



Risks in the manufacture of medicated feed and their control

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What is Tecaliman ?



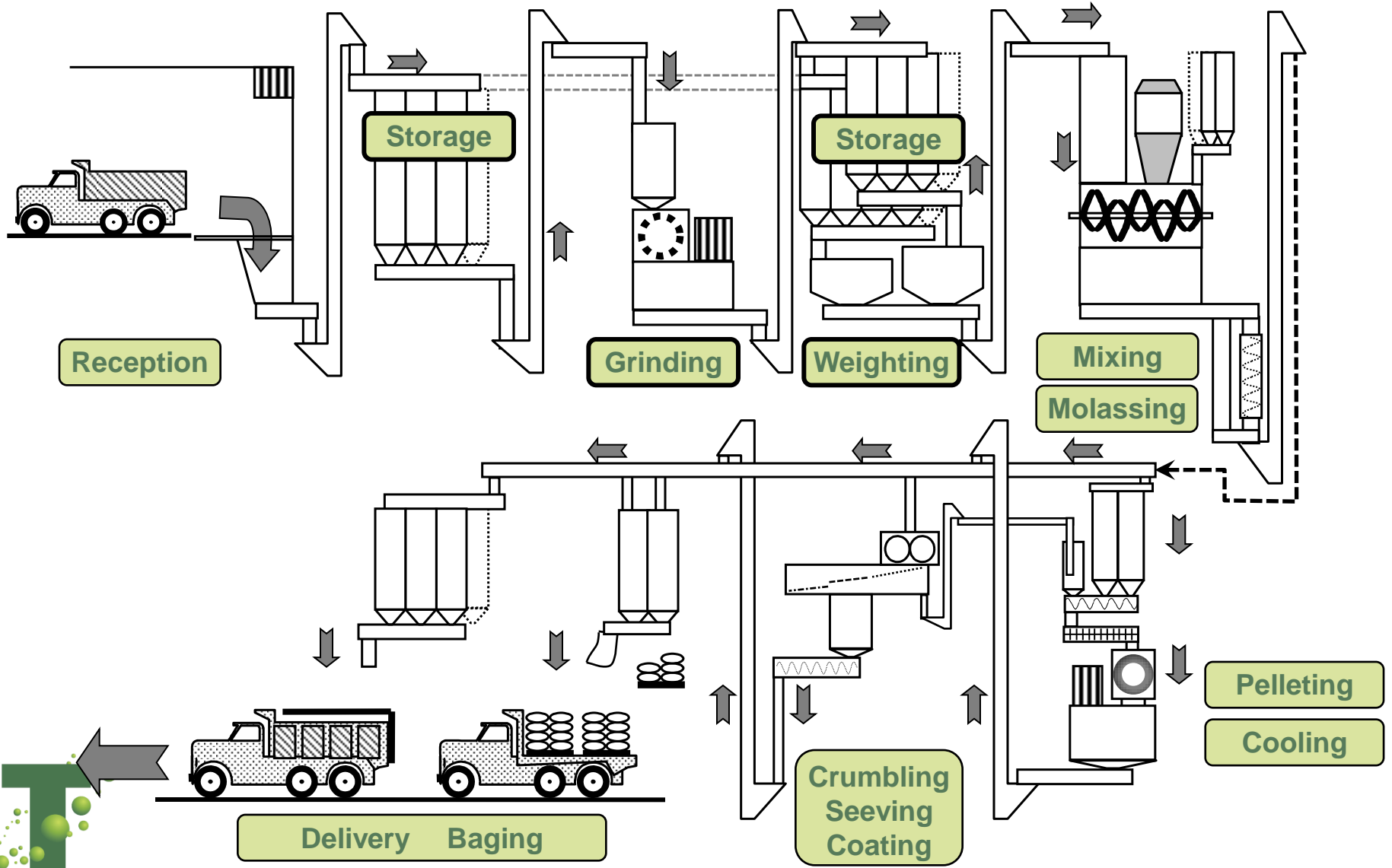
- **Association of the French feed industry founded 30 years ago by and for the feed industry**
- **Our work on technology management**
 - **Management of research projects on 3 axes**
 - **To progress in the control of processes and the reduction of energy costs**
 - **To increase feed safety & quality**
 - **To ensure worker safety, plan security and reduce the environmental impact of feed production**
 - **Developing guidelines for implementation of GMP**
- **Ours values**
 - **Independence, objectivity and confidentiality**

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Industrial feed production



Industrial feed production



Industrial feed production

● Feed production

● Handling

● Powders = Particles

- Raw materials (Grain, pellets, salt, ...)

- Premixes (Vitamins, minerals, additives, ...)

- Liquid, Steam

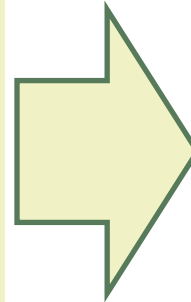
● Different ways

- Mechanical transfer, Pipes

- By hands

● Management

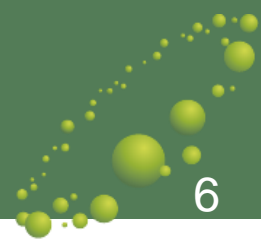
- Quality, HACCP, Traçability



This knowledge serves to bring VMPs to animals



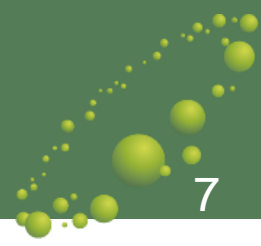
Medicated feed quality requires



- **Conformity of the expected concentration**
- **Homogeneity**
- **Limited carry-over**



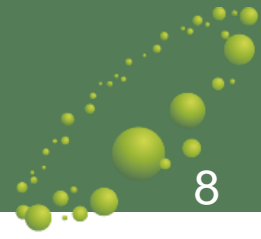
Carry-over management



- **Lowering carry-over is possible but ... “0” carry-over is impossible in feed mills**
- **How to reach low levels of carry-over ?**
 - **First point : No control without a good and accurate measurement**
 - **The right way is: the same method and the same requirement for everybody**



Carry-over management

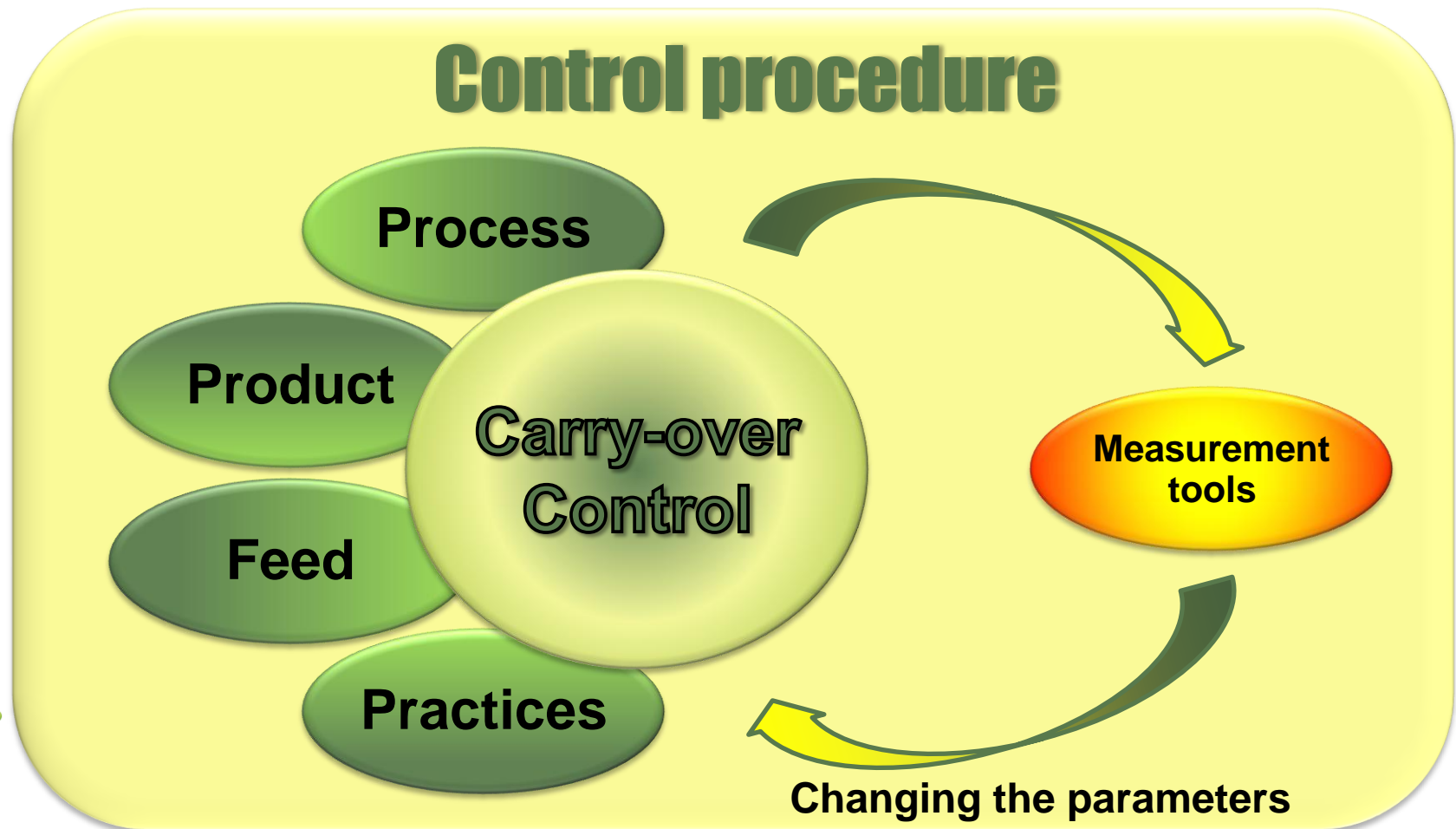


- **The cost of carry-over testing varies with the expected level of control**
- **The regulation is the same across the EU: the expected level of control should be the same**
- **But in all countries, the control on medicated feed is higher than on standard feed**

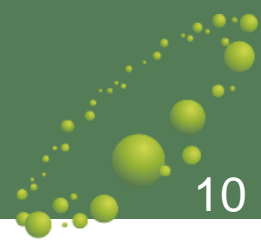


Carry-over management

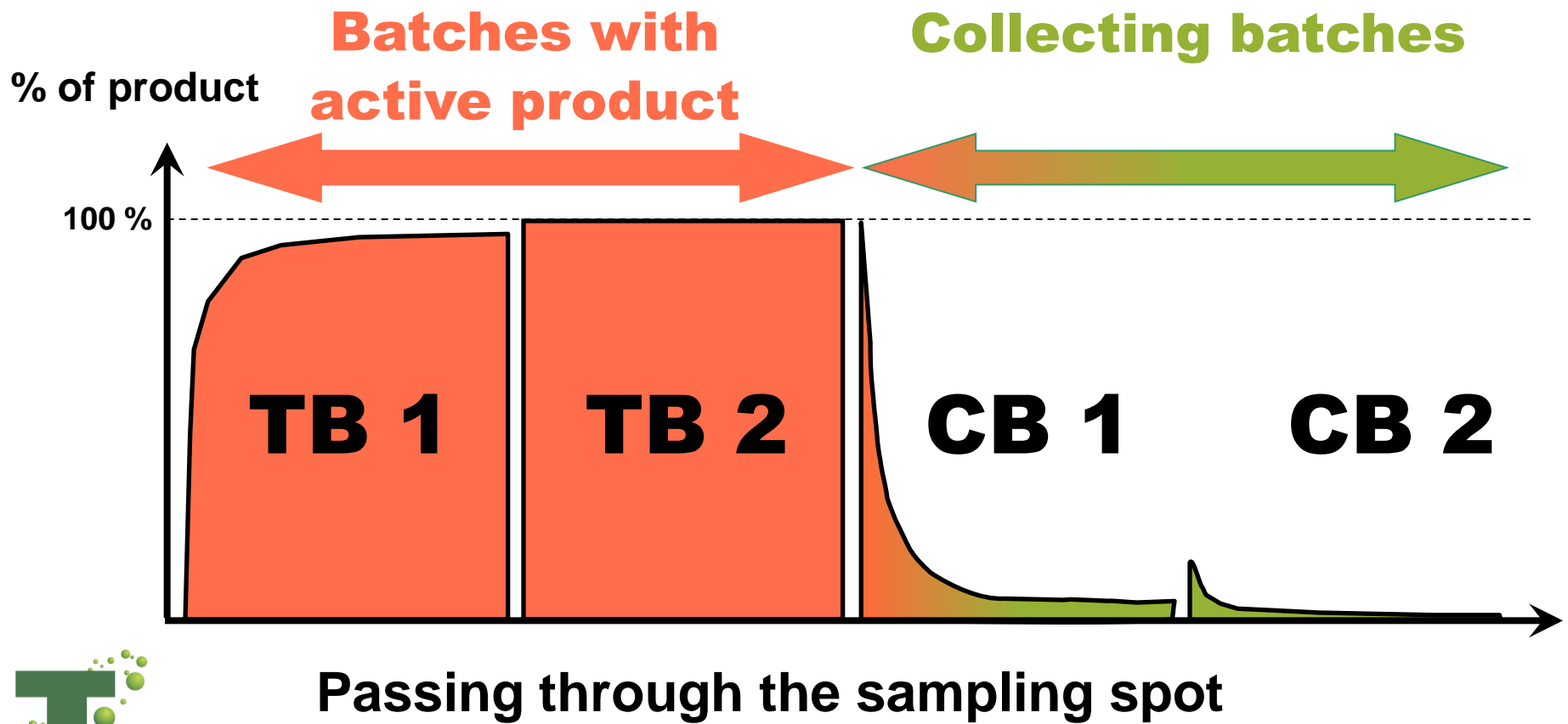
- Right measurement tools are needed to evaluate the impact of the changing the parameters



Carry-over management



● Example of measurement tools

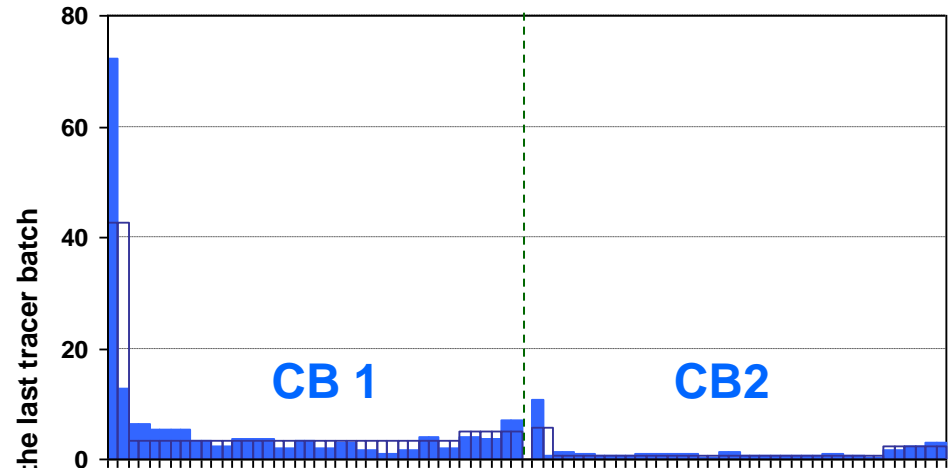


Carry-over management

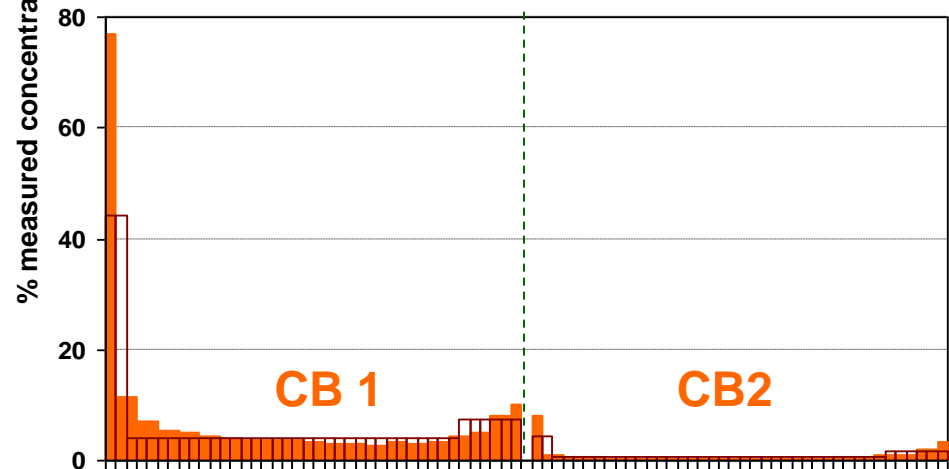
● Example of results

- 4 Batches 3 t (2 with tracer and 2 without : CB) – Turkey feed
- External tracer/drug

External tracer

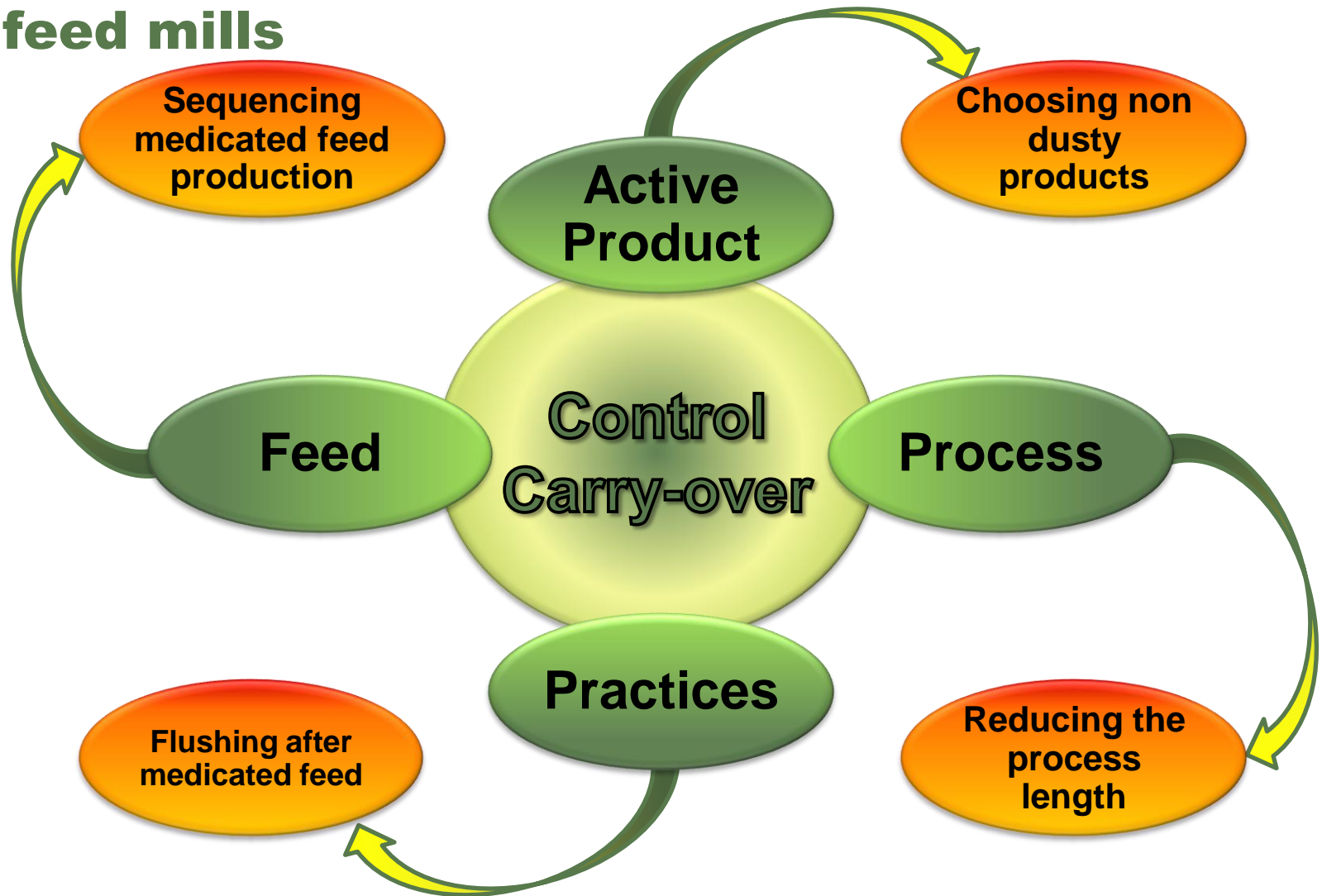


Drug



Carry-over management

● Different ways to reduce carry-over depending on feed mills



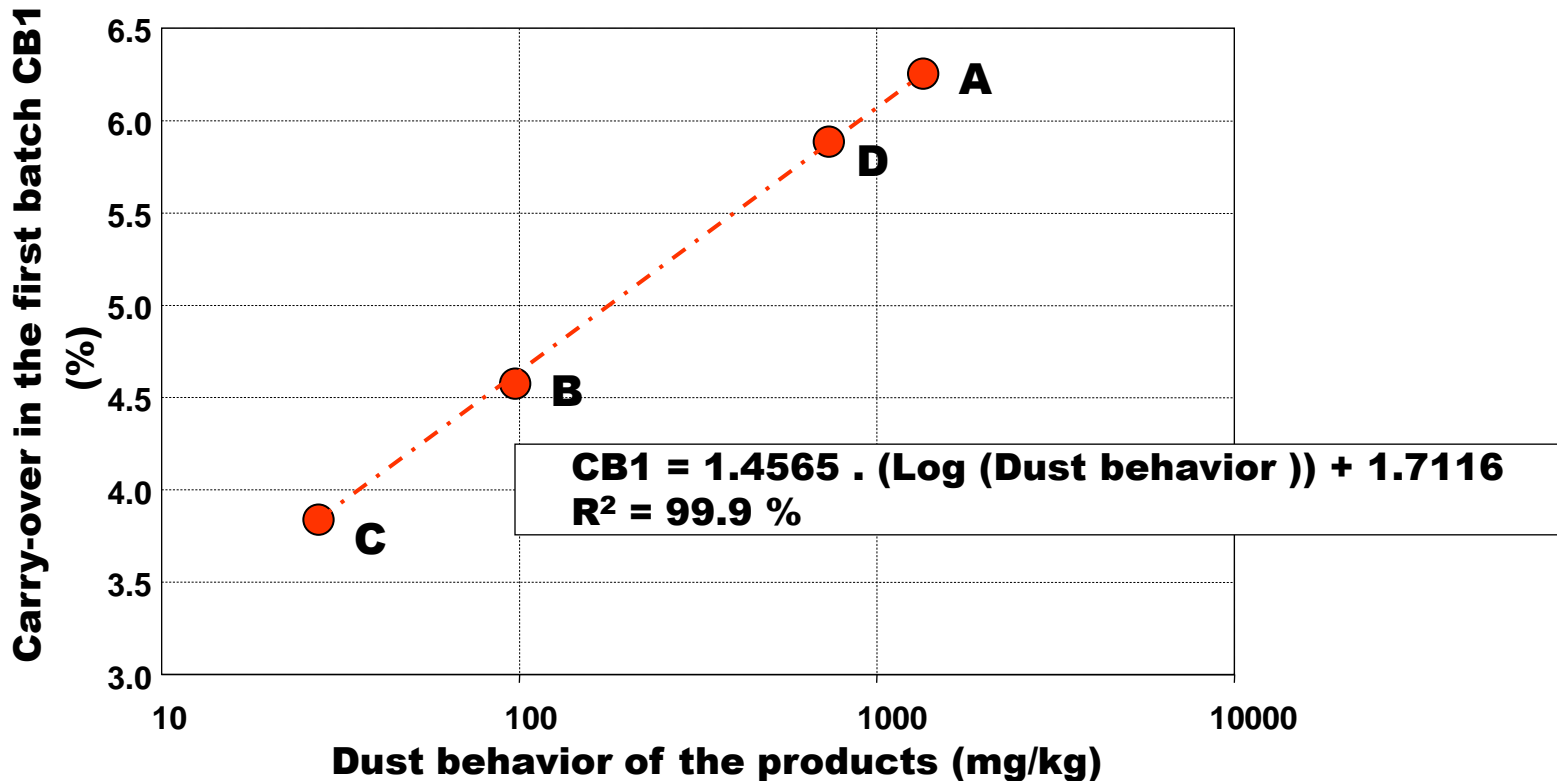
Carry-over management

● Example of ways to reduce carry-over

- Dusty effect of active products

- The feed industry handles particles not molecules

- Example of 4 different products in the same premix factory

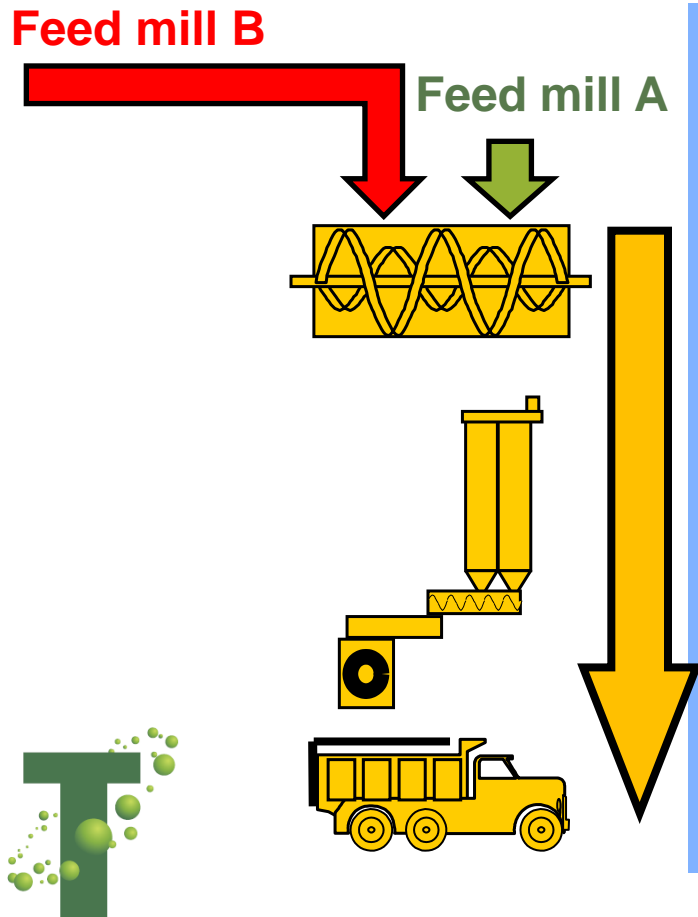


Carry-over management

● Example of ways to reduce carry-over

● Reducing the process length

Carry-over of the first batch CB1 (%)



Product 1		Product 2	
Feed mill A	Feed mill B	Feed mill A	Feed mill B
1.0	1.8	1.1	2.0
2.3	4.2	3.2	5.8
2.3	3.9	4.3	6.1

Carry-over management

● Carry-over in France

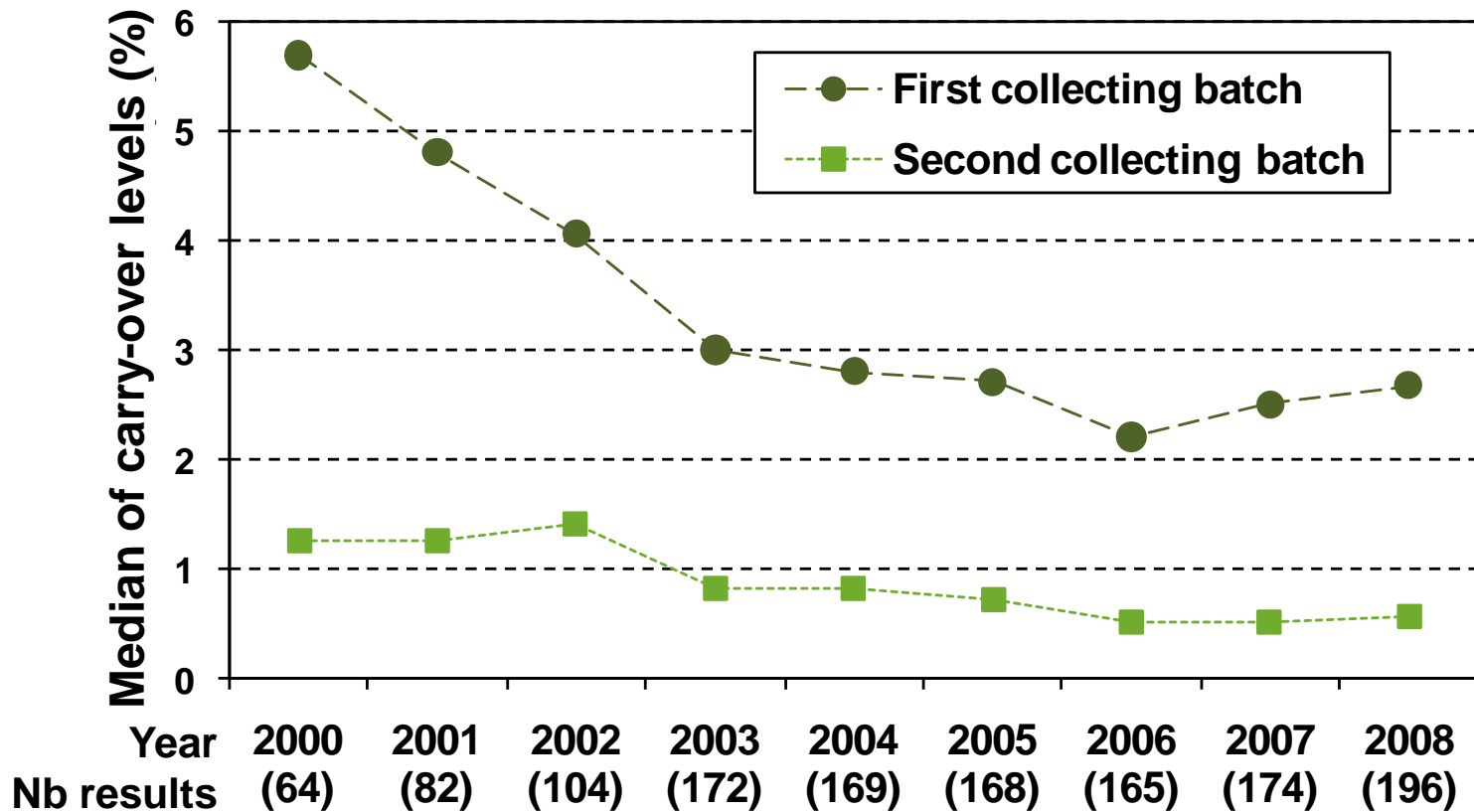
- **Controlled by ANSES (public authorities)**
 - **Specific approval and control for medicated feed production**
- **Test made by the feed compounders or independent institutes as Tecaliman**
 - **One test per year**
 - **Same rules since 2000**
 - **An external tracer used in more than 70 % of the test**
- **Enquiries about carry-over results in the French feed mills every 2 or 3 years**



Carry-over management

● Carry-over in France since 2000

- Additives and VMPs
- All feed mills and all results : Before or after corrective actions
- More control = Carry-over decrease



Conclusions

● **Carry-over control plan for all plants**

- 1. To get same carry-over measurement tools and same requirements**
- 2. To take into account as criteria for the VMP marketing authorization the condition of incorporation in multi-purpose feed mills**
- 3. To buy VMPs with the lowest carry-over potential: low dust behavior**
- 4. To reduce the length of the process before the mixer**
- 5. To produce medicated feed by sequence (sequencing)**
- 6. To flush after medicated feed sequence (flushing)**



Conclusions

- Preventive measures differ depending on the feed mills: HACCP
- Controlling carry-over in feed mill is possible
- Estimation of the number of contaminated batches eat by pigs during their life : 1 or 2 max.
- Traceability systems are efficient in the feed industry
- Feed industry handles particles not molecules
- Producing VMP by feed mill is a solution





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