



TECHNICAL BRIEF

Sprouted-grain feeds in ruminant rations: the evidence register

Written for nutritionists and veterinarians. One register, three categories: what is published in peer-reviewed controlled trials, what is contradicted, and what Indoor Farms is testing in on-farm trials. We show this register to customers.

Published — supported by controlled trials

Outcome	Finding	Source
Feed efficiency	Milk/DMI 1.49 vs 1.43; ECM/DMI 1.85 vs 1.73 ($P<0.01$) at 10% ration DM. Gain from lower intake at unchanged yield.	Zang et al. 2024, J. Dairy Sci. 107(8)
Nitrogen efficiency	Milk N efficiency 30.5% vs 28.8% ($P<0.01$); corroborated independently.	Zang et al. 2024; Wu et al. 2024
Safety at 10–30% DM	No adverse health, metabolic or rumen effects; authors describe a "safe partial substitute".	Kim et al. 2020; Crump et al. 2024; Mohtashami et al. 2026
Phytate reduction	92–97% reduction; survives drying (permanent chemical change). Primary relevance to monogastrics.	Bouajila et al. 2020
Rumen development (lambs)	Increased papillae height, width and surface area; more amylolytic and cellulolytic bacteria at 50–75% inclusion.	Alharthi et al. 2023
Water efficiency / supply security	Year-round indoor production; ~95% less water than irrigated forage. A supply-chain fact, not an animal claim.	Extension analyses

Trial endpoints — measured in every NovaGreens™ on-farm trial

Outcome	State of the literature	How we measure it
Milk yield	Mixed: one positive (high-protein ration), others null. Depends on ration CP.	Parlor meters / weekly DHIA, paired controls
Butterfat & protein %	Not consistently changed in published trials.	Weekly DHIA component testing
Herd health, SCC	One non-significant SCC tendency ($P=0.08$).	DHIA SCC, treatment logs, BCS
Longevity, fertility, hoof health	No cattle study exists.	Reference herds tracked across lactations
Beef gain, conversion, days on feed	Historical beef trials on wet fodder are neutral; no dried-product data.	Matched pens, individual weights, weigh-backs



What we do not claim, and why

Claim	Status	Reason
"6–10× more feed from your grain"	NOT CLAIMED	Sprouting loses 7–47% of dry matter (typically 15–25%) to respiration. The product is sold for what it does in the rumen, not for its weight.
Protein savings	NOT CLAIMED	Sprouted barley is an energy feed with moderate, largely rumen-degradable protein. It displaces grain energy, not soybean meal.
Additive savings	NOT CLAIMED	No trial evidence that sprouted grain substitutes for yeast, DFM, ionophores or chelated minerals.
Acidosis mitigation	NOT CLAIMED	Rumen pH fell with sprouted barley in two independent studies (Crump 2024; Mohtashami 2026).
"Living enzymes"	NOT CLAIMED	No evidence plant enzymes survive the rumen; drying denatures them in any case.

Evidence discipline. A claim that collapses in front of a dairy nutritionist costs more than the sale it was meant to win. Indoor Farms puts independent laboratory testing before tonnage, and on-farm data before performance claims. Where the literature is silent, we say so and measure it.

References

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- Vastolo A. & Cutrignelli M. (2025). Animals 15(24):3544.
- Pech-Cervantes A. et al. (2022). J. Anim. Sci. 100(8):skac189 (exogenous amylase meta-analysis).
- 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.