	5.5	2	3
summer concentrate costs (£)	264	96	144
forage and feed costs for a 20-litre cow (£)	967	914	833

Assumptions

1. Six-month housed period per year (between October 15 and April 15)
2. Silage on a three-cut system, yielding 44.5 tonnes per ha at 27% DM net of waste
3. Contractor costing £148/ha per cut
4. Opportunity cost of £450/ha
5. Daily forage intake per cow 11kg DM (40 kg fresh) (allows for a lower forage intake in dry period and slightly higher than this during lactation)
6. Figures for zero grazing – all machinery/labour/forage costs for a 200 cow herd. Zero grazer costs 50pp cow/day on its own
7. Housing costs – (slurry spreading and bedding only) of 27p/cow/day
8. 20% of grass is lost/rejected/poached by grazing cows