

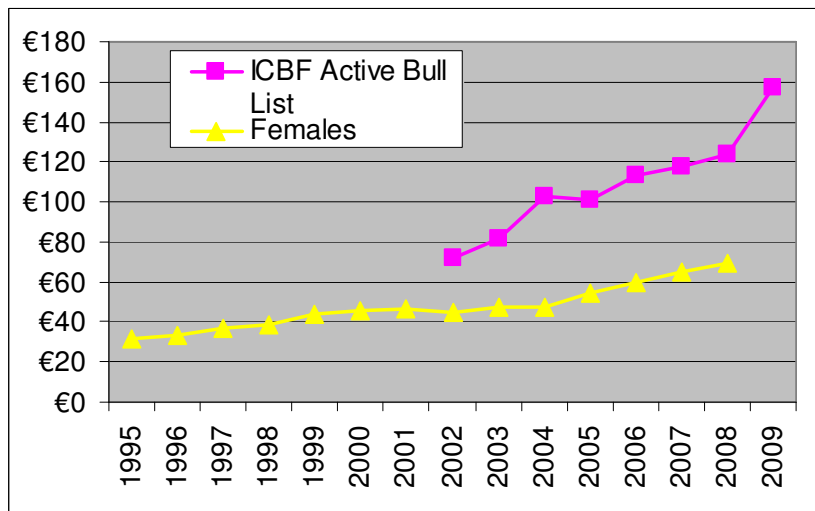
Irish farmers to gain €33 million from new ICBF Active Bull List.

The new ICBF Active Bull List for 2009 has the potential to increase profit for Irish dairy farmers by some €33 million. This is compared to previous lists where the average annual increase in EBI was worth some €5 million to the industry (see Figure 1). So how has this increase come about, and what must dairy farmers do to capitalise on these potential gains? Here we answer a number of key questions regarding; (i) the make-up of the new ICBF Active Bull list, (ii) the inclusion of new genomically selected bulls on the list and (iii) simple advice for farmers regarding the use of AI and the ICBF Active Bull List this Spring.

1. Make-up of the New ICBF Active Bull list for 2009.

The average EBI of bulls on the ICBF Active bull list for 2009 is €158, which is €33 higher than the equivalent list in 2008 (see Figure 1).

Figure 1. Genetic Trend in EBI for dairy females (1995-2008) and average EBI of sires on the ICBF Active Bull List (2002-2009).



The range in EBI values varies from a high of €250 to a lower cut-off of €133. This list is based on the February 2009 genetic evaluations computed by ICBF. The list contains bulls whose semen is available and they themselves are;

- Daughter proven, (Irish & international) where the EBI reliability is $\geq 35\%$.
- Genomically selected bulls, where the bulls have an EBI based on Irish genomic data, an EBI reliability of $\geq 35\%$ and a calving difficulty evaluation in the country of 1st origin of $\geq 50\%$.

The 75 Bulls have breeding values for EBI and the 5 sub indices together with trait information on 9 key profit traits. None of the bulls on the list are carriers of genetic recessives e.g CVM or BLAD.

Of the bulls on the list about half (37 bulls) have obtained their proofs through conventional daughter progeny testing (12 of these have daughters in Ireland and 25 are based on daughters in other countries), whilst the remaining 38 bulls have obtained their proofs, based on genomic selection information.

2. What is Genomic Selection?

Genomic selection is a new technology that allows animal breeders evaluate bulls on the basis of their DNA profile. We do this by first establishing the relationship between known areas of DNA (termed SNP's) for well proven AI sires and their actual daughter performance, in terms of EBI. In the case of Ireland, this "training population" includes some 1,000 dairy AI sires and 100,000 daughter records. Having established these relationships we can then predict forward expected EBI performance for all animals based on their DNA profile. The additional DNA information is equivalent to having 10-15 daughter records on a given animal (~45% in EBI reliability terms). This is in comparison to 0 daughter records for a parent average proof (~30% in EBI reliability) and 100 records for a daughter proven bull (~75% in EBI reliability terms).

The net effect of this new technology is that we can now identify high EBI AI sires at a much earlier age for widespread use (e.g., the average age of the GS bulls on the list is 4 years old compared to 10 years old for the daughter proven bulls). However, this comes at much lower reliability levels (some 25 units lower in EBI terms). So how can farmers safeguard themselves against these lower reliability levels and capitalize on the huge benefits that genomic selection has to offer? This is where the use of bull teams and "spreading your risk" is absolutely key in future farmer breeding decisions.

Why use teams of bulls? The principle of "spreading the risk" is well understood by all farmers, whether it is in the selection of a range of varieties in a grass seed mix or when placing a bet at the local "point to point". The same principles apply in bull selection. Proofs for individual bulls could vary by as much as €90 for low reliability GS bulls, e.g., HTH (the upper and lower range from the Active bull list), to €35 for high reliability daughter proven bulls, e.g., OJI. To safeguard against this farmers should always select a team of bulls from the list. The size of the team will depend on the proportion of lower reliability bulls selected. If using only genomically selected bulls then a minimum of 5 bulls should be used evenly across the herd. This will ensure that the average EBI of the team of bulls should vary by no more than €30 (equivalent to a an EBI reliability of 90%), when the daughters start milking in your herd in 4 years time, i.e., some individual bulls may go up and some may go down, but on average the team will perform in line with expectation. This is the key to using the new GS information in a safe and effective way.

3. Bull Selection this Spring; Advice for Farmers.

There are many answers to this question but here are 5 simple tips that will help you pick the correct sires for your herd this Spring;

- i. Identify your herd strengths and weaknesses. You can easily do this from your herd EBI report, by looking at your herd EBI sub-indexes. If you do not have access to this report, you should contact ICBF HerdPlus (1850 600 900) for further information.
- ii. Pick an initial panel of 10 bulls that are high EBI (>€160) and are strong in the sub-indices that your herd is weak in. For example, if your herd is low in fertility sub-index (<€20), then you should look to select bulls which are strong in this area (>€70 for the bull team).
- iii. Refine your list of bulls by taking other factors into account, e.g., calving ease, inbreeding, price and availability.

- iv. Finalise your team of bulls by picking 4-6 high EBI bulls and contacting the relevant AI suppliers and ordering the semen.
- v. Use the ICBF Sire Advice tool to allocate your selected team of bulls to your individual cows. This tool will avoid any close mating's and will also provide you with a customised herd breeding chart and will ensure that all potential mating's are stored on the handheld of your AI technician. Again, if you have any questions on Sire Advice, then please contact ICBF HerdPlus on 1850 600 900.

How many straws? Whilst the number of AI bred dairy heifer calves has been increasing by some 5%/year over the past 3 years (up to 55% of total dairy heifer calves born in 2008), this is still considerably lower than international best practice (typically 80%+). Farmers interested in increasing profit from breeding should plan to use 2 straws for every cow in the herd this Spring. For a 70 cow herd, this will return 25 dairy replacements which is ample for normal replacement rate (25%), with surplus for expansions and/or sale. Teagasc research has demonstrated that the sale of high EBI heifers is the second most profitable enterprise available to dairy farmers, after milk production. You should keep this in mind when breeding this Spring. The message is simple; You need high quantities of high EBI straws this Spring. The effort will be worth it in the medium to long-term.

4. Where can I get more information on the List?

The ICBF Active Bull list March 2009, together with a range of explanatory information, is available on the ICBF website; www.icbf.com. It will also be widely available through Teagasc, AI Companies, the National and local press. The list will also be updated in April, as more high EBI GS bulls become available, based on latest EBI and calving information.

We look forward to bring you future versions of the ICBF Active Bull List and would like to wish you every success in your breeding endeavours this Spring.