PDO and sustainable development:

targeting the average production as a way to question productivity?

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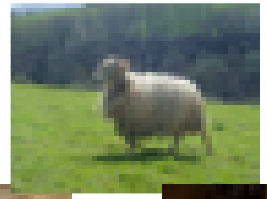
Case studies in 2 french mountain areas

3 local breeds; 1 PDO cheese

Manech tête rousse (MTR)

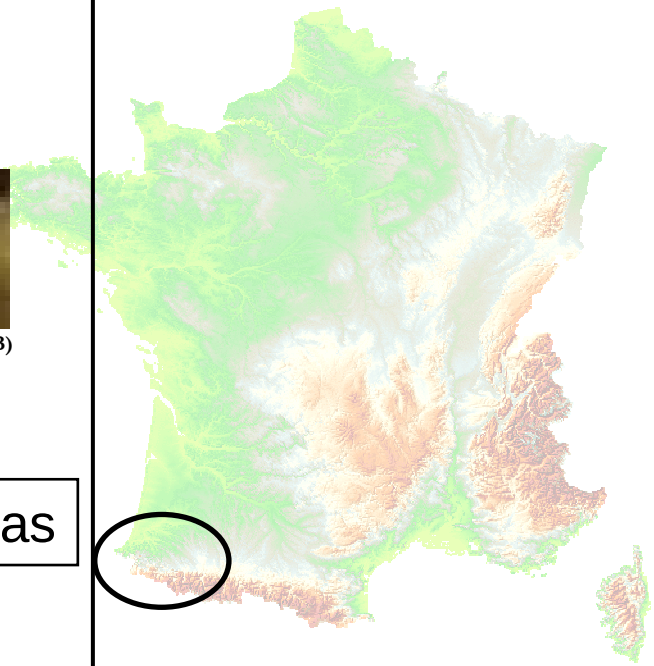


Manech tête noire (MTN)

Basco béarnaise (BB)

Atlantic Pyreneas

Ossau-Iraty



Map : www.lexilogos.com

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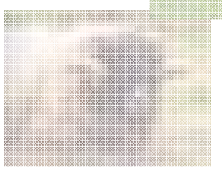

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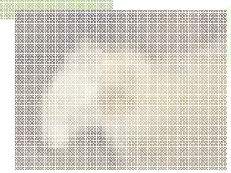

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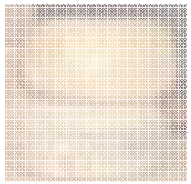

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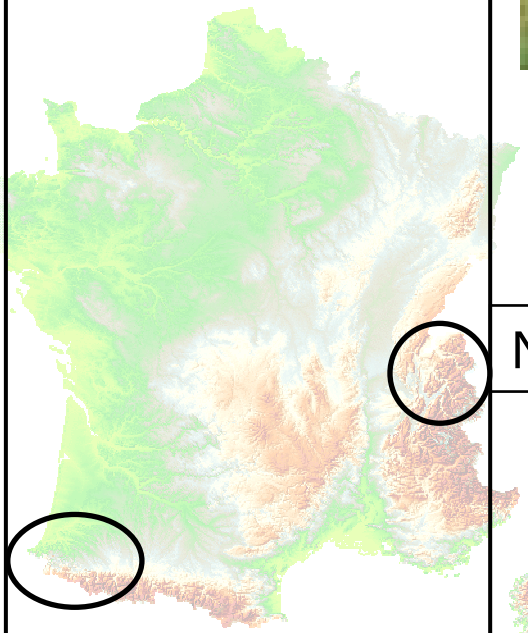


Map : www.lexilogos.com

3 breeds; 4 PDO cheeses

Northern Alps

Abondance (ABO)

Tarentaise (TAR)

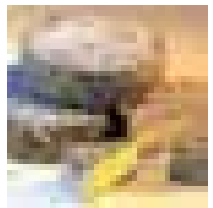
Montbéliarde (MON)

Reblochon

Beaufort

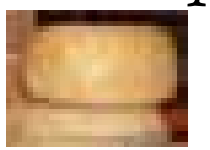
Abondance

Tome des Bauges



For some PDOs, the average production is targeted

- **Atlantic Pyreneas**



  - **Ossau Iraty : maximal milk yield = 300 liters per ewe (MTR; MTN; BB)**

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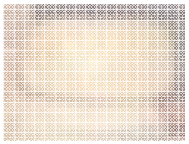
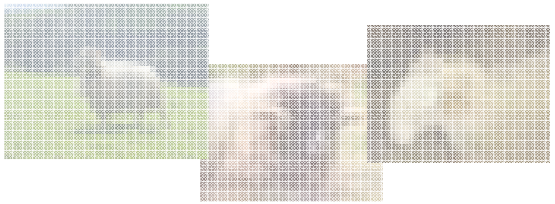
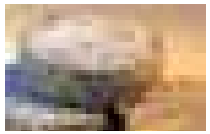


  - Ossau Iraty : maximal milk yield = 300 liters per ewe (MTR; MTN; BB)

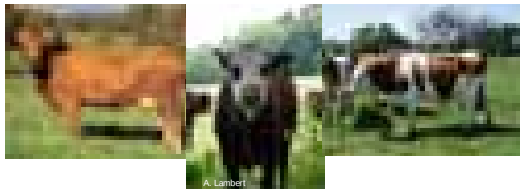


- Northern Alps

  - Beaufort : maximal milk yield = 5000kg per cow (TAR; ABO)

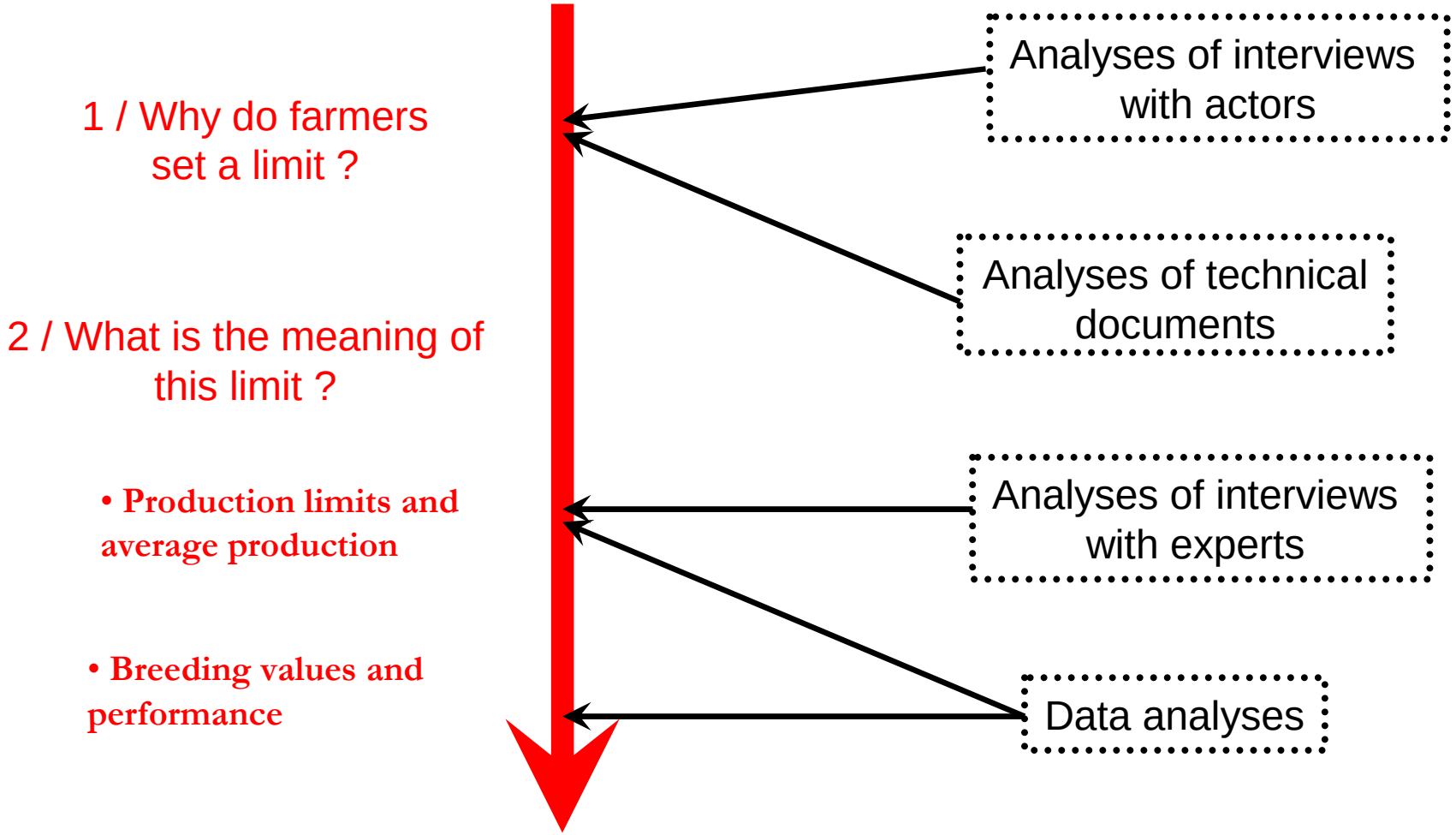


  - Tome des Bauges : maximal milk yield = 5500kg per cow (TAR; ABO; MON)



What about genetics to manage production limit ?

Approach and methods



How to manage a limit of production ?

Why do farmers set a limit of production ?

Farmers give 3 reasons

1-Extensive farming system : graze and hay

2-No intensification of milk production

3-Influence on genetics choices :

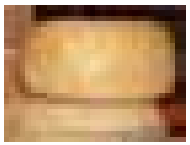
Milk quality vs. milk quantity

Adaptability to mountain systems

Comparing production limit and average production per breed

The production limit is easy to manage in the case of ewe cheese in the Pyreneas

Average production (liters)



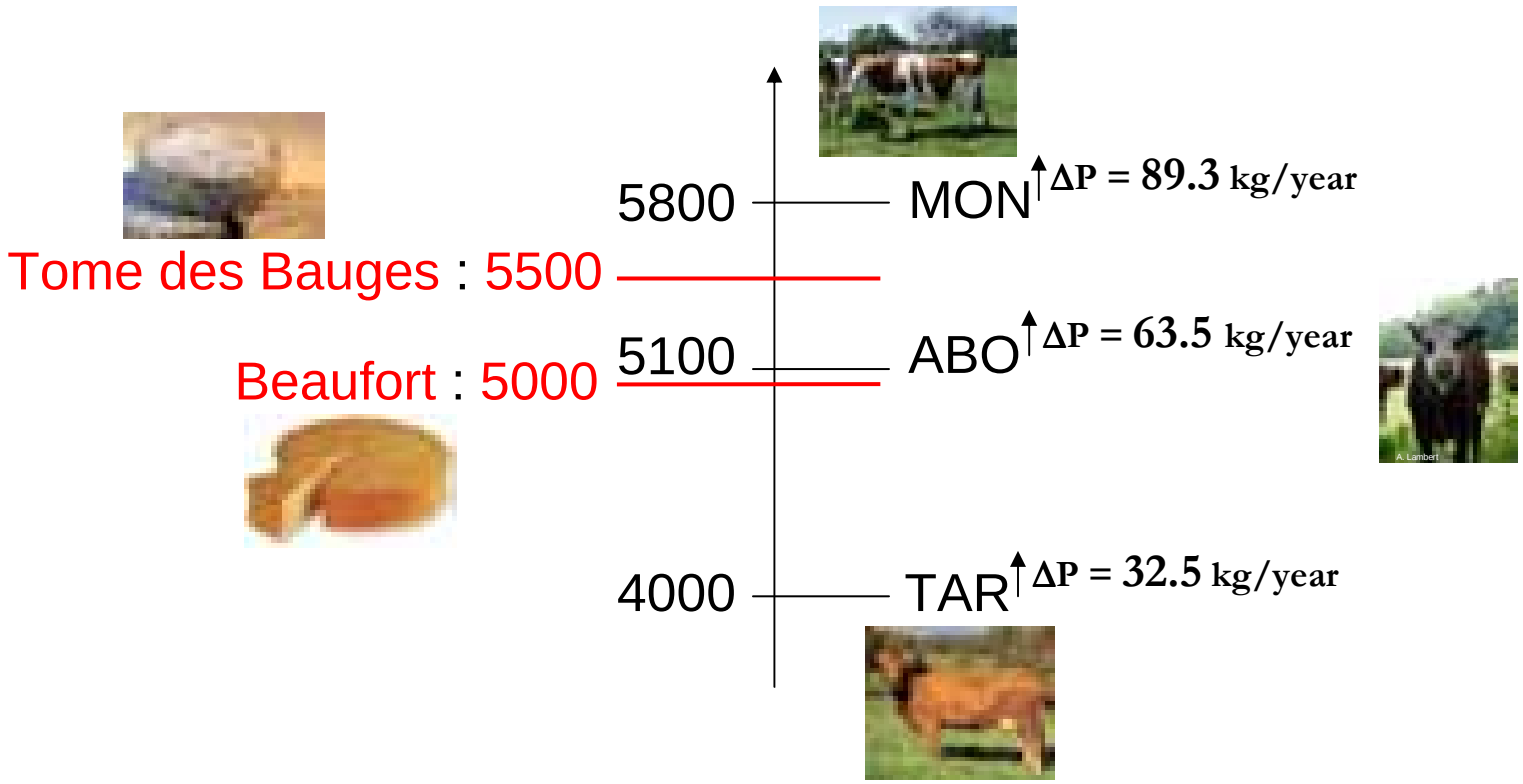
Ossau-Iraty : 300

175 — **MTR** ↑ΔP = 5.3 l/year

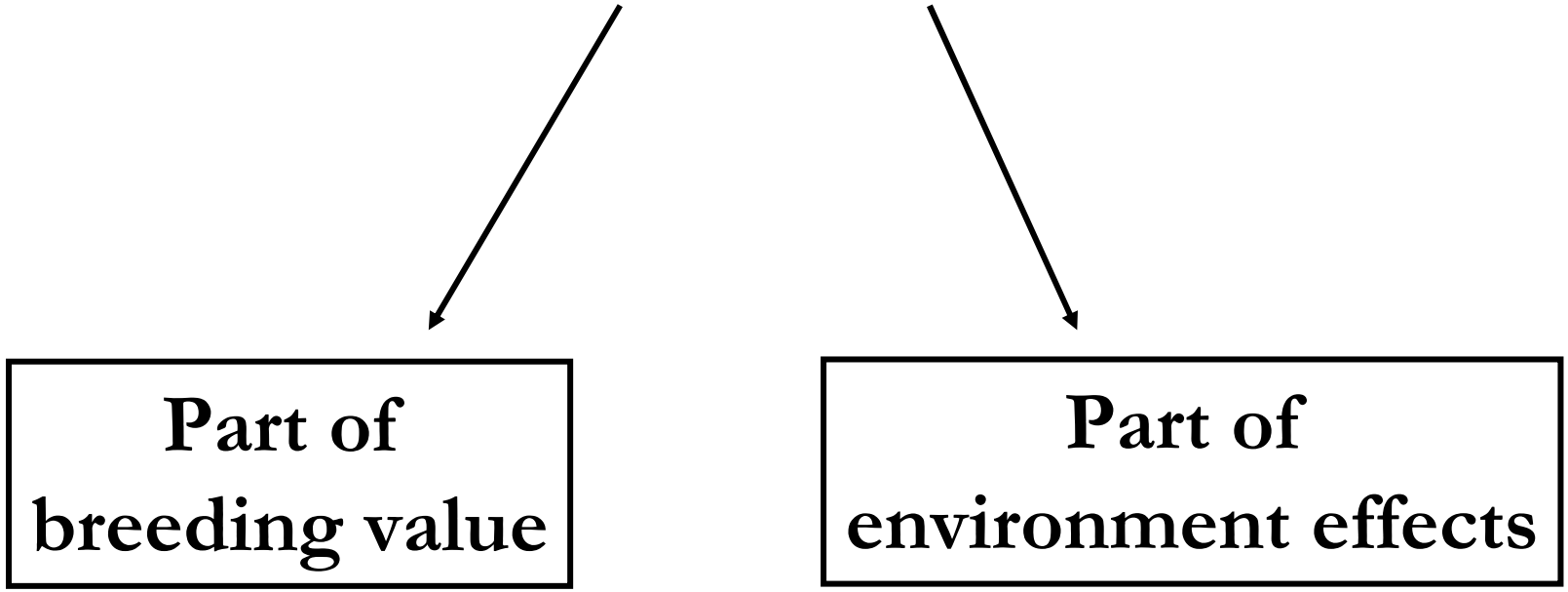
155 — **BB** ↑ΔP = 3.2 l/year

136 — **MTN** ↑ΔP = 3.5 l/year

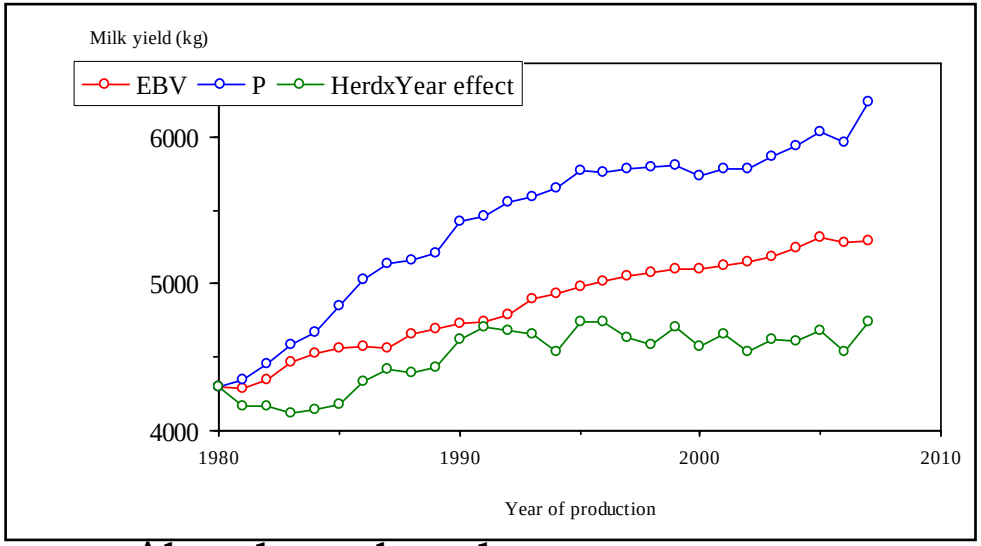
The production limit is not so easy to manage in the case of cow cheese in Northern Alps



Which factors explain such performance ?



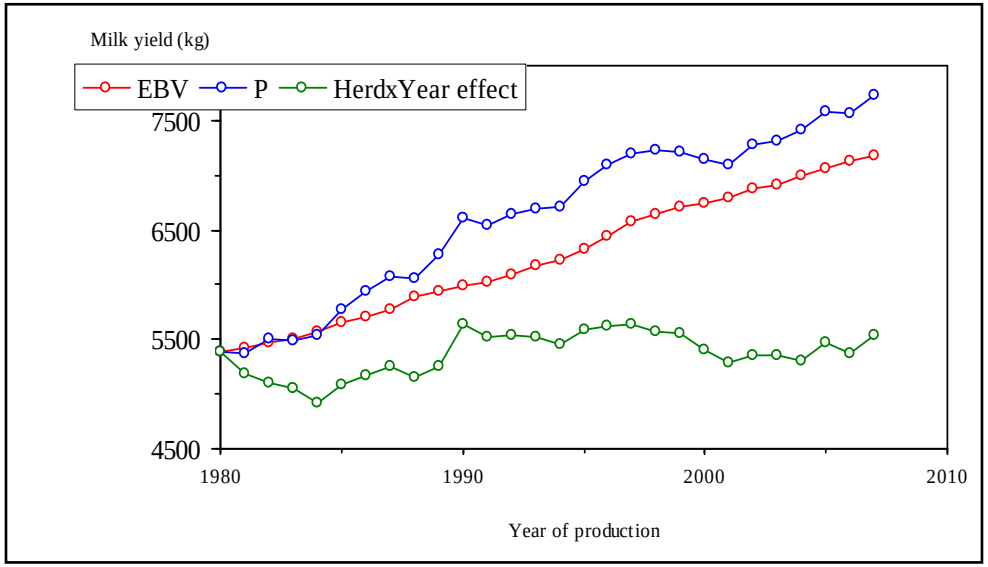
In case of Abondance and Montbeliarde breeds, genetic gain and improvement of the environment have cumulative effects on the phenotypic trend



Abondance breed

2 ways to limit milk production

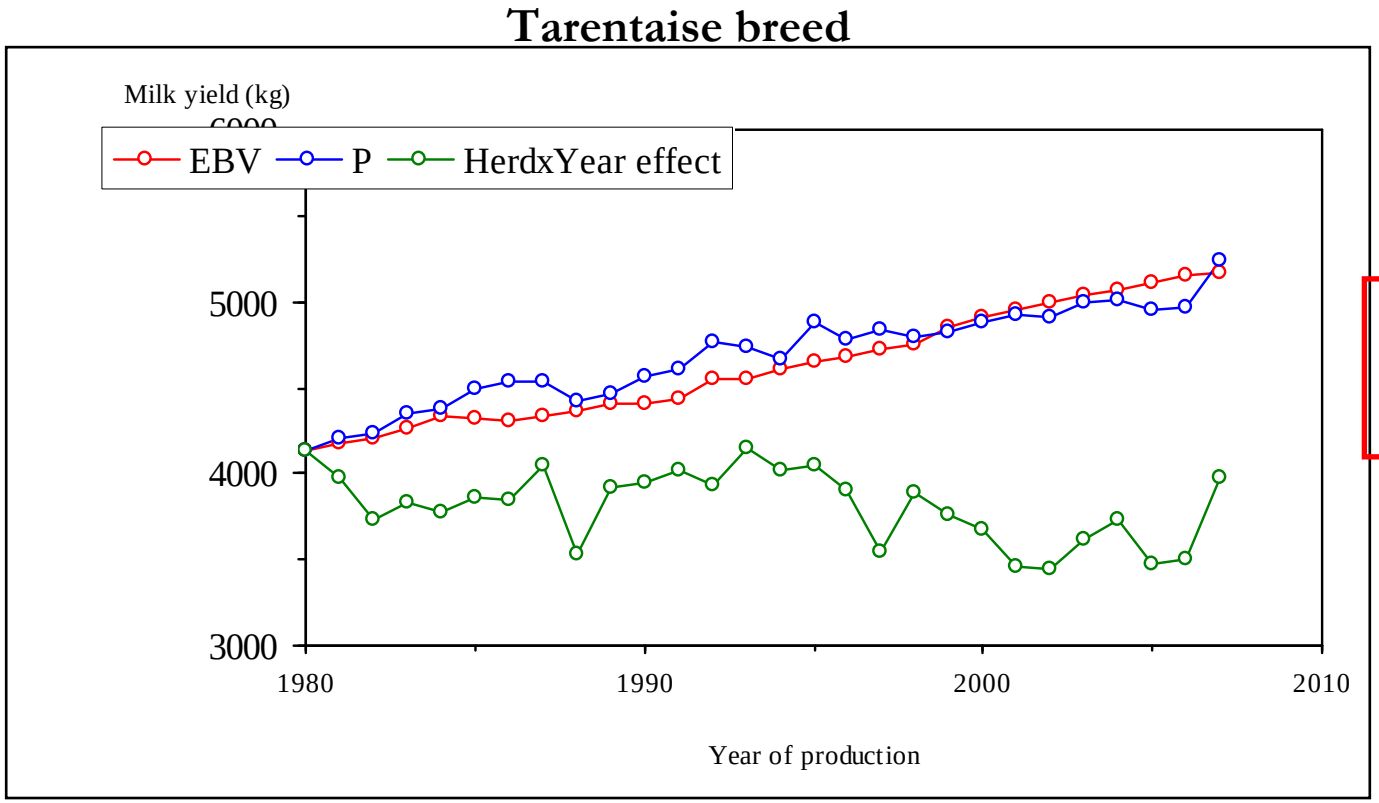
Montbéliarde breed



Evolution of performance per year of production :

EBVs and herd-year effects for milk yield

In case of Tarentaise breed, farmers limit the environment effects : the phenotypic trend is only due to genetic gain



1 way to limit milk production

Evolution of performance per year of production :

EBVs and herd-year effects for milk yield

Ewe and cow cheeses have different stakes of the production limit

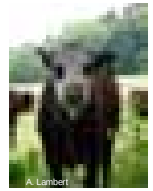
<u>Dairy ewes : not an important stake for the 3 breeds !</u>

All farmers : no risk of exclusion from the PDO

<u>Dairy cows : important stake of performance management</u>

Farmers owning Tarentaise breed :
no risk of exclusion from the PDO

Farmers owning Abondance and Montbeliarde breeds :
risk of exclusion from the PDO



Conclusion : 2 ways to deal with the production limit in PDO cheeses

- Collective tools : genetic orientation minimizes milk criterion …

Which farmers influence genetic choices ?

- Individual tools : farming practices do not allow to fully express the genetic potential

Are all farmers ready to accept such a situation ?

Which use of genetic progress ?