



Animal Feed Ingredients

novapro

NovaPro is a high energy, hot pressed rumen protected rapeseed expeller supplying similar quantity of rumen bypass protein as hi-pro soya.

novapro

**Boost your milk
potential & watch
your profits rise**

NovaPro



NovaPro is a high energy, hot pressed **rumen** protected rapeseed expeller supplying similar quantity of rumen bypass protein as hi-pro soya with a significantly higher energy content (~10%) than rape seed meal due to higher retained rumen friendly oil.

The by-pass protein is of higher digestibility than that within other rumen protected rape seed meal based products as it is not subjected to hexane solvent extraction that reduces digestibility.

Typical Analysis (on a dry matter basis)

Dry matter (%)	Energy (MJ ME/kg DM)	Crude protein (%)	Oil (%)	NDF (%)	Starch (%)	Sugar (%)	DUP (%)
89.0	12.9	34.8	10.5	35.0 [#]	6.9	7.9	19.0

[#] The production process creates a false analytical value 26% should be used for rationing purposes

What are you trying to achieve?

Need	Feature	Benefit
Drive intakes	An excellent source of high quality rumen bypass protein, of superior and matched amino acid profile to milk protein, soya, in a palatable form	Ruminants will increase intake to provide energy to match the superior supply of amino acids in NovaPro (the building blocks of protein) compared to soya.
Reduce feed costs		Allows performance to be maintained while reducing the overall protein content saving feed costs
Increase milk yield		Allows the cow to maximise milk production by meeting its demand for DUP and improve protein efficiency
Reduce reliance on soy a bean meal	Very similar DUP content as hi-pro soya meal	Allows a dairy and growing rations to reduce or remove hi-pro soya saving feed costs
Flexibility in feeding	Dry and free-flowing meal	Simplifies feeding and storage

The predicted responses (benefits) assume that the specified nutrient, physical or structural dietary components are limiting livestock performance in the current ration.

Complementary Concentrate Feeds

- **High starch feeds** e.g. cereals, maize meals, confectionary and bakery products.
- **Low protein feeds** e.g. cereals, citrus pulp, soya hulls and sugar beet products.
- **Rumen degradable protein sources** e.g. Distillery syrups, high protein molasses products and DDGS
- **Rumen bypass protein boosters** e.g. SoyPass
- **Rumen bypass fats** e.g. Golden Flake, Butterfat Extra

Recommended daily feed rates (per head basis)

NovaPro can be fed, top dressed, used individually or as part of a blend or TMR.

Milking Cows	Up to 4 (typically 2)kg
Dry Cows	Up to 2.0 kg
Replacement Heifers	Up to 2 kg and up to 25% of the DMI
Calves (to 12 weeks)	Up to 0.75 kg and up to 20% of the DMI
Growing Cattle	Up to 2 kg and up to 25% of the DMI
Finishing Cattle	Up to 3 kg and up to 30% of the DMI
Suckler Cows	Up to 2 (typically 1)kg
Ewes and Rams	Up to 0.5 (typically 0.25)kg
Hogget's and Lambs	Up to 0.5kg and up to 25% of the DMI

Availability, handling and storage

NovaPro is available all year round, UK wide and is delivered direct to farm in bulk.

NovaPro should be stored out of direct sunlight, in a cool, dry and well-ventilated environment and should be used within three months of delivery.

Method of production

NovaPro is produced at a new state of the art rapeseed expelling facility, where whole rape seeds are heated and pressed to expel the oil, after which the residual cake is treated using a unique and safe patented process which increases the level of rumen bypass protein. The process takes advantage of naturally occurring wood sugars which, when mixed with the rapeseed cake under gentle steam treatment, binds to part of the protein, protecting it from degradation in the rumen.

During production of NovaPro, careful process control procedures ensure that the proteins become highly rumen undegradable but retain, post rumen, high intestinal digestibility, similar to untreated soya bean meal. Hexane solvent, which has been shown to reduce protein digestibility, is not used in the manufacturing of NovaPro. Unlike conventional rapeseed extract where hexane is applied during the recovery phase of the process.

Quality Assurance

NovaPro is a FEMAS assured (or a recognised equivalent) fully traceable, product, marketed by Trident Feeds – a UFAS accredited merchant. NovaPro is listed under Rapeseed expeller feed number 2.14.6 in the EU Catalogue of Feed Materials.

Suggested feeding rates are produced as a guide only and many other factors may have an overriding effect on animal response; no performance guarantee can be given. Rations should be carefully balanced for energy and protein, contain sufficient forage to maintain rumen function and be fortified with an appropriate vitamin and mineral supplement. Animals must have constant access to clean water.

NovaPro

Detailed Typical Analysis (fresh basis other than where stated)

Dry matter	%	89.0	Calcium	g/kg	7.2
Oil A	%	8.3	Magnesium	g/kg	4.8
Oil B	%	9.4	Phosphorus	g/kg	9.5
Crude protein	%	31.0	Potassium	g/kg	11.0
Crude protein: DM	%	34.8	Salt	g/kg	1.5
Fibre	%	12.0	Sodium	g/kg	0.2
Ash	%	6.5	Copper	mg/kg	5.0
ME* – <i>in vivo</i>	MJ/kg DM	12.9	Manganese	mg/kg	55.0
NDF	%	31.2 (23.0)	Selenium	mg/kg	0.08
Starch	%	5.0	Zinc	mg/kg	50.0
Sugar	%	7.0	Saturates	% of oil	6.0
ERDP-FiM*	% @ 6%	10.3	Monounsaturates	% of oil	68.0
DUP-FiM*	% @ 6%	17.0	PUFAs	% of oil	26.0
DUP digestibility	%	80.0	Long chain PUFAs	% of oil	0.0
sDM		0.201	Lysine	% of CP	5.40
aDM		0.444	Methionine	% of CP	2.00
bDM		0.454	Cysteine	% of CP	2.40
cDM		0.026	Histidine	% of CP	2.80
sN		0.116	Threonine	% of CP	4.50
aN		0.297			
bN		0.557			
cN		0.030			

All s, a, b and c fractions were assessed at the University of Nottingham 2016

NovaPro is a high energy rumen protected protein with proven performance benefits

Drives intakes and improves milk yields.

An excellent source of high quality rumen bypass protein, comparable to soya meal.

Produced in the UK from UK sourced rapeseed.

Why are rumen protected proteins important?

Ruminants require a combination of rumen degradable and bypass protein, by using rumen protected protein sources in rations the level of bypass protein can be boosted resulting in improved animal performance, even when rumen fermentation has reached its limits.

Why feed NovaPro?

Increase milk yield and performance



Maximises milk production by meeting the cow's demand for DUP and improves the efficiency of protein utilisation.

Drive intakes



The improved amino acid balance and digestibility of NovaPro drives milk production, which in turn drive s dry matter intakes.

Reduce feed costs



Drives performance whilst reducing the overall protein content of the diet, providing cost savings on feed and a cost effective alternative to soya.

Similar bypass protein to soya bean meal



NovaPro supplies a high quantity of quality rumen bypass protein, equal to soya. The bypass protein in NovaPro is highly digestible.

No hexane



NovaPro has not been subject to hexane solvent extraction, therefore it provides superior protein digestibility.

Flexibility in feeding



A dry and free flowing meal simplifying feeding and storage. This makes NovaPro easy to feed in a number of different ways.

UK sourced rapeseed



Made in the UK, supporting UK farmers and UK agriculture.

Higher energy content



NovaPro has the advantage of a significantly higher energy content (~10%) than rapemeal, due to the amount of retained rumen friendly oil.

In a recent University of Nottingham trial,
NovaPro was found to provide:



Additional litres of milk per cow per day produced compared to a soya and rape meal extract diet.



Better amino acid balance and protein utilisation, with no significant effect on milk constituents.

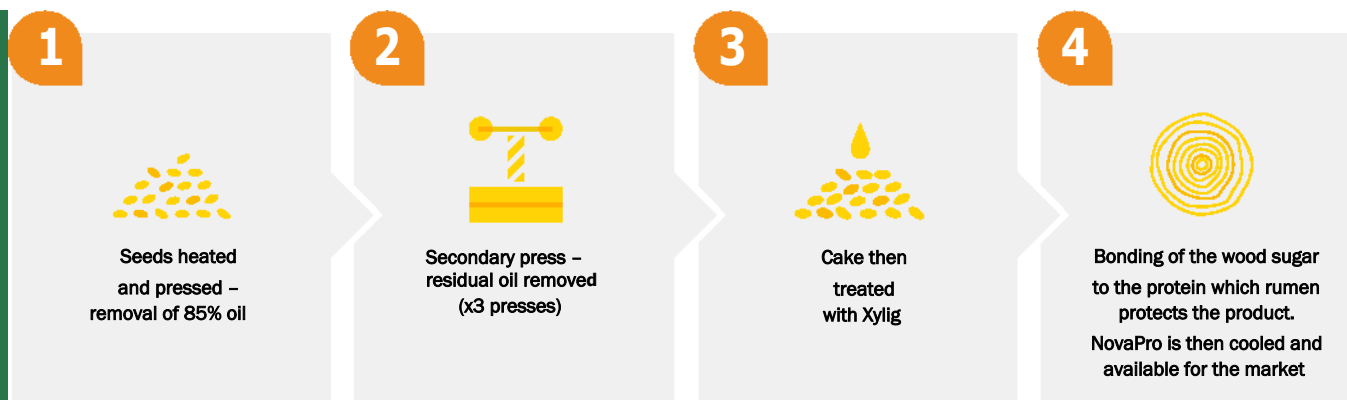


Significant reduction in milk urea level, indicates better protein utilisation leading to potentially better fertility.

Unique process

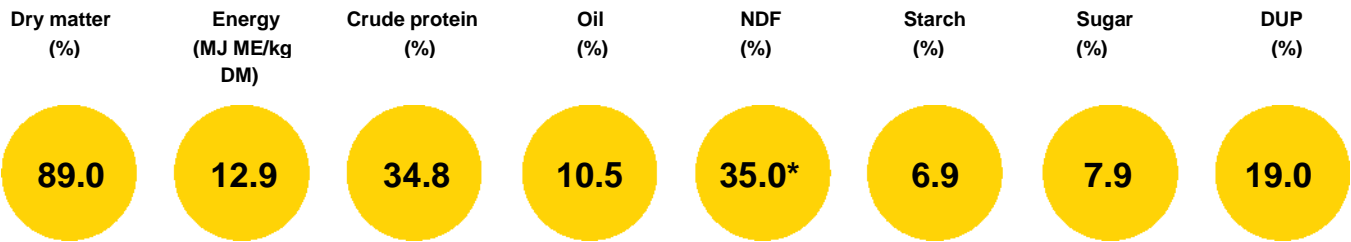
NovaPro is produced at Yelo's state-of-the-art rapeseed expelling facility in Warwickshire, where whole rapeseeds are steamed and pressed to expel the oil, after which the residual cake is treated using a unique and safe patented process which increases the level of rumen bypass protein. The process takes advantage of naturally occurring wood sugars (Xylig) which, when mixed with the rapeseed cake under gentle steam treatment, binds to part of the protein, protecting it from degradation in the rumen.

During production of NovaPro, careful process control procedures ensure that the proteins become highly rumen undegradable but retain, post rumen, high intestinal digestibility, similar to untreated soya bean meal. Hexane solvent, which has been shown to reduce protein digestibility, is not used in the manufacturing of NovaPro.



Sustainability

NovaPro is a brand new sustainable feed for the UK farmer, using UK sourced rapeseed, reducing its carbon footprint. NovaPro will offer dairy farmers an opportunity to displace imported protein sources, improving UK self-sufficiency whilst increasing milk yield. In addition, the manufacturing site is solely powered by energy generated in site, meaning the site is energy neutral.



*26% should be used for rationing purposes

Important information

1 Availability, handling & storage

NovaPro is available all year round, UK wide and is delivered direct to farm in bulk. NovaPro should be stored out of direct sunlight, in a cool, dry and well-ventilated environment and should be used within three months of delivery.

2 Ways it can be fed

NovaPro can easily be incorporated into a TMR, top dressed onto forage or included within a blend. It can also be incorporated into manufactured compounds.

3 Quality assurance

NovaPro is a FEMAS assured, fully traceable product, marketed by Trident Feeds – a UFAS accredited merchant. NovaPro is listed under Rapeseed expeller feed number 2.14.6 in the EU Catalogue of Feed Materials.

Daily feed rates (per head basis)



Milking cows Dry	Up to 4kg (typically 2kg)
cows Replacement	Up to 2.0kg
Heifers Calves (to 12 weeks)	Up to 2kg and up to 25% of the DMI
Growing cattle	Up to 0.75kg and up to 20% of the DMI
	Up to 2kg and up to 25% of the DM

DMI = dry matter intake

NovaPro can also be fed to beef cattle, youngstock, sheep and goats.

University of Nottingham Trial Summary

Feeding NovaPro produces more milk than hipro soymeal

With increasing concern over how food is produced, and a drive to reduce food miles, deforestation and improve the sustainability of our supply chains, an experiment was conducted to evaluate the use of protected rapeseed expeller (NovaPro), with and without SoyPass, as a replacements for hipro soyabean and rape seed meal in diets of high-yielding lactating dairy cows milked in robots.

Three diets were formulated to supply the same quantities of metabolisable energy and protein. A control using hipro soya and rapeseed ext., was compared with NovaPro and a NovaPro/SoyPass diet with no hipro soya or rapeseed ext. meal. Diets were fed to 33 cows split into balanced groups using a Latin square design with feeding periods of 28 days each. Cows were fed compound feed through the robot feeder to a target yield of 42 litres.

Table 1. Formulations of partial mixed rations (kg/t DM basis)¹

	Control	NovaPro	Nova/SoyP
Grass silage	256	256	256
Maize silage	232	232	232
Wholecrop silage	139	139	139
Straw	20	20	20
Wheat	143	88	135
Hipro-soya	96		
Rapeseed-extracted	48		29
NovaPro (rumen protected rape expeller)		117	87
SoyPass			19
DDGS wheat biofuel		78	
Sugar beet feed	38	39	50
Butterfat extra (C16 protected fat)	13	16	16
Minerals & vitamins	6	6	6
Limestone flour	5	5	5
Sodium bicarbonate	4	4	4
Urea		2	3
	1000	1000	1000

¹Formulations were calculated using lab-determined DM values (Table 2). A concentrate was fed in the milking robot according to milk yield (+0.45 kg/litre over 32 litres).

Milk yield was significantly higher when cows were fed on both treatment diets (mean 42.8 & 42.7kg/d) than when they were fed on the control diet (mean 41.1 l/d) with no significant differences in milk composition. Dry matter intake was higher when cows were fed on NovaPro and Nova/SoyP (mean 25.0 kg/d) than when they were fed on the control diet (mean 23.9 kg/d).

Table 2. Milk yield, milk composition, component yields and milking frequency

	Treatment			sed	P
	Control	NovaPro	Nova/SoyPass		
Milk yield (kg/d)	41.1 ^a	42.8 ^b	42.7 ^b	0.57	0.009
Butterfat (%)	3.51	3.45	3.45	0.06	0.448
Protein (%)	3.29 ^a	3.25 ^b	3.25 ^b	0.016	0.009
Lactose (%)	4.75 ^a	4.72 ^b	4.71 ^b	0.01	0.004
Urea (mg/dl)	33.62 ^a	29.71 ^b	31.82 ^a	1.339	0.040
Fat yield (kg/d)	1.43	1.46	1.45	0.026	0.327
Protein yield (kg/d)	1.35	1.39	1.38	0.020	0.141
Lactose yield (kg/d)	1.95 ^a	2.02 ^b	2.01 ^b	0.028	0.039
Milking's per day	3.21	3.22	3.21	0.080	0.191
AMS visits per day	3.22	3.22	3.21	0.080	0.317

Retrospective calculation of metabolisable energy and protein supplies showed that these were within 3% of requirements for observed responses. Calculation of amino acid profiles suggested, particularly methionine, they were superior for the treatment diets, as a consequence of a better match between milk protein and rape compared to soya protein. Conclusions of the study were:

- The study supports the hypothesis that cows fed rumen protected rapeseed expeller (NovaPro) with or without SoyPass have similar or improved milk production compared to a control (soya-based) diet.
- Improved milk production was accompanied by increased dry matter intake, but it is likely that intake was driven by milk yield rather than vice versa. There was no effect of treatment on feed efficiency.
- The most likely explanation for improved milk yield was an improved amino acid balance compared to control.
- This study is very consistent with a recently published meta-analysis comparing soya with rape protein that showed:

	Response vs. soya protein
Dry matter intake (kg/day)	+0.29
Milk Yield (kg/day)	+0.73
Protein %	+0.0016
Fat %	-0.048



Working with global leaders

Supplying innovative animal performance products and feed ingredients

For efficient animal production.

ProNutri is a Wholesale Feed and Animal Nutrition division of one of Ireland's leading agricultural groups, the Arvum Group.

ProNutri supplies feed manufacturers and the merchant trade with quality animal feed ingredients and nutritional solutions backed by technical support.

ProNutri's extensive expertise, knowledge, and global partnerships enable us to bring our customers the latest in nutritional advancements.

The Arvum Group is a group of Irish agribusinesses with interests in seed, animal nutrition and was founded in 1859.

See www.arvumgroup.ie for further details.

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SOLUTIONS BACKED BY SCIENCE

At a time when the role of sustainability sits at the core of Irish agriculture, combining our strategic partnerships with our technical expertise has never been so important.