

Worldwide Holstein Breeding Objectives

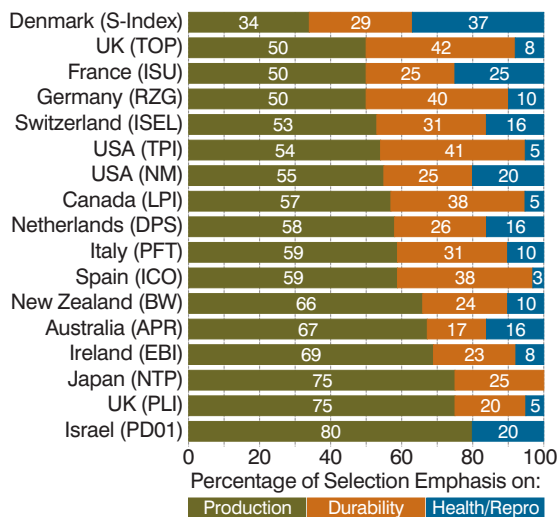
For many years, most Holstein breeding schemes worldwide focused exclusively on increasing milk production traits. In recent years, there has been a growing interest in broadening selection objectives to include functional traits such as fertility and health, to complement selection for production.

A study recently conducted at Canadian Dairy Network compared national selection indexes currently used in various countries. The total breeding goal was divided into three components:

- Production, including selection for milk, fat and protein yield as well as for fat and protein percent;
- Durability, including selection for longevity, mammary system, feet and legs, body traits, liveweight and temperament;
- Health & Reproduction, including selection for somatic cell score, udder health, milking speed, female fertility and calving ease.

The figure on the right shows the relative emphasis for each component in each country surveyed, with the UK and USA each providing information for two national selection indexes. Countries are ordered according to the emphasis they place on Production.

Selection weight on Production traits ranges from 34% in Denmark to 80% in Israel. With the exception of Denmark, all countries put at least 50% importance on Production in the total breeding goal. Emphasis on Durability ranges from 42% in the UK



(TOP) to zero percent in Israel. Germany, USA (TPI), Canada and Spain put a large emphasis on Durability, whereas Australia and UK (PLI) place a relatively low emphasis on selection for a more functional dairy cow that survives longer in the herd. Israel and Japan are the only countries that do not include selection for longevity in their breeding goal.

Denmark puts heavy importance on Health & Reproduction (37%), which is three times more than the average. Japan does not select for Health & Reproduction and Spain places a very small weight on this component (3%).

source: Bethany Muir, Canadian Dairy Network; Filippo Miglior, Agriculture & Agri-Food Canada