

MAXFIBER

FUNGAL FERMENTATION PRODUCT FOR RUMINANTS

MAXFIBER functional feed material products originate from solid-state fermentation of five different fungal strains. They may be added unrestricted to complementary and compound feeds for farm animals; therefore, they provide increased flexibility in formulating rations. **MAXFIBER** products are a convenient way to increase feed efficiency of various feeding concepts in dairy and beef cattle operations.

OPTIMIZE RUMEN EFFICIENCY

The cost-effectiveness of cattle feeding can be improved by addressing the total digestibility of the ration. This increases nutrient availability in the ration, which positively affects both feed efficiency and milk yield. **MAXFIBER** products can help improve digestibility of a wide variety of diets and feed qualities.

A combination of five fungi is used in developing two different products. **MAXFIBER** is specifically designed for forage-based diets that are rich in fiber-carbohydrates (cellulose, hemicellulose) and contain a high forage-to-concentrate ratio. **MAXFIBER/HSD** improves the digestibility of high-starch diets that are rich in non-fiber carbohydrates (starch, pectins) and contain a low forage-to-concentrate ratio.



MAXFIBER

- Optimizes rumen metabolism
- Decomposes cell wall fraction
- Increases nutrient utilization



MAXFIBER/HSD

- Improves living conditions for ruminal bacteria
- Promotes efficient digestion of fiber and starch fractions
- Increases milk production and feed efficiency

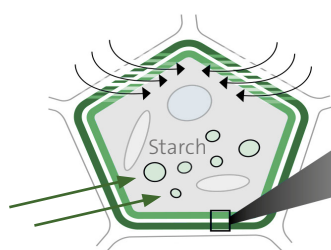
IMPACT ON CELL WALL AND CARBOHYDRATE FRACTION

Extensive feed utilization and optimized rumen metabolism are key to profitable dairy and beef production. Because the digestibility of crude fiber in feed rations can vary widely depending on the quality of the feedstuffs, it's important to optimize overall rations for improved nutri-

ent conversion. **MAXFIBER** products offer great potential for increasing ruminal fermentation rates in dairy and beef cattle, as they promote the decomposition and fermentation of a wide range of cell wall and carbohydrate fractions (rates vary by product).

IMPACT ON CELL STRUCTURE

MAXFIBER



Cell Content: starch, sugar, pectins

Hemicellulose (NDF)
Lignin (ADF, NDF)
Cellulose (ADF, NDF)

Feed intake
Passage rate

RUMINAL FERMENTATION

- ↑ Organic matter
- ↑ Volatile fatty acids
- ↑ Microbial mass

Digestibility
Conversion

MAXFIBER-EFFECTS

- ↗ Feed efficiency
- ↗ Milk production
- ↘ Nutrient losses

Source: Advanced Forage Management, 1999

PERFECT COMPONENTS. MAXIMUM RESULTS.

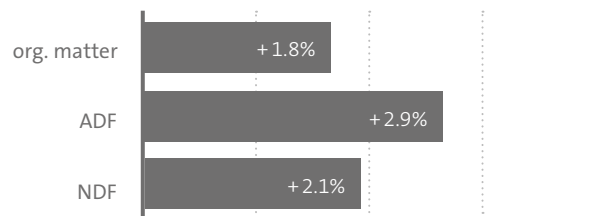
ENHANCING RUMINAL FERMENTATION

MAXFIBER

MAXFIBER promotes the decomposition and fermentation of a wide range of carbohydrate fractions in the rumen. A field trial used the indicator method to investigate the influence of **MAXFIBER** on the digestibility of NDF, ADF and organic matter. A significant increase in the digestibility rates of structural substances and organic mass was shown in dairy cows that were fed rations containing **MAXFIBER**. Figure 2 shows the relative changes in digestibility of the individual fractions compared to the control.



F2: MAXFIBER effects on the feed conversion of dairy cows. Field trial, n = 80, cross-over trial: 2x8 weeks



rel. changes in digestibility of the individual fractions compared to the control group

Source: ISF, 2014

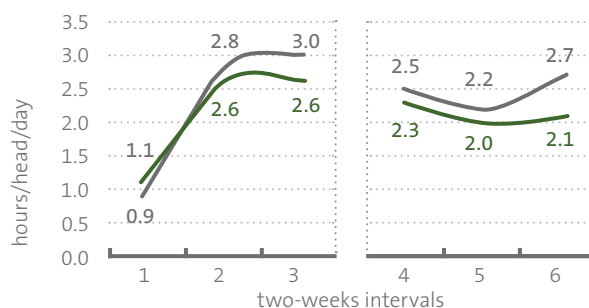
MAXFIBER/HSD

The effect of **MAXFIBER/HSD** on ruminal pH level was tested in a field trial lasting for 12 weeks. Rumen boli for measuring pH value were implanted in selected fresh lactating cows. Six weeks into the test, the groups were swapped to exclude animal-specific differences in ruminal pH levels.

MAXFIBER/HSD was shown to provide a positive influence on the rumen. Compared to the control group, the treated group experienced decisive differences in the time that rumen pH remained below 5.8. Feeding **MAXFIBER/HSD** can help to reach moderate pH levels faster, decreasing the acidosis risk associated with high-starch diets.



F3: Influence on rumen pH Value in high-starch-diets n = 10, cross-over trial: 2x6 weeks, Ø 40.1 kg milk/day



Source: ISF, 2014

CONVINCING EFFECT OF MAXFIBER PRODUCTS IN PRACTICAL USE

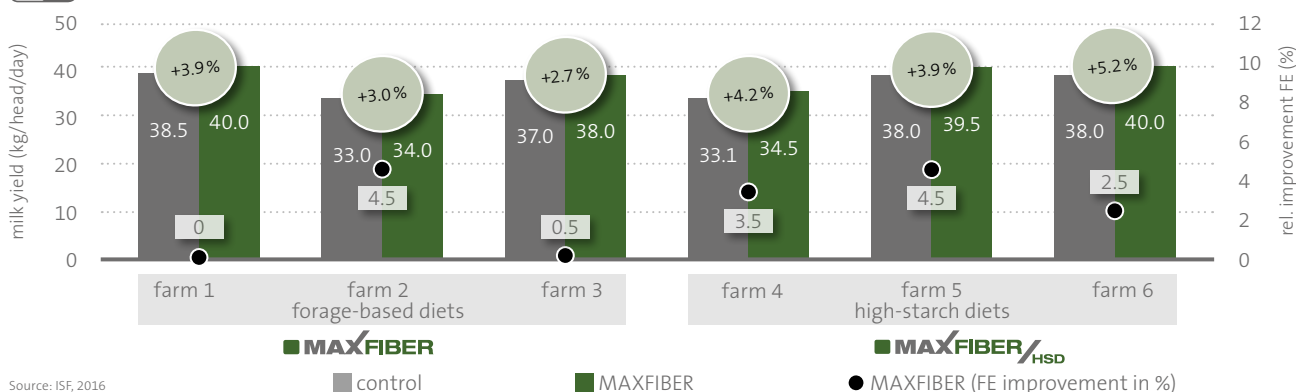
Research conducted on 840 dairy cows from six different farms showed the efficacy of **MAXFIBER** products in terms of feed efficiency (FE) and influence on milk yield. Forage-based diets were treated with **MAXFIBER**, and high-

starch containing diets were treated with **MAXFIBER/HSD**. Test results showed an increase of approximately 2.6% in feed efficiency and 1.4 kg in daily milk gain.



F4: Effect of MAXFIBER on milk yield and feed efficiency in dairy cows

Trial Setup: 6 farms, n = 840, Ø 140 cows per farm, Ø 37.0 kg milk, 150 days in milk



Source: ISF, 2016