



CASE STUDY · DAIRY

Sprouted barley at 10% of ration dry matter in lactating Holsteins

A peer-reviewed university dairy trial (Zang et al., 2024, *Journal of Dairy Science* 107(8):5529–5541) is the strongest controlled evidence for sprouted barley in a lactating ration. This case study summarises what was done, what was found, and what it means for a commercial TMR.

Design

Lactating Holstein cows were fed a control TMR or a TMR in which sprouted barley replaced 10% of ration dry matter. Intake, milk yield, milk components and nitrogen partitioning were measured under controlled conditions.

Results

1.49

Milk / DMI

vs 1.43 control (+4%), $P < 0.01$

1.85

ECM / DMI

vs 1.73 control (+7%), $P < 0.01$

30.5%

Milk nitrogen efficiency

vs 28.8% control, $P < 0.01$

Measure	Control	Sprouted barley 10% DM	Read
Milk per lb dry matter intake	1.43	1.49	+4%, significant
Energy-corrected milk per lb DMI	1.73	1.85	+7%, significant
Milk nitrogen efficiency	28.8%	30.5%	Less N to manure
Milk yield	—	unchanged	Gain came from lower intake

Read this before quoting the numbers. The efficiency gain came from lower dry matter intake at unchanged milk yield — cows produced the same milk on less feed. That is exactly what feed efficiency means, but it is not a milk-yield increase and should never be presented as one.

What it means for a commercial TMR

- **Feed efficiency is the defensible headline.** A 4–7% efficiency gain on a 1,000-cow dairy is a material change in feed cost per cwt of milk.
- **Nitrogen efficiency has a regulatory angle.** Higher milk N efficiency means less nitrogen excreted — relevant to nutrient-management plans and CAFO permits.
- **Ration protein matters.** A second trial (Wu et al., 2024) found the milk-yield response to sprouted barley depended on ration protein: positive at 16.8% CP, negative at 15.5% CP. Balance protein with your nutritionist before adding NovaGreens™.
- **Supplemental rates are lower.** Commercial NovaGreens™ feeding at 2–4 lb/cow/day is well below the 10% DM studied. The on-farm trial exists to measure the response at commercial rates in your herd.

Next step

Run the same measurement in your own herd: 50 treatment and 50 paired-control cows, weekly DHIA milk and components, feed weigh-backs, and an independent statistician's report. See the *NovaGreens™ On-Farm Trial Protocol*.

Peer-reviewed trials cited are category evidence for sprouted barley, not validation of any specific NovaGreens™ lot. Results on any operation depend on herd, ration and management.