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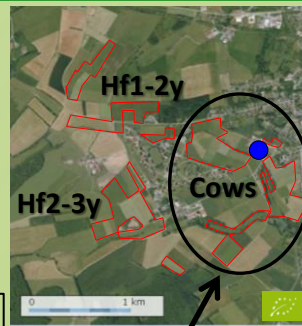
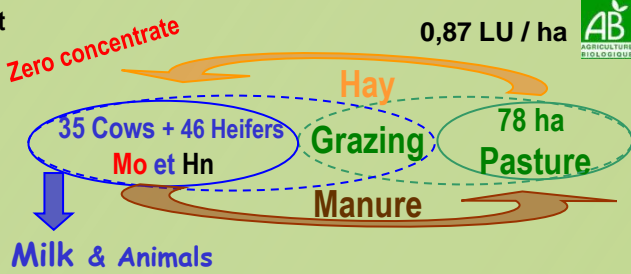
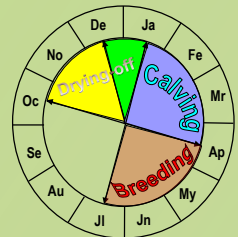
Pasture Utilisation in a self-contained organic dairy grazing system in northeastern France

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An exclusively grass-fed dairy herd farmed from permanent pasture over 11 years...

Dairy Herd Management



Year	Seasonal rainfall		
	Spring	Summer	Fall
2005	Green	Green	Yellow
2006	Green	Green	Yellow
2007	Green	Green	Yellow
2008	Green	Green	Yellow
2009	Green	Green	Yellow
2010	Green	Green	Yellow
2011	Green	Green	Yellow
2012	Green	Green	Yellow
2013	Green	Green	Yellow
2014	Green	Green	Yellow
2015	Green	Green	Yellow

Legend: Dry (Yellow), Normal (Green), Rainy (Blue)

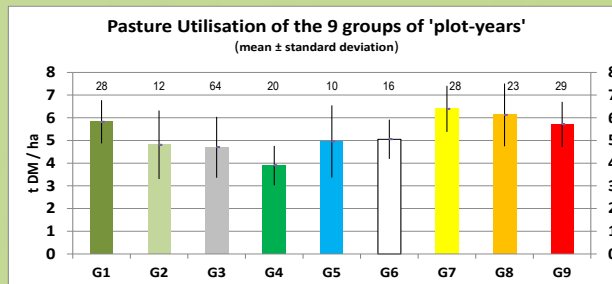
in reference to 1986-2015 period

Long-term experiment, Rotational grazing, 252 Grazing days per year (from Mr to No) 1,35 Cow / ha, 540 Kg DM hay / cow at grazing (6y /11) [vs 1482 Kg], 6070 Kg Milk / ha

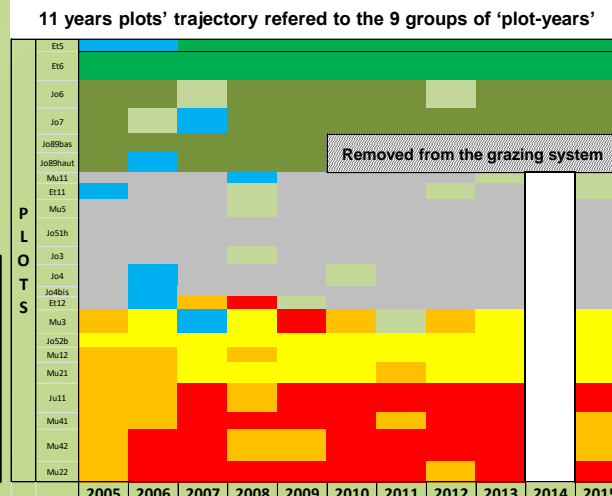
22 pasture plots / 34 ha

How to sum up the pasture utilisation experience issued from 11 years and 22 pasture ?

→ Describe jointly spatial and temporal variabilities of grass utilisation (assessed by 'HerbValo model' - Delagarde *et al.*, 2017) according to the specific plots features, climatic variations, grazing management and hay harvesting



Overall mean PU over the 11 years was $5.28 \pm 1.38 \text{ t DM ha}^{-1}$.
 Across plots and years total PU ranged from 2.26 to $9.07 \text{ t DM ha}^{-1} \text{ year}^{-1}$.
 Half of the 'plot-years' stands a grass intake larger than 80% of their PU: they were **just grazed** but some were **cut for refusals** after grazing.
 The other plots were both **grazed and cut for hay**.



G1, G3, G7 and G9 gather 65% of the 230 'plot-years' and give an accurate idea of the **two main ways of pasture use**:
 G1 and G3 were **only grazed** plots with eventually cuts for refusals whilst G7 and G9 were **mainly cut for hay then grazed**. The latter were spread with manure accordingly to the implemented fertilisation strategy.

Multivariate analysis and clustering provide a synthesis of the 'plot-years' diversity: **9 groups of units** to pool the plots with a same grazing function

- Only grazed -cut for refusals if any-
- Early grazed, cut then grazed
- Cut for hay then grazed

From year to year the plots nearly kept the same place inside the grazing management except in 2014 which was such a very special year that 16 out of 20 plots consist in a specific group.

Such a look at the pasture diversity could provide the farmers better skills for grazing management capitalising on the experience of variability