In the past, dairy breeding experts have been of the opinion high production comes at the price of fertility. Here, one vet tells us why he disagrees.

System holds key to better fertility

There is no automatic linkage between production and fertility, says vet Mark Burnell, from Synergy Farm Health and he believes any connections are a 'myth'.

"Of course, if you show the past 30 years' averages of herd calving index and production per cow on the same graph, one goes down as the other goes up.

"But it's a myth there is a direct causal linkage between the two. In my experience, the reality is any relationship between production and fertility is largely circumstantial."

For evidence of this, Mr Burnell looks to the 800 cows at Northground Dairy, West Chaldon, Dorset, which produce 12,300 litres sold per cow per year, at a 20 per cent annual replacement rate and a 385-day calving interval. Infertility accounts for just 6 per cent of cullings.

To farmers aspiring to this level of productivity, but not achieving it, Mr Burnell's advice is not to blame the cows nor the people, but instead to examine and improve the system.

"In poor systems, even the very best people will be stifled and struggle to perform well," he says.

"But in good systems, most people of most abilities can perform well. Look at other businesses, the foundation stone of success is the system. Any dairy farm which improves its systems will see better results, and those with good people markedly so."

Among Northground's systems, one of the most important is cow management from three weeks before to three weeks after calving. Mr Burnell says this is geared to the active pursuit of excellent fertility rather than passively letting it happen. This begins with the transition dry cow group being reloaded once a week with the latest batch of eligible cows. At this stage, there is no dietary change. This group is walked through a copper sulphate footbath every day and staff observation becomes active and regular.

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Straw bedded

As close to calving as possible, cows move from the transition group's sand bedded cubicles into straw bedded calving pens next door. Calves are removed after two good feeds of colostrum, then cows spend the next three weeks being cosseted in the freshly calved group. This is housed close to the parlour and overlooked from the dairy office. It always has more cubicles than cows, with at least one metre (3.3ft) of feed trough space per cow.

New calvers go straight onto three-times-a-day milking, the collecting yard has rubber flooring for comfort, and even the last of this group to be milked is only away from its housing and feed for about 35 minutes.

It is during this three weeks in the fresh cow group which Mr Burnell says the next breeding cycle's fertility can be enhanced or ruined. In addition to close daily observation of fresh cows, senior herd manager Paul

Left to right: Mark Burnell from Synergy Farm Health, with Northground's senior herd manager Paul Crocker.

Fresh cow protocol

As an example of the farm's systems-based approach, the Northground fresh cow protocol followed by all staff includes these daily tasks:

- Add cows calved in last 24 hours to the fresh cow list
- Check all fresh cows for milk yield (ask milker about any going into dump bucket)
- Walk through fresh cow group looking carefully for signs of ill health *(see panel for healthy signs)*
- Cows with reduced milk, or milk not rising, or cows looking ill must be restrained – follow decision making tree

Crocker, herd manager Dawn Talbot, or trainee Paul Kitchin, is present in the parlour for at least one milking every day.

All fresh cows identified as under par have their temperature taken, an internal examination for abnormal vaginal mucous or discharge, and an udder check for heat or hardness as an indication of possible mastitis infection.

A decision tree designed by Mr Burnell is followed by the person conducting the examination to determine what happens next. At one extreme, this could be 'call the vet now'. Otherwise, treatments for mastitis, metritis, lameness, ketosis and other likely conditions are all specified – including dose rate, administration route, repeat dose interval and milk withhold – in written protocols.

To herd owners J.F. Cobb and Sons, proper use of animal medicines is a critical aspect of their business. As well as the Northground unit, they own another herd and are managing partner in three more, amounting to 2,500 cows in total. According to Mr Burnell, working towards every team member in all five herds being 'very responsible' in medicine use is high priority.

"We need to make sure we don't overuse antibiotics in particular, and when we do use them we're using the right treatment," he says.

"Then whenever a treatment is given, first time success is important and this is especially so in the fresh calver group, which cows don't leave unless they are 100 per cent right."

Bacteria

In the first week post-calving, about 90 per cent of cows will have a wide-range of bacteria in the uterus, says Prof Martin Sheldon at Swansea University. "This often leads to uterine disease," he says. So despite the Northground team's intensive care around calving, metritis cases are identified regularly and Mr Burnell says the aim is to differentiate between cows which will self-cure and those which will go sick without intervention. In addition to examining vaginal mucous, the vet will also ultrasound scan the uterus for signs of infection once an affected cow is calved 15 days.

Including heifers, about 50 cows a month are calving at Northground, among which between 10 and 20 per cent require treatment for metritis. Having found pessaries and some antibiotics to be ineffective against metritis on this unit, Mr Burnell prescribes an antibiotic licensed for 'treatment of acute post-partum (puerperal) metritis in cattle, in cases where treatment with another antimicrobial has failed'.

From 25 to 32 days post-calving, all cows get a pre-breeding health check, as a safety net says Mr Burnell to pick up any cows which are still not quite right. The voluntary waiting period before cows are served for the first time is 42 days on this unit, which means between 63 and 100 days calved, all cows should have been served at least once. Those identified 'not seen bulling' by 63 days are examined then watched carefully and may be selected for treatment to bring on oestrus.

Defined systems

Of course, there is still plenty which can go wrong and to minimise the risk of this Mr Burnell says the unit's management concentrates on helping staff implement the defined systems, together with constantly reviewing and improving them.

"All staff have a formal training plan and regular team meetings make sure everyone is up-to-date with priorities and developments," he says.

Nutrition also has a major impact on cow fertility and the next big development is to create one feeding hub from which all five units are fed consistently under the same system. "Acceptance is the enemy of excellence," says Mr Burnell.

"Here, it is not accepted that reduced fertility is the price you pay for very high production, and the owners' investment in management systems and continuous improvement aim to keep proving this."

Healthy signs

Fresh cow groups healthy signs are:

- Bright eyes, not sunken
- Breathing at same rate as other cows, not panting
- Up and eating or lying down and cudding
- Not scouring

New calvers go straight onto three-times-a-day milking.