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## Determinants of crop rotation choices by pig farmers in Brittany

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## Context and Issues

- Pig farms are defined by their herd management (number of animals and batches) rather than their land management (cropping plan)
- Interactions between herd and land management are often not studied
- In Brittany, pig farms have on average 65ha of cultivated area

Is the classical description of the pig farms useful for understanding the land management ?  
What are the others explaining factors of land management ?

## Conclusions

- Three kinds of cropping plans identified: **Wheat and Maize, Forage Production, Diversified**
- Cropping plan choice:
  - Not linked to herd size or number of batches
  - **Main factors are structural**: presence of a dairy herd or of a feed production unit on farm
  - Agronomy, economy, effluent management, land configuration, work are also involved
- Point out:
  - Priority given to dairy herd feed
  - Lack of cultivated area of specialized pig farms to produce the feed and their **simplified cropping plan**

## Material and Methods

28 swine farms were surveyed in Brittany. The sample is heterogeneous in size (from 130 to 1260 sows and from 24 to 270 ha of agricultural area), in effluent management and in existence of a feed production plan on farm. Data were analyzed by a content analysis and by principal component analysis (PCA) with hierarchical clustering.

## Content Analysis : reasons for cropping plan



## Groups identified by PCA and hierarchical clustering

	<b>Maize and Wheat</b> 15 farms	<b>Forage production</b> 10 farms	<b>Diversified</b> 3 farms
<b>Cropping plan (% agricultural area)</b>			
	■ Grain Maize, ■ Forage Maize, ■ Wheat, ■ Triticale, ■ Barley, ■ Oat, ■ Rapeseed, ■ Peas, ■ Alfalfa, ■ Fodder Beat, ■ Grassland, ■ Vegetables		
<b>Type of farms</b>	<b>Specialized pig farms with feed production facilities</b>	<b>Farms with pigs and dairy herds</b>	<b>Specialized pig farms with crops for selling only</b>
<b>Main reasons of cropping plans</b>	Produce the feed for pigs	Produce the forage for the dairy herd	Specific reasons for each farms, including price and agronomy

## Perspectives

- Which consequences on farm durability of those cropping plans ?
  - Capacities to cope with drought, subsidies dependency, facility of manure management ...
- Which effects on biodiversity and economy at the landscape scale ?
  - Simulate landscapes with one cropping plan or mixing cropping plans