



CASE STUDY · YOUNG STOCK

Rumen development with sprouted barley in young ruminants

Rumen development is the whole value proposition of a calf starter. A controlled study in lambs (Alharthi et al., 2023, *Veterinary Sciences* 10(1):15) found that sprouted barley changed the rumen wall and its microbiome. This is the lead behind the NovaGreens™ calf-starter program — and the calf trial designed to confirm it.

What the study found



Papillae height & width

Significantly increased



Papillae surface area

Greater absorptive area



Amylolytic & cellulolytic bacteria

Shift in rumen microbiome

Lambs fed sprouted barley at 50–75% inclusion showed significantly increased rumen papillae height, width and surface area, alongside increased populations of starch- and fibre-digesting bacteria. Papillae are where volatile fatty acids are absorbed; more surface area is the physiological basis of a better-developed rumen.

This is lamb data, not calf data. Species, inclusion rate and age differ from a commercial calf-starter program. We present it as the most promising lead in the sprouted-grain literature — and the reason we are running a calf trial — not as a claim for calves.

Why it matters for calf and heifer programs

- Bagged calf and transition feeds already carry a premium for immune, stress and rumen-development positioning. A documented rumen-development effect would be a differentiated, mechanistic claim.
- Sprouting's 92–97% phytate reduction and high soluble-carbohydrate fraction fit the starter-feed profile of highly fermentable, palatable energy.
- Calf trials are comparatively inexpensive, short and easy to control — the fastest route to a proprietary result.

The NovaGreens™ calf trial (in design)

Element	Plan
Animals	Paired pre-weaned and weaned calves, single farm, randomised by birth weight and age
Treatment	NovaGreens™ at 0.5–2 lb/hd/day in the starter / grower mix vs control starter
Endpoints	Starter intake, ADG, weaning weight, scours and treatment incidence, rumen VFA / pH (subset), papillae development where sampling is available
Duration	Birth to 90 days, with a 60-day post-weaning follow-up
Oversight	Independent nutritionist, veterinary sign-off, statistician's report

Dairies and calf ranches interested in hosting the calf trial can apply at indoorfarmscorp.com or by emailing info@indoorfarmscorp.com.

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.