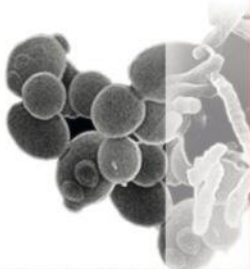


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On-farm corn silage investigation

Multi-analysis on silage practices, silage quality and its effect on aerobic stability

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Objectives

- Silage represents more than 50% of the dry matter intake with losses ranging from few to >20%
- Very few available and practical on-farm methods to analyze silage quality
 - Corn Silage Investigation
- Picture the current situation about farmer practices and their consequences



Material and method

- 2012 and 2013 seasons
 - Springs and summers (June - July)
- Corn silage on 149 dairy farms located in France, Italy and Greece
 - Different conditions
 - Different silage additives
- Investigation according to the standardized “CSI” method

Material and method

- Silage survey : CSI
 - Silage management
 - Field to fork
 - Silage quality
 - Temperature
 - pH
 - Density
 - Fermentation profile



Results

- Silos with high densities show lower temperature at the front face
 - Forage characteristics
 - Equipment
 - Method of packing
 - ...



	Density	Temperature
Low	209±47 kgDM/m ³	25±4.7°C ^a
High	238±48kg DM/m ³	22±3.0°C ^b

P<0.05

Results

- Bunker silos were significant cooler than drive over pile silos
 - More likely packed
 - Lower porosity

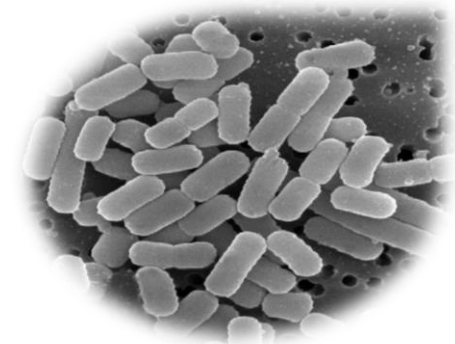
	Temperature	Mean density
Pile silos	25±4°C ^a	184.6 ^a
Bunker silos	24±3°C ^b	237.7 ^b

P<0.05



Results

- Silage treatment and aerobic stability
 - L.buchneri NCIMB40788* shows best aerobic stability, thus lower DM losses associated



	Temperature
Control	26±3.4°C ^a
Others	24±3.6°C ^a
L.buchneri NCIMB 40788*	22±2.7°C ^b

P<0.05

*applied at 300 000cfu/g



Results

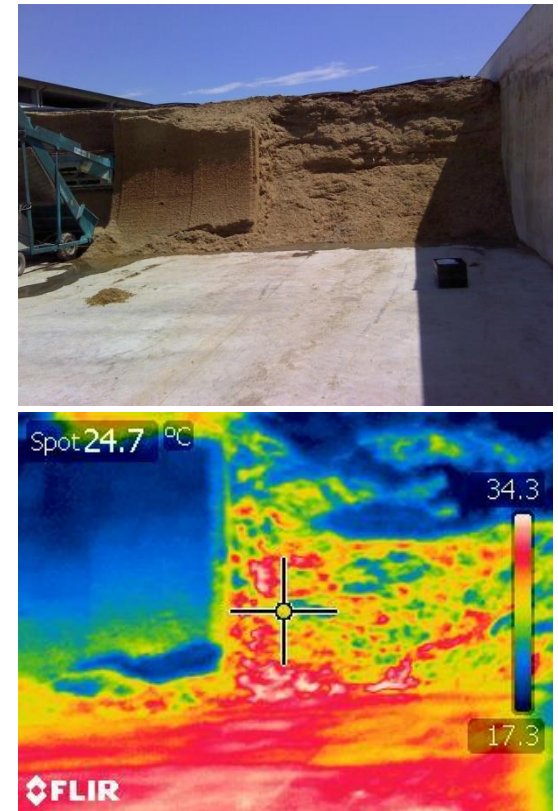
- Fermentation profile
 - L.buchneri NCIMB 40788 treatment gives greater concentration of acetic acid whilst no significant differences in pH or lactic acid
 - Higher acetic acid levels in silages give better aerobic stability

	pH	Lactic acid	Acetic acid
Control	3.85 ± 0.02	30.4 ± 2.62	11.1 ± 0.7 ^a
Others	3.83 ± 0.01	28.6 ± 4.70	18.7 ± 2.8 ^{ab}
LB 40788	3.80 ± 0.01	34.1 ± 3.47	21.2 ± 3.5 ^b

^{a,b} differ when P<0.05

Results

- Front face management
 - Low speedout increases the challenge (<20cm/day)
 - Time x Exposure
 - Equipment and method for defacing
 - Upward or downward moves



Conclusions

- Good silage quality is highly related to the sum of each good silage practices
 - Farmers practices not always in line with the golden rules
 - Appropriate silage inoculant has demonstrated its effect under various conditions
- Standardized method of analysis allows to detect margins of improvement

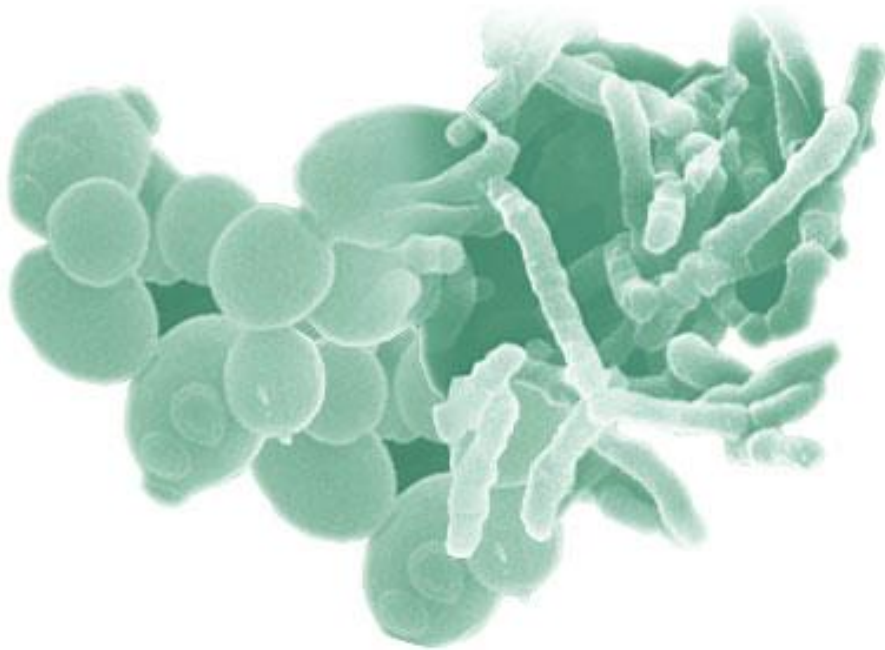
Thank you for your attention !



The logo consists of the word "LALLEMAND" in white, bold, uppercase letters, centered within a red oval shape.

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