Context:

- Needs for new management tools
- Test Day Models: monthly milk records explained by factors such as age, month of calving, length of dry period, gestation, genetic level depending on lactation stage and a measure of production environmental effect: the Herd Test-Day effect (HTD)

Four main applications of Test-Day Model results:

1. To forecast future animal production from environmental effects (predicted HTD, age and month of calving…) and animal effects

2. To simulate the impact of management changes (calving period, age at first calving…) through a precise decomposition of lactation
   - Ex: simulation of a cow calving at 2 instead of 3 years of age (red line in the upper figure)

3. To compare predicted HTD with real ones

   Real vs expected production due to short term environment effect (real vs expected HTD).

   Observation: increase of HTD (till +8kg of Milk) at the end of 2007
   Interpretation: adaptation of herd management to produce more milk due to a large increase of milk price

4. To highlight herd management strengths and weaknesses through Herd Test-Day pattern comparison

   2 herds with very different milk HTD patterns (expressed as a deviation from the regional mean)

Conclusions & perspectives:

- Test-Day Models give keys for the development of new herd management tools.
- The diversity of HTD patterns reflects the diversity of herd management.
- HTD patterns are the basis of a new typology of herd management

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