

Bought-in or home-bred?

Should farmers purchase high-EBI stock this autumn in order to improve overall farm performance? A recent study and this Cavan farmer's experience shows the answer is definitely yes.

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Teagasc dairy specialist.

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The Economic Breeding Index (EBI) summarises the expected performance of an animal's progeny for a range of characteristics into a single monetary value.

EBI in the BMW region

A recent analysis of herd performance in the border, midlands and western (BMW) region reflects the change in herd EBI between 2017 and 2021.

Herds were grouped into three categories:

- Herds that were categorised average for EBI in 2017 and remained in the average EBI category in 2021 (AVG – AVG).
- Herds that were in the top 20% for EBI in 2017 and remained in the top 20% on EBI in 2021 (TOP – TOP).
- Herds that were average for herd EBI in 2017 but moved into the top 20% for EBI in 2021 (AVG – TOP).

No differentiation was made on cow type as the EBI works across breeds. Performance metrics of the herds are depicted in Figure 1.

The average EBI of the AVG–AVG and TOP–TOP groups increased by €45 between 2017 and 2021, while that of the AVG–TOP increased by €77.

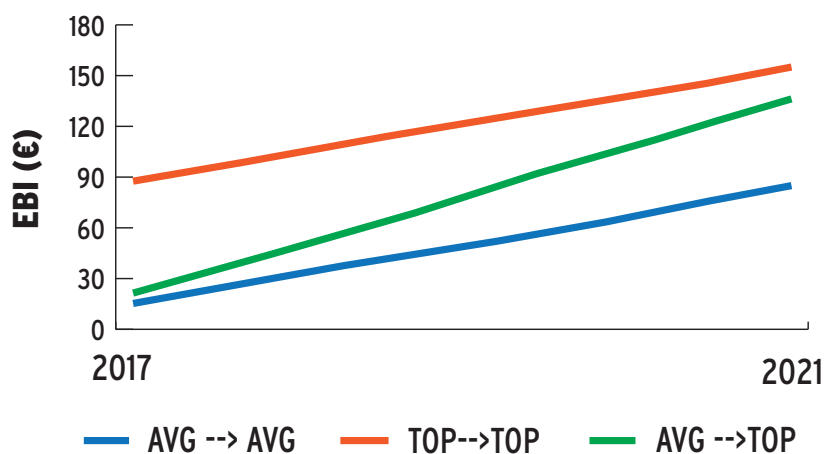
The fact that the yearly rate of gain remains similar at €9 per year between the average and top group means there is no evidence that the gap between both cohorts of herds will close over the coming years.

The average group has the same herd EBI in 2021 as the top category had in 2017. In theory, they are five years behind in terms of their breeding decisions.

We should also bear in mind that 50% of the herds in the study have an overall herd EBI of less than that of the average (€118).

In turn, milk solids per lactation increased by 9% and 10% for the AVG–AVG and TOP–TOP group, re-

Figure 1: Change in herd EBI for AVG-->AVG, TOP-->TOP and AVG-->TOP farms in the BMW region.



spectively, while that of the AVG–TOP increased by 15%.

Irrespective, the mean milk solids yield per lactation of the two TOP groups in 2021 was 7% to 11% higher than the AVG group in 2021.

A further analysis was undertaken using e-Profit Monitor data from 262 farms in the catchment from the years 2018 to 2021, relating herd EBI to profit per lactation.

Each €1 increase in herd EBI was associated with €1.79 more profit per lactation. This is similar to the response observed over many years across the country as a whole.

In other words, due to the increase in herd EBI within the AVG–TOP herds (increase of €77 over the period (2017–2021), profit per lactation is expected to have increased by €137.80.

Assuming an average herd size of 89, this difference equates to €12,264 more profit per year.

Compare this to the €45 EBI gain made with the AVG–AVG group over the same period, which equates to €80.50 additional profit per lactation or €7,164 more profit per year.

Low EBI herds – Where to next?

Typically, herds have relatively low EBI figures for a variety of reasons.

Often it comes from historic use of dairy stock bulls, or a focus on individual traits such as milk volume in isolation.

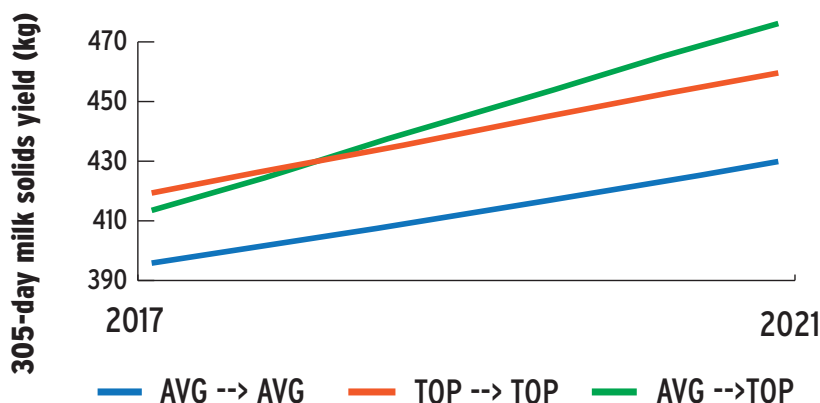
One cohort of farmers that found themselves in this position in 2017 was the AVG–TOP herds in the aforementioned analysis.

The obvious goal for these herds was to improve genetics quickly over the five years in question, whereby they would ultimately see themselves ranked in the top 20% on herd EBI.

Using teams of high-EBI bulls will improve the quality of replacements entering the herd. Unfortunately, a change in breeding strategy will take five to seven years to have any significant impact on herd performance. Too slow for farmers who find themselves with a herd EBI under €120.

When we analyse what happened within these herds individually, the common practice that dramatically improved herd performance was the purchase of high-EBI replacements and the breeding of a large cohort of

Figure 2: Change in milk solids yield for AVG-->AVG, TOP-->TOP and AVG-->TOP farms in the BMW region.



the original herd to beef AI.

These farmers identified that the replacements available to purchase from the highest genetic merit herds nationally were far superior to any replacements they could have bred themselves.

These high genetic merit animals were then used to produce the herd's replacements, further accelerating genetic progress.

Considerations when purchasing stock – quality and health status

There is always excellent high-EBI stock available to purchase each year. Typically, heifer calves and maiden heifers are available in the spring and in-calf heifers in September/October.

It is much more difficult to get in-calf heifers after October/November and it can be hard to source quality recently-calved heifers. This often

means buyers settle for lower genetic merit stock, which defeats the purpose of the exercise.

Animals being purchased should be of high genetic merit, with the focus on fertility and the potential for high percentages of fat and protein.

Ensure the animals you buy are AI-bred, calving in February (early March in the case of in-calf heifers) and hitting their target weights. They should generally be in good condition.

Purchasing any animals for your herd comes with an element of risk, be it a single beef stock bull or a group of replacement stock.

It is absolutely essential that stock is sourced from herds with a verified low disease risk and that you take all relevant precautions when bringing new animals onto your farm.

There are a number of questions you should ask;

- What is the disease status of the herd?
- Has the herd had a TB outbreak in the last number of years?
- What vaccination protocols are in place?

Speak to your local vet in advance with regard appropriate vaccination and quarantine protocols.

Use the resources you have locally through Teagasc or joint programme advisors to help plan the process.



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Farm focus – Killian Brennan, Kilcogy, Co Cavan

Albert Einstein's definition of insanity is "doing the same thing over and over and expecting different results."

This certainly wasn't the case when it comes to Co Cavan-based farmer Killian Brennan with regard his breeding decisions over the last five years.

"Historically, the herd breeding decisions were outsourced, with my only real concern being that we had cows with plenty of milk," says Killian.

With this policy in place up until 2017, the herd produced 424kg MS/cow at 3.87% butterfat and 3.37% protein on approximately 1,000kg of meal and a calving interval of 381 days.

These annual constituents delivered a milk price below base price for the months of April, May and June, something that triggered Killian's decision to make changes.

"I was leaving money behind when I looked at what other herds were achieving," he said.

In 2017, Killian – with Teagasc's input – decided that bulls would be selected through the ICBF sire advice tool based on the milk and fertility sub-index, with a focus on combined fat and protein rather than kgs of milk.

"I continued to breed from all the cows within the herd, something I would do differently with hindsight. Inevitably, your heifer calves were bred off some of your poorer cows."

In 2019, Killian developed a business plan to improve overall performance. A key element within this plan was to improve the genetic merit of the herd through improved breeding and the purchase of high-EBI stock.

Clear criteria were defined for the type of stock that was to be purchased



Killian Brennan.

with the help of the local Teagasc advisor – fertility and solids, AI-bred, calving in February and of high health status.

Ten heifer calves and 25 in-calf heifers were selected for purchase based on their EBI figures.

"We identified a number of groups of stock to look at that fitted the

criteria. I won't tell a lie, I wasn't so sure when I looked at the first group of stock.

"They were a lot different to what I was used to looking at, but after seeing the herd of cows and the performance figures they were achieving, it put my mind at rest."

Clear protocols were put in place with help from the local vet with regard to vaccination and quarantine prior to the arrival of the heifers.

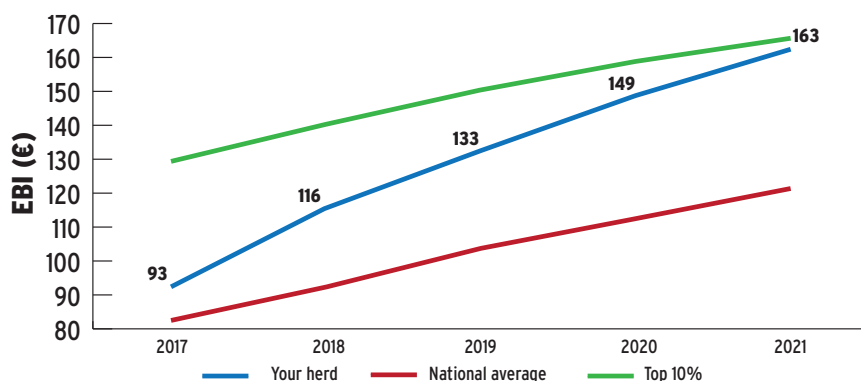
"The heifers were kept on a separate outfarm until I had all the vaccinations given. It's also easier on the stock if they remain in their own group," says Killian.

These purchases ensured the herd's EBI jumped from €133 to €149 in one year (Figure 1), which is double the national average yearly gain.

In the autumn of 2020, a further 18 in-calf heifers were purchased and along with the homebred heifers, it meant 120 cows calved down in the spring of 2021.

Of these, 75 were first and second

Figure 1: Herd EBI gains 2017-2021.





Killian Brennan with James Dunne and James Mimmagh.

calvers. The herd had a six week calving rate of 81% and a calving interval of 371 days.

“We saw a dramatic increase in the herd’s milk performance in 2021, where the cows produced 473kg MS at 4.28% butterfat and 3.53% protein on approximately 800kg of meal,” says Killian.

“This is an increase of 49kg MS/cow on 2017 levels, or an additional €249 per cow in additional milk sales based on 2021 milk prices. It’s an

additional €29,000 in milk sales when you multiply it up across the herd, while producing it on less meal. It’s also a very young herd, so herd performance should continue to improve over the coming years.”

Milk butterfat and protein increased over the same period by 0.40% and 0.16% respectively.

After successfully trialling a small amount of sexed semen in 2021, Killian decided to breed the best cows in the herd to sexed semen this year:

Therefore, the best young cows were identified using both EBI and milk recording records to get sexed semen over the first three weeks of breeding.

“When we analysed the herd to identify the best cows, we ended up with the majority of those being the purchased stock. That tells me all I need to know and my only regret is that I didn’t make the decision to buy superior animals sooner,” concludes Killian.



Ryan and Killian with Dara and Madeline (daughter Chloe was away at training).

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