



# BioStabil<sup>®</sup>

Introducing  
Lactobacillus kefir

**COMMISSION IMPLEMENTING REGULATION (EU) No 774/2013****of 12 August 2013****concerning the authorisation of a preparation of *Lactobacillus kefir* DSM 19455 as a feed additive for all animal species***Lactobacillus kefir* DSM 19455

Subclassification: Silage additive

Code: 1k20742

Commission Implementing Regulation (EU) No  
774/2013 of 12 August 2013

Date of first entry into register: 13.08.2013

Date of authorization: 02.09.2013

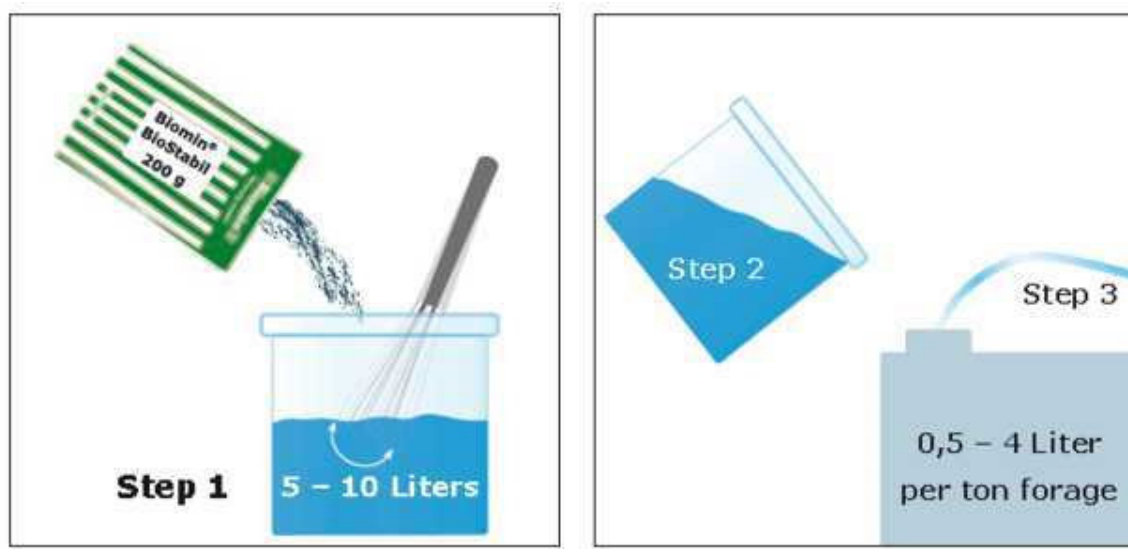
Expiry date of authorization: 02.09.2023



# ≡ Improved user-friendliness

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## New maltodextrin carrier



Presentation of the product unchanged

# ≡ Application

3 – 4 L/t



0,5 – 1 L/t



Water requirements:

- Water < 38°C
- Chloride < 2 ppm

Dosage:

- 4 g/ton fresh matter
- 0,5 – 4 liter per ton depending on machinery
- Use the solution within 24 hours

# ≡≡≡ Lactobacillus kefir

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Improved aerobic stability

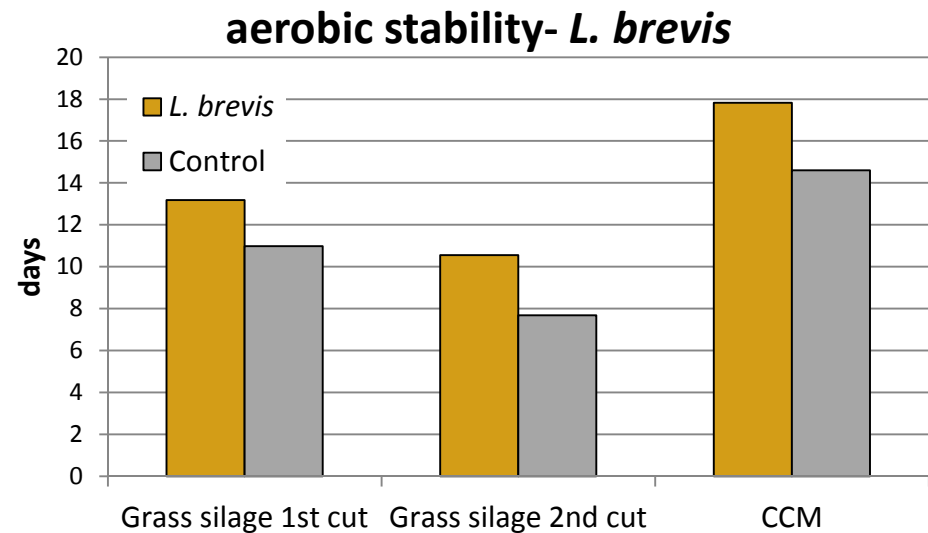
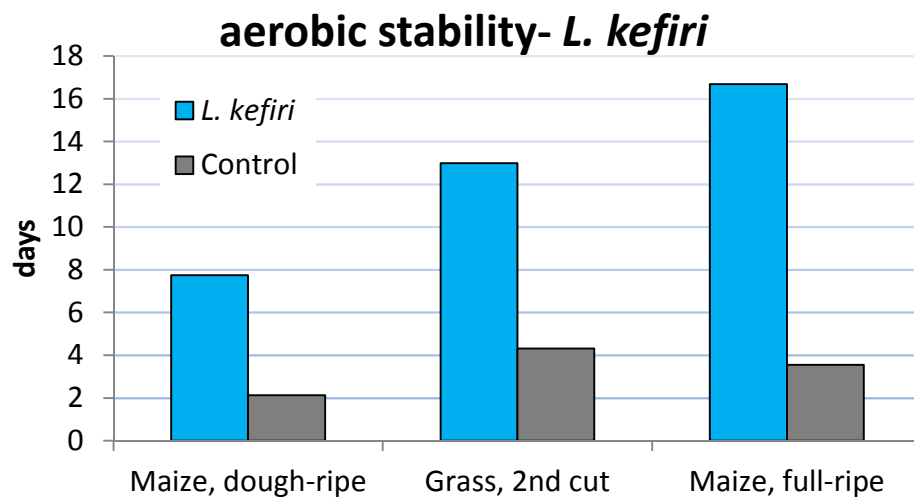
§ L. kefir improves the aerobic stability by increasing the production of acetic acid and reducing the silage pH.

§ L. kefir vs. L. brevis: L. brevis is a very efficient strain for improved fermentation. With the addition of L. kefir we improve the aerobic stability further. The two heterofermenters have different metabolisms, this is why L. kefir can improve the aerobic stability even more than L. brevis.



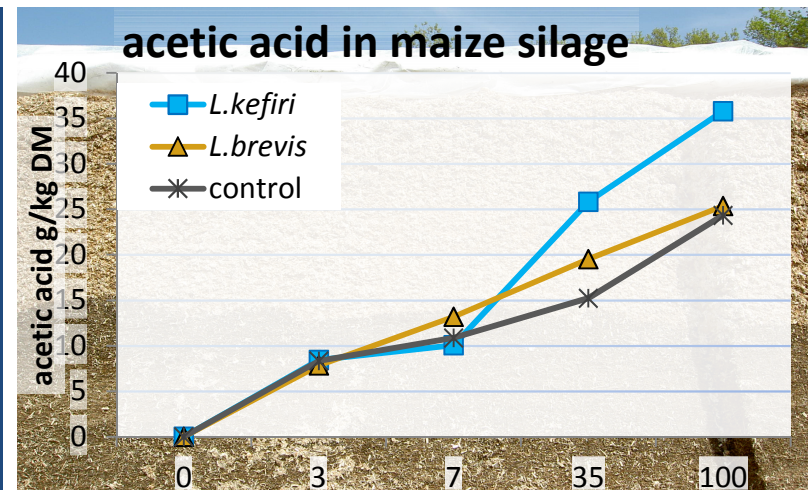
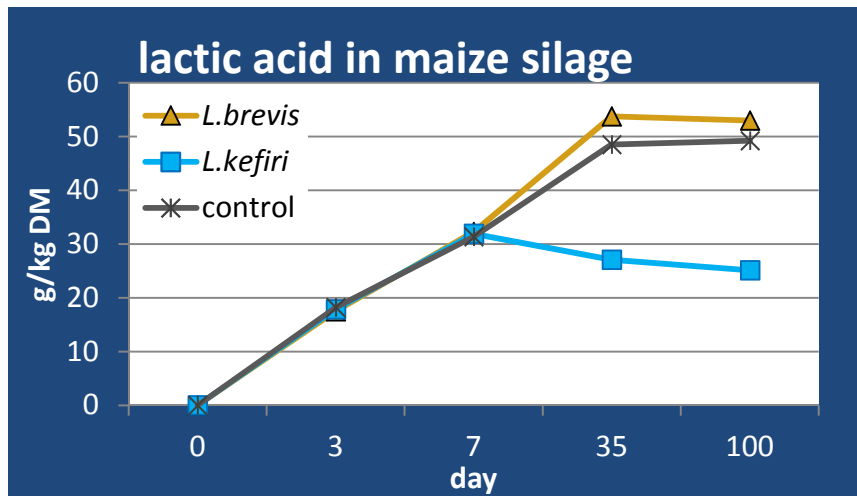
# ≡≡≡ *L. kefir* vs. *L. brevis*: aerobic stability

*L. kefir* adds extra aerobic stability to Biomin® BioStabil treated silages



# ≡≡≡ L. kefir versus L. brevis

1 sugar  $\rightarrow$  1 lactic acid + 1 acetic acid + 1 CO<sub>2</sub>  
 both heterofermentative strains produce lactic and acetic acid



Once most sugar is consumed, L. kefir transforms lactic acid into acetic acid. More acetic acid means better aerobic stability.

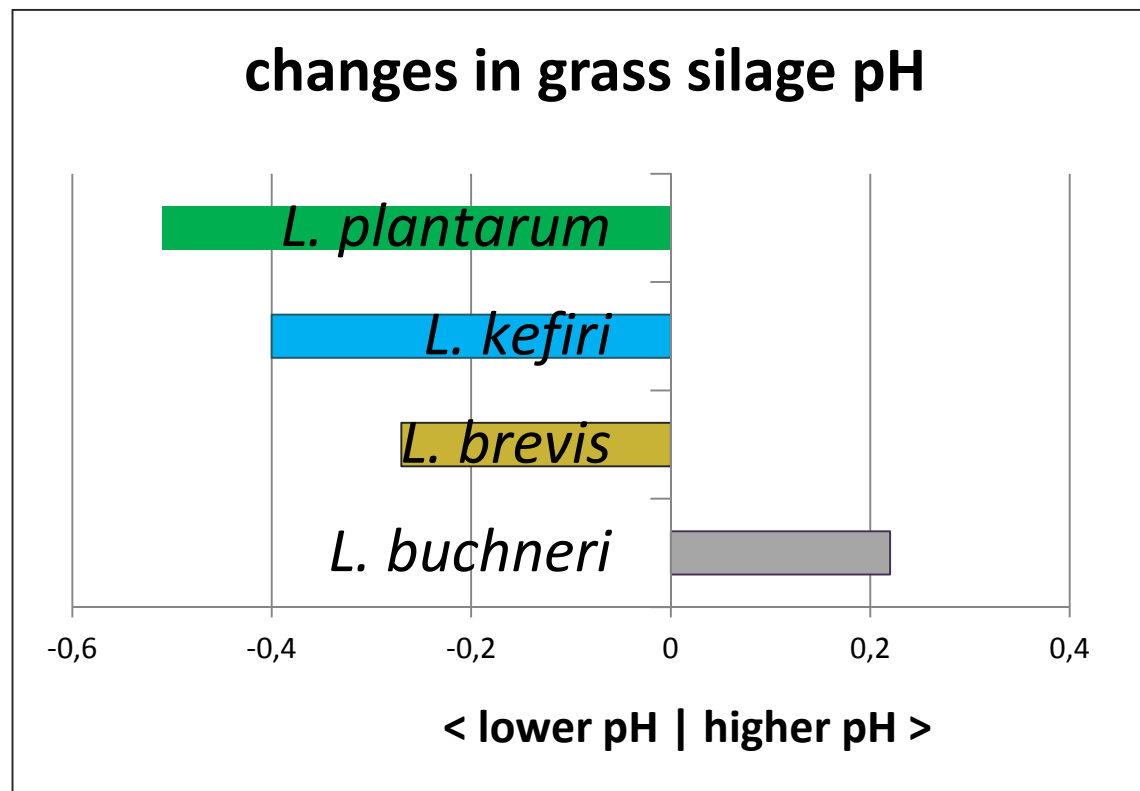
1 lactic acid  $\rightarrow$  0.48 acetic acid

0.48-propanediol + CO<sub>2</sub>

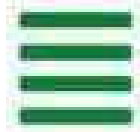
# Quick silage acidification

§ ...for improved fermentation

§ preserves energy and protein!



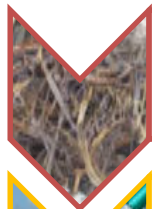




# Biomini<sup>®</sup> BioStabil

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**for ensiling a wide spectrum of crops**



- Longer bunker shelf life (aerobic stability)



- Better DM recovery



- Improves energy content



- Prevents protein breakdown



# new BioStabil trials

Naturally ahead

≡ **Biomin** ≡

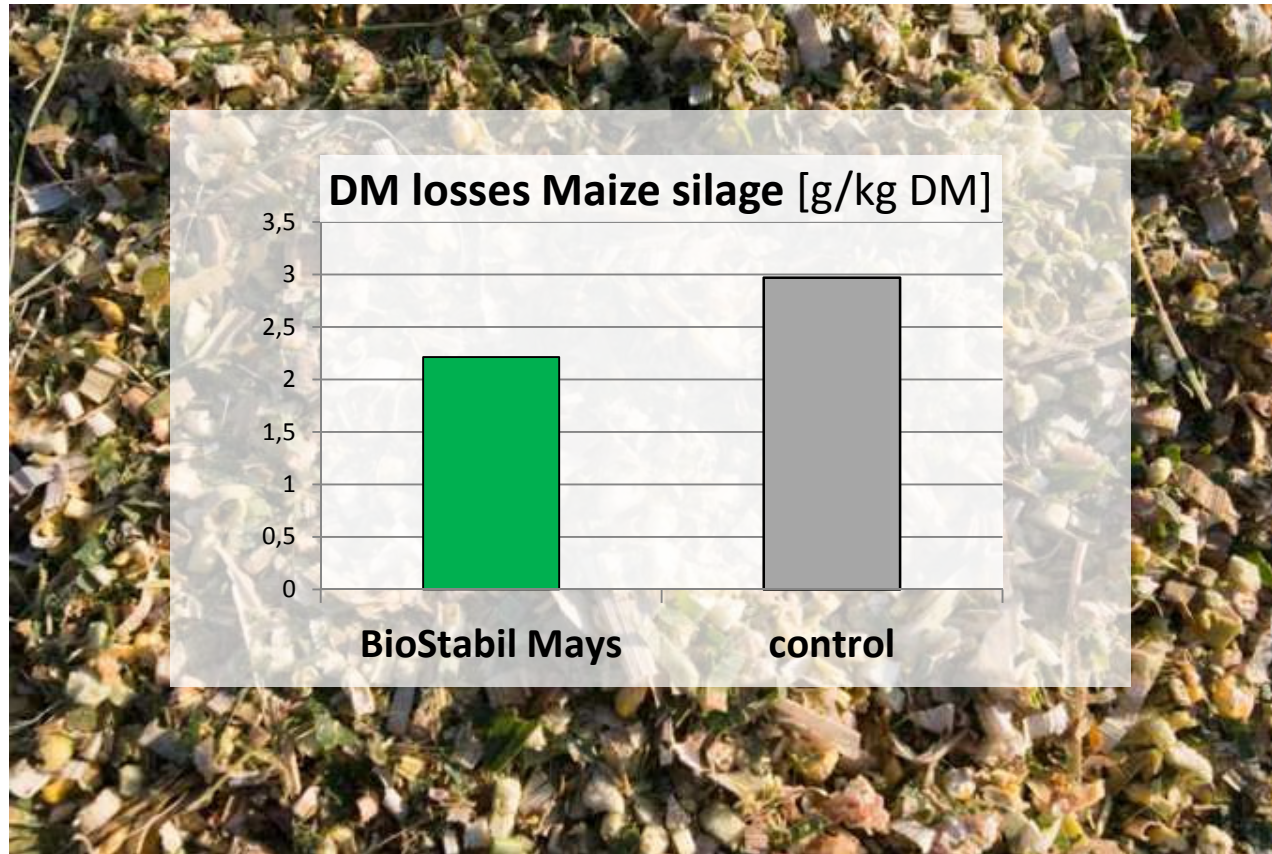
# ≡ overview field trials (with L. kefiri)

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crop	trial status
grass	samples currently being analyzed
legume	samples currently being analyzed
whole plant maize	in fermentation phase/ under analysis
CCM	in fermentation phase
whole corn maize	in fermentation phase



# ≡ Less DM losses with BioStabil Mays



DM losses were measured in whole crop maize silage from a BioStabil Mays (with *L. kefir*) field trial in Austria after one week of air exposure.

# ≡ Independent trial: lucerne/clover

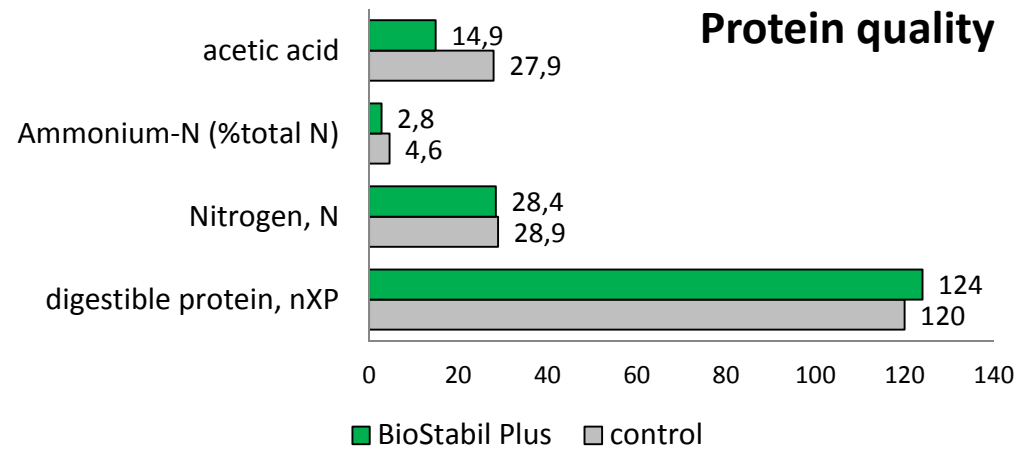
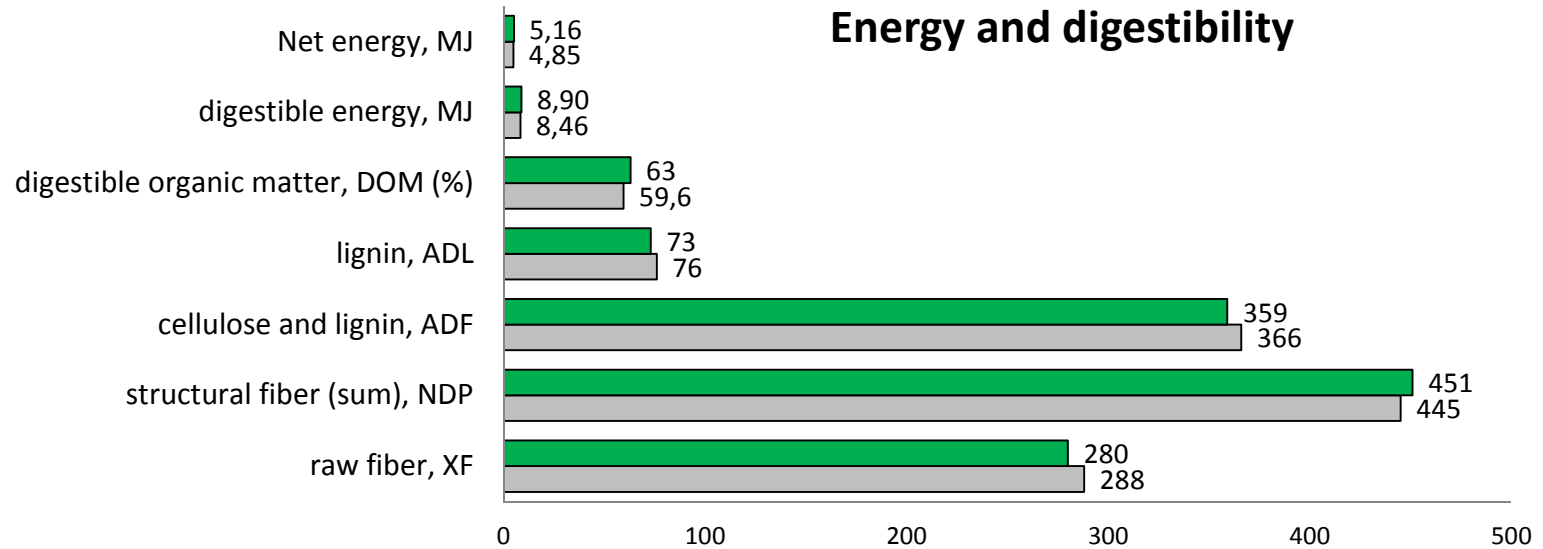
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with BioStabil incl. *L.kefiri*





# lucerne/clover: More energy & protein





## Alfalfa field trial with BioStabil® Plus with L.kefiri

Parameter	unit	control	BioStabil Plus	Change
dry matter (DM)	g/kg	344	384	11.6%
raw protein	g/kg DM	181	178	-1.7%
digestible protein	g/kg DM	120	124	<b>+3.3%</b>
raw fat	g/kg DM	34	33	-2.9%
raw fiber	g/kg DM	288	280	-2.8%
raw ash	g/kg DM	104	103	-1.0%
digestible organic matter	%	59.6	63	<b>+5.7%</b>
Metabolisable Energy (ME)	MJ/kg DM	8.46	8.9	<b>+5.2%</b>
Net Energy Lactation (NEL)	MJ/kg DM	4.85	5.16	<b>+6.4%</b>
pH		4.7	4.5	<b>-4.3%</b>
lactic acid	g/kg DM	33.2	35.7	<b>+7.5%</b>
acetic acid	g/kg DM	27.9	14.9	<b>-46.6%</b>
butyric acid	g/kg DM	0.9	0.8	<b>-11.1%</b>
ammonia (NH3)	NH3-N (%)	4.6	2.8	<b>-39.1%</b>