

FACT SHEET - EXTRUDED RAPESEED MEAL



BACKGROUND

Pure Oil NZ sources GE Free oilseed rape from New Zealand arable farmers. Together with Ag Research we completed a research project determining how to increase the value of its canola meal for the New Zealand dairy industry. It was found that a high shear extruder followed by a resident cook period would increase the by-pass protein content within the canola meal and thereby drastically increase the feed's milk production capabilities.

The WHY

The dairy cow farmer values canola meal for its rumen degradable and undegradable protein. The undegraded (or "bypass") fraction is the most critical as it supplies essential amino acids for absorption in the small intestines which lifts milk production levels.

Canola meal also provides a significant energy advantage in the form of sugars and residual oil which are not fermented as quickly in the ruminant after heat treatment. The digestibility of fibre (ADF and NDF) is improved after extrusion process, encouraging microbial activity in the ruminant.



The HOW

Pure Oil NZ creates by-pass protein by adding controlled amounts of heat and cook time to the canola meal. This added heat denatures the amino acids and changes the digestibility of the overall protein.

Extrusion (high pressure + high shear) is an effective means to increase by-pass protein. During the extrusion process temperatures are elevated and the moisture within the meal encourages the chemical reaction of amino acids to take place (denaturisation). A conditioner holds the extruded meal for a control period, prolonging the denaturisation process and

thereby increasing by-pass protein levels.



CANOLA MEAL SPECIFICATION

NUTRIENT	UNIT	MEASURE
Moisture	%	6-7
Crude Protein	%	34-38
Oil	%	9-13
Crude Fibre	%	11
ADF	%	22
NDF	%	26
Ash	%	6

PROTEIN & ENERGY FOR DAIRY

NUTRIENT	UNIT	MEASURE
Crude Protein	%	34-38
Rumen Bypass (undegraded)	%	>32
ME	MJ/kg DM	13.5

MINERAL CONTENT

NUTRIENT	UNIT	MEASURE
Calcium	%	0.6
Phosphorus	%	1.0
Magnesium	%	0.5
Potassium	%	1.2

AMINO ACID CONTENT

NUTRIENT	UNIT	HT CANOLA
Glutamic	%	18
Cysteine	%	3.2
Methionine	%	2
Lysine	%	6
Threonine	%	4.4