

beef

Multiple benefits from calving suckler heifers at two years old

Research and farm experience shows that beef heifers who calve at 24 months deliver higher lifetime profit than those who calve at 36 months.

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Examiner vs Indo, Guinness vs Murphys – a lot of our personal preferences are based on years of habit...and are no one else's beeswax. The age at which farmers calve their heifers is a bit like that, a personal decision, with most still opting for 36 rather than 24 month calving. But beef farmers are losing very serious money as a result.

The benefits of earlier calving, both financial and environmental, are proven by Teagasc research and the experience of the almost one in four beef farmers calving their heifers at 24 months.

Calving at 24 months dramatically reduces the cost of replacement heifers. Older heifers have a higher rearing cost up to the point of calving. In addition, older heifers have a larger environmental footprint, as they have higher methane output/calf produced over their lifetime.

Other benefits of calving at 24 months include reduced labour costs:

there are simply fewer stock groups to manage. By switching from 36 month calving you can have more productive suckler cows or finishing animals on the farm at the same overall stocking rate.

Management and genetics are required to achieve calving at 24 months. Growth rates in early life are critical to ensuring heifers reach their target of 380-420kg at breeding time.

Selecting heifers with a high Replacement Index reduces the age at first calving, as animals reach puberty sooner and are more fertile. Good management is important to ensure they have the opportunity to express their genetic potential.

The proportion of heifers calving at 24 months has remained steady for 10 years. This must be partly due to beef farmers' preferences. Heifers may have had the potential to reach puberty and be fertile, but if they are not served, they obviously can't calve down at 24 months.

Recent research using data collected through the Department of Agriculture, Food and Marine scheme BEEP, as well as national data available from the Irish Cattle Breeding Federa-



Colin Byrne of Teagasc Grange says that heifers should be 380-420kg at breeding and 550-600kg when they calve at 24 months.

tion (ICBF), helps dispel some of the myths around earlier calving.

•**Myth:** "Calving heifers at 24 months will result in difficult calving."

•**Fact:** Fertility of heifers in subsequent lactations is a good indicator of a heifer's ability to cope after calving and her ability to cycle again.

Heifers that calved at 24 months had a more desirable calving interval in lactation one, compared to heifers that calved at 36 months. The age at first calving had no impact on the probability of cows surviving to subsequent lactations.

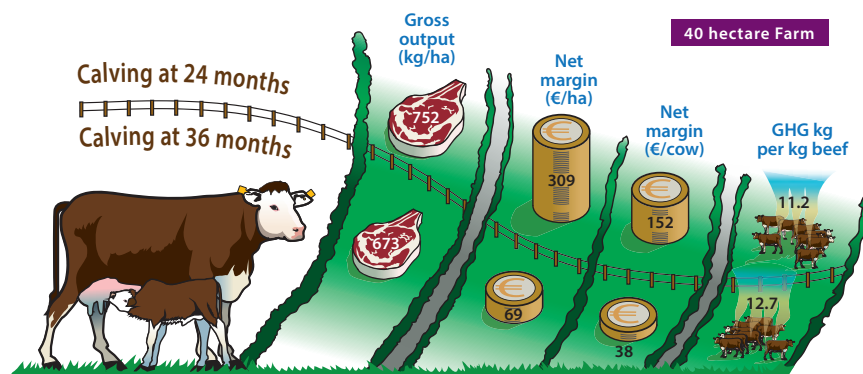
•**Myth:** Calving at 24 months will stunt growth.

•**Fact:** BEEP data showed heifers that calved at 24 months were lighter at first lactation, but with each new lactation cycle their weight difference decreased. By lactation five, there was no difference compared to heifers calved at 36 months.

Having a lighter cow in earlier production years is actually beneficial. They eat less and have a lower environmental footprint.

Overall there was a higher number of calving difficulties in heifers, irrespective of the age at first calving, when compared to mature cows.

Farmers could choose a very easy





If heifers are ready

Critical to implementing a 24-month calving system is maximising pre-weaning liveweight gain.

Heifers achieving 1.2kg of live-weight gain per day during this period will be 300 kg or more come weaning time, in many cases making them very suitable candidates for a 24-month calving system.

Factors that make this weight achievable include good grassland management, milkability of dam, breeding and health status.

Many farmers are achieving these weights with their heifers and have the hard work done. Plenty of farmers in the West-Cork/South-Kerry areas and across the country have their heifers at the target bulling weight of approximately 420kg and above at 15 months, but don't take the final step to put these heifers in calf, and instead opt to wait for another year. This is an opportunity lost.

For some, exclusively using a stock bull only on the farm might be a deciding factor as they don't have the option to use easier calving bulls on young heifers. Many suckler farmers use AI giving them a wider choice of bulls to choose from, helping to avoid any calving issues.

Key goals to ensure heifers calve at 24 months

- Pre-weaning growth rate of at least 1.2kg per day are needed to ensure heifers reach puberty in time for the breeding season.
- Heifers should be 380-420 kg at breeding and 550-600kg at calving.
- Bulls with less than 8% heifer calving difficulty and 80% reliability should be used on maiden heifers.
- Calving heifers in the first 21 days of the calving season increases their fertility and lifetime productivity in the herd.

calving bull to minimise the risk of a calving difficulty. Age at first calving had no effect on the risk of calving difficulties in future lactations.

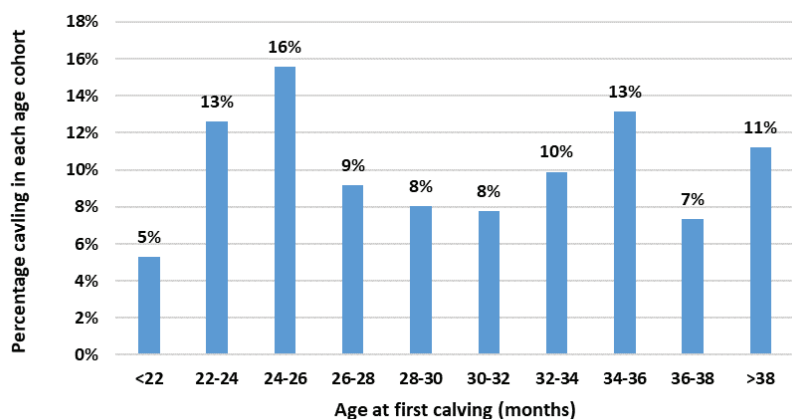
One performance trait that did tend to be affected by calving at 24 months was weaning weight. However, the total amount of weight weaned is more

for the heifer throughout her lifetime, as she will be producing an extra calf, which negates the lighter weaning weight in the early lactations.

Data shows that many of the fears around calving at 24 months are unfounded, and that it is beneficial for overall herd productivity.

Distribution of age at first calving for suckler beef cows in Ireland in 2021

Reducing age at first-calving increases farm productivity (output per head) while reducing costs. A co-benefit is that greenhouse gas emissions per animal and per kg of beef is reduced.



Last Autumn Teagasc ran a series of workshops for farmers across the country on calving heifers in the suckler herd. The workshops explained the economic and environmental benefits of moving to 24 month calving and the management of the heifer from birth all the way through to calving. Each of the farms where the workshops were held have been calving their heifers at two years of age for many years.

A booklet produced for the workshops is available on the Teagasc website. Teagasc will hold similar workshops in 2023.





Gabriel Trayers of the Teagasc Future Beef programme with Mayo farmers Michael and Niall Biggins.

Case study

Michael Biggins and his son Niall farm near Glencorrib in south Mayo. Michael works full-time on the farm, combining the farming work with his busy role as IFA rural development chair. Niall works off-farm as a carpenter, but is also heavily involved in the farm.

The 45ha farm is in three blocks. The land is described as dry limestone, but there is also an area of a heavier peaty soil. There are 65 spring-calving suckler cows. “We sell our bulls as weanlings and the heifers as yearlings,” says Michael. The Biggins family participates in the Teagasc Future Beef Programme.

Michael and Niall are continually improving their suckler herd. The herd is made up of Limousin x Saler suckler cows who are fertile and have a lot of milk.

“We cull hard – any cow with only an average-quality calf or who calves late will not get a second chance,” adds Michael.

Breeding policy

Two Charolais stock bulls are used on the mature herd and an easy calving Saler runs with the heifers. Approxi-

mately 20 cows with their calves plus the bull will be put into a separate group on each of the three blocks.

“We want to start calving on February 1st, so the bulls are let out in the last few days of April,” says Michael. To keep the calving interval tight, the bulls are removed after eight weeks.

Replacement policy

Replacement heifers largely come from within the herd, but Michael will occasionally purchase suitable in-calf heifers, directly from farmers where possible. They have one main rule: “Heifers must calve at two years of age or very close to it,” says Michael.

“It costs too much to have a heifer running around for an extra year without producing a calf.”

Do heifers need assistance at calving? “We’ve had heifers calving at three years of age and they are the ones I had the most trouble with. All

heifers calving need extra observation and assistance, no matter what age they are.”

All of the Biggins’ suckler herd have now calved at two years of age with the exception of some purchased replacements.

“There are cows on their fourth and fifth calving with a mature weight of over 650kg, who calved for the first time at two years old,” adds Niall.

Key weight targets

There are specific target weights that the heifer must meet at different stages of her development.

On the Biggins’ farm, the young heifer calves are forward grazed during the first summer. This ensures that they get to graze leafy covers of grass and, combined with their mother’s milk, will be gaining 1.2kg liveweight per day. Prior to weaning, meal is introduced at 1kg per day. They are also vaccinated against IBR

Table 1: Key weight targets.

Mature cow weight	Weaning weight	Bulling weight	Calving weight
Target percentage of mature weight		60%	80%
600kg	260-280kg	360kg	480kg
700kg	300-320kg	420kg	560kg



David Hallissey at Teagasc Clonakilty says using AI gives farmers access to a wide range of easy calving bulls to use on heifers calving at 24 months.

and RSP and dosed for worms.

“The heifers are weaned in a stress-free, gradual way by removing three to four cows at a time from the main group,” says Michael.

“There is no housing of cows and calves during this process. The heifers will be weaned at 280kg and over.

“After weaning, the heifers remain on grass with 1kg of meal until housing. Then they are weighed and this year, the group averaged 300kg. They are penned and offered high-quality 73% DMD silage. The target is a weight gain of 0.6kg/day while indoors for the first winter. We take dung samples and animals are dosed based on the results. The heifers have plenty of room and feed space to ensure maximum performance.”

Year two

Weather permitting, the heifers are let out to grass as early as possible in late February. “The target is to have them at 60% of their mature cow body weight, i.e 400kg + at bulling on May 1st,” adds Michael.

“Prior to bulling, we will draft 12-15 of the best heifers. These heifers will be from the best mothers that meet the following criteria:

- Consistently produced a top-quality calf.

- Plenty of milk.
- Good docility.
- Calved early in the season.
- Good udder and feet.
- High maternal index on ICBF (€100 plus).”

Breeding time

An easy calving bull is selected. The bull will run with the heifers for eight weeks only. “If the heifer does not go in calf in this time she will be sold off-grass to the local mart,” says Michael.

This means that the most fertile heifers are kept and will calf compactly the following year.

Michael likes to calve the heifers along with the main herd: “Calving in mid-February means that the heifer won’t be far off going to grass,” he says.

Management pre- and post-calving

After breeding, the heifers are scanned and the in-calf heifers are kept as a group on their own. The farm is well paddocked and the heifers get three-day grass allocations. The target is to get a liveweight gain of 1kg/day.

During the second winter, the heifers are penned as a group. They are not mixed with other stock such as

older cows. They are offered moderate quality silage (68% DMD+) ad-lib and a close eye is kept on body condition. Heifers are vaccinated prior to calving against rotavirus, coronavirus and leptospirosis.

“At calving, we make sure one of us is near home and we can both watch the calving pens from our phones,” says Niall.

“After calving, the heifer is allowed to bond with her calf in a pen of her own for three days. She will be given top-quality silage (73%DMD+) until turnout.

“It is vital that the heifer is well looked after post-calving to ensure that she will go back in-calf. We will continue to keep the heifers that calved as a group of their own for another year. We have an easy calving CH bull for them for the second season.”

Michael sums up their attitude to 24 month calving: “We wouldn’t have it any other way. Once you look after the heifer, calving at two years will work.

“It is a lot more profitable and I read that it reduces GHG by 12% – we all have to be very conscious of the environment side as well as profit from now on. Calving at two years is a win-win all round.”

Table 2: Key performance indicators from the 2022 ICBF reports.

	Biggins herd average	National average	Top 10%
Replacement index (cows)	€105	€87	€112
Replacement index (first calvers)	€133	€91	€128
Herd calving interval	366 days	393 days	358 days
Calves per cow per year	0.99	0.87	1.02
Heifers calved 22-26 months	74%	24%	75%
Six week calving rate (spring)	85%	55%	100%