

BioEnergy

News



Biogas from grass

SILASIL ENERGY.BG helps you effectively preserve your grass

Grass silage is increasingly coming into focus as feedstock for anaerobic digestion (AD) plants. Production of high quality and energy-rich silages requires special care, though, when dealing with grass. The Julius-Kühn-Institute (JKI) in Braunschweig/Germany has carried out several field studies on grass cultivation and its optimisation in terms of fertilization and yields per hectare at different harvesting times. The nutrient composition in grass and consequently its usability (in animal nutrition = digestibility) differs greatly between single cuts. Among others, methane yields per hectare heavily depend on an optimal harvesting time and a silaging regime allowing for as few energy losses as possible. Moreover, the

naturally occurring content of lactic acid bacteria is subject to considerable seasonal and weather-dependent fluctuations. This can, in combination with a high buffering

capacity in the harvested material, lead to insufficient pH-reductions in the clamp. The resulting spoilage frequently causes significant energy losses.

Fig. 1: SILASIL ENERGY.BG rapidly and persistently reduces the pH.
Development of pH-value during silaging / Grass type: Zarastro, Italian ryegrass, 4th cut

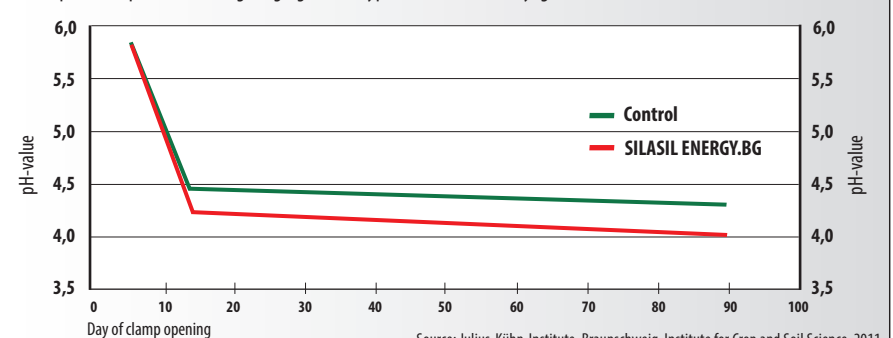
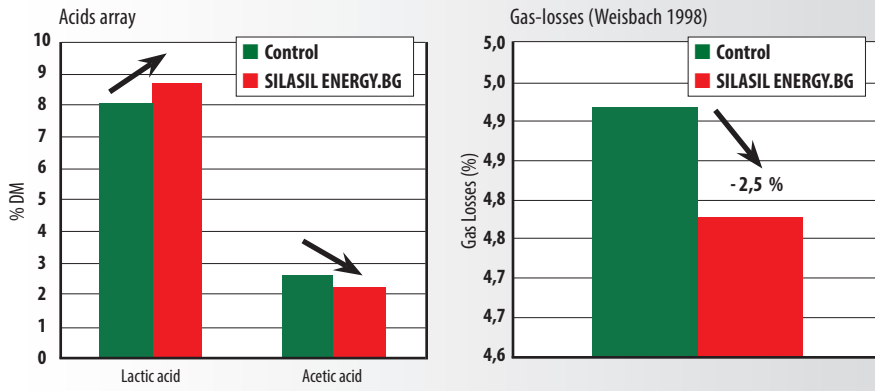
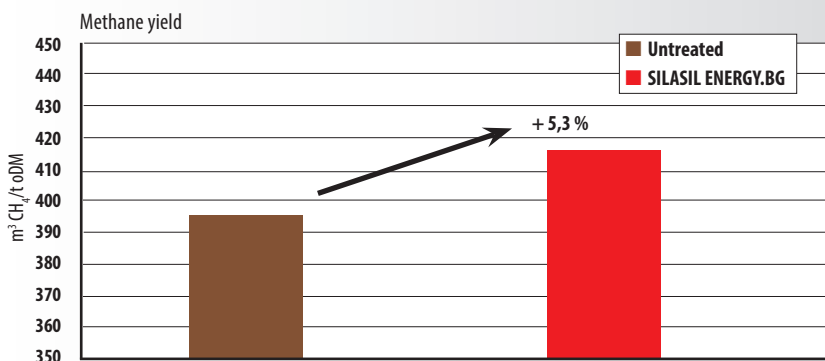


Fig. 2: SILASIL ENERGY.BG alters the fermentative acids array and decreases energy losses during anaerobic digestion by 2.5 %.



Source: Julius-Kühn-Institute, Braunschweig, Institute for Crop and Soil Science, 2011

Fig. 3: SILASIL ENERGY.BG increases methane yields by 5.3 %



Source: Julius-Kühn-Institute, Braunschweig, Institute for Crop and Soil Science, 2011

The effects of SILASIL ENERGY.BG were studied in an experimental setup at JKI. For this purpose, Italian ryegrass from a cultivation experiment's fourth cut was conserved in two batches, with and without the addition of SILASIL ENERGY.BG, respectively. Analyses of fermentative acids, Weender nutritional analysis as well as gas yield determination in a standard batch-test were conducted at JKI.

From an early stage, SILASIL ENERGY.BG showed its beneficial effects in rapidly and persistently reducing the pH below the cri-

tical threshold (see Fig. 1). The fermentative acids array was altered in crucial parameters, reducing gas losses by 2.5 % (see Fig. 2). Furthermore, the methane yield tests showed a 5 %-increase in methane compared to the non-treated variant from the identical raw material due to the cumulative effects of SILASIL ENERGY.BG.

Dr. Dirk Banemann, Schaumann BioEnergy
Dr. Jörg Winkelmann, Schaumann BioEnergy