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Genetic trends for milk yield, milk components and milk coagulation properties in Italian Holstein Friesian and Estonian Holstein dairy cattle population

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Objective:

Analyze genetic trend for milk yield (MY), milk components and milk coagulation properties (MCP) in Italian Holstein Friesian (IHF) and Estonian Holstein (EH) dairy cattle.

Conclusions:

- **Youngest group of bulls in both two populations had higher EBV for fat %.**
- **Protein % breeding values decreased in both cow populations and in EH bull population.**
- **Trend for Milk Coagulation Properties:**
  - **bulls: there was deterioration in IHF and a slight improvement in EH population.**
  - **cows: there was a deterioration in both population.**
- **Current selection indexes in EH and IHF seem to deteriorate MCP traits.**

Materials and Methods

MCP traits: rennet coagulation time (RCT) and curd firmness (A_{30})

Italian Holstein Friesian

- Dataset: 1,592 individual milk samples, collected from April to November 2007 in 130 herds located in Northern Italy.
- Model: single trait animal model (fixed effect of herd-test day, parity, days in milk (DIM); 45,413 animals in pedigree).

Estonian Holstein

- Dataset: 17,577 individual repeated milk samples from 4,191 first lactation cows, collected from April 2005 to January 2009 in 73 herds located in Estonia.
- Model: single trait repeatability animal model (polynomial effect of DIM, linear effect of age at calving, fixed effect of sampling year-season and calving year-season, random effect of herd, permanent environment and additive genetic effect of animal; 17,185 animals in pedigree).

Results

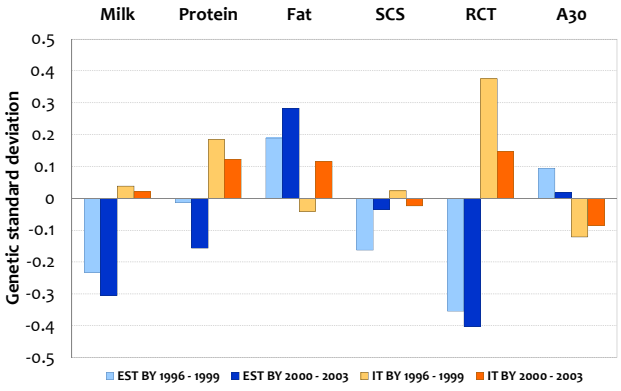

Figure 1: Trend of EBV for bulls in the two populations. Compared to the group with birth year (BY) 1991 – 1995.

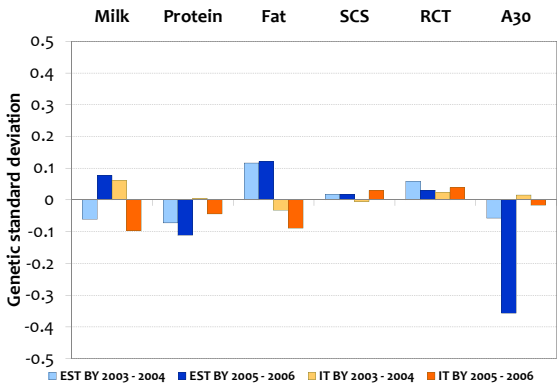

Figure 2: Trend of EBV for cows in the two populations. Compared to the group with birth year (BY) 1993 - 2002.

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