# Results survey on providing predicted breeding values

Question 1. List the traits for which the breeding organisations should provide information, i.e. predicted breeding values for selection candidates ?

From 24 lists handed in, the following 'ideal picture' was derived:

| Breeding goal trait for which PBV should be available on potential selection candidates | | Remarks |
|---|---|---|
| Trait group | Trait | |
| Milk production | Milk/carrier kg | |
| | Fat kg or % | |
| | Protein kg or % | |
| | Milk quality | e.g., k-casein |
| Beef production | Daily gain/final weight | |
| | Dressing or Retail % | |
| | Muscularity | |
| | Fatness, marbling | |
| Calving ease | Direct effect | Parity split |
| | Maternal effect | |
| Still birth | | |
| Udder health | Udder conformation | a.o. Udder depth, teat placement |
| | Somatic Cell Score | |
| | Clinical incidence | |
| Female Fertility | Non-return rate | Age 1st calving, heat detectability, luteal activity |
| | Interval Calving – 1st insemination | |
| Male Fertility | | |
| Feet & Legs problems | Conformation | Foot angle, Rear legs set |
| | Locomotion | |
| | Clinical Incidence | |
| Workability | Milk speed, ability, leakage | |
| | Temperatment/Character | |
| Longevity | | Functional, residual |
| Other diseases | | Ketosis, metabolic problems |
| Persistency | | |
| Metabolis stress/ | Mature weight | |
| Feed efficiency | Feed intake capacity | |
| | Condition Score | |
| | Energy Balance | |

This 'ideal picture' was copied for all participants, and participants were then asked Question 2. Give per group of traits a score of 0-5 for each of the following possible uses of the predicted breeding values for this group (0 - this trait PBV is not important for this use; 5 - this trait PBV is very important for this use):

1. use in Total-Merit-Index, i.e. overall increase genetic merit for all farmers,
2. present for specific use by individual farmers,
3. use for culling extremes,
4. use in assortative mating,
5. use for monitoring at population level,
6. publish for 'enjoy' farmers,
7. for 'consumer' acceptability,
8. for other reasons, .... .

The following table summarises the average score over 15 answers by different participants (use 8 was not used in any of the answers; some answers were by more than one participant)

| Breeding goal trait group for which PBV should be available on potential selection candidates | Reason for publication of PBV for the trait group Importance scale 0-5 | | | | | | |
|---|---|---|---|---|---|---|---|
| | Specific use individual farmer | Total merit index selection | Culling extremes | Assortative mating | Monitoring population level | 'Enjoy' farmers | Consumer acceptability |
| Milk production | 4.7 | 4.8 | 2.0 | 1.4 | 2.4 | 0.8 | 1.1 |
| Calving ease | 4.3 | 2.4 | 3.6 | 4.4 | 3.9 | 1.0 | 3.0 |
| Still birth | 3.5 | 2.5 | 4.3 | 3 | 3.4 | 1.1 | 3.4 |
| Udder health | 4.5 | 4.6 | 3.1 | 2.2 | 3.7 | 1.3 | 3.7 |
| Female Fertility | 4 | 3.9 | 3.6 | 1.4 | 4.1 | 0.8 | 2.5 |
| Male Fertility | 3.7 | 3.3 | 3.7 | 1.3 | 3.9 | 0.8 | 2.3 |
| Feet & Legs problems | 4.3 | 2.9 | 2.8 | 3.1 | 2.4 | 1.9 | 1.7 |
| Workability | 4.0 | 1.7 | 3.0 | 2.8 | 2 | 1.7 | 0.6 |
| Longevity | 4.2 | 3.9 | 2.3 | 1.3 | 2.5 | 1.4 | 2.8 |
| Other diseases | 3.2 | 2.2 | 2.6 | 1.2 | 3.2 | 0.2 | 3.1 |
| Persistency | 3.6 | 1.8 | 1.5 | 0.9 | 2.1 | 1.7 | 0.1 |
| Metabolis stress/ Feed efficiency | 2.6/2.9 | 2.3/2.0 | 2.4/1.8 | 1.3/1.4 | 2.7/2.2 | 1.1/1.7 | 2.8/1.0 |

Given all limitations to this survey, it is interesting to give general, indicative conclusions/remarks:

- Non of these PBVs is just for enjoy of farmers (all scores below 2.0), but all traits are considered to be informative (all scores 2.6 or higher) to farmers for specific use by individual farmers.
- For consumer acceptability of the sector/products especially calving performance, health (udder, feet and legs, other diseases and metabolic stress) and fertility of the animals are considered important. This same group of traits is considered for monitoring on population level.

- General acceptance on traits to be included in a total merit index is (threshold 2.6 or higher average score): Milk production, Udder health, Fertility, Feet and Legs problems and Longevity.
- Assortative mating is especially relevant for (threshold 2.6 or higher average score): calving ease and still birth, Feet & Legs problems and Workability (including milking speed).
- Culling of animals with extreme PBVs is relevant for most traits, except milk production, longevity, persistency and metabolic stress/feed efficiency.

Per trait:

- Milk production: to be included in total merit index selection,
- Calving ease and still birth: assortative mating and culling extremes, in combination with monitoring at population level,
- Udder health: to be included in the total merit index selection,
- Fertility: combination of total merit index selection, culling of extremes and monitoring at population level,
- Feet & Legs: combination of total merit index selection, culling of extremes and assortative mating,
- Workability: Culling of extremes and assortative mating,
- Longevity: total merit index selection,
- Other diseases: monitoring and culling of extremes,
- Persistency: only for specific use by individual farmers,
- Metabolic stress/feed efficiency: both specific use by individual farmers and monitoring at population level.