



# COMMODITY NUTRIENT PROFILE

## CONDENSED WHEY PRODUCT

### DESCRIPTION:

In the manufacture of Cheese, casein protein and most of the butterfat are coagulated from the milk. The process byproduct, WHEY, contains most of the water-soluble components of milk such as: lactose, lactalbumin and lactoglobulin, minerals, water soluble vitamins as well as the water originally in milk. As an animal feed WHEY may be fed as produced (a dilute liquid), partially removing water (condensing), or heating to remove most of the moisture (drying). From the original dilute form, condensing WHEY concentrates nutrients, reduces volume and transportation costs while benefiting from not being charged with drying costs and possible influences.

Condensing whey may be accomplished by the use of heat (evaporation) or by more modern methods such as ultrafiltration (UF) and reverse osmosis (RO). In this "State of the art" process whey is put through extremely fine filters/membranes, yielding concentrated whey and pure water. UF/RO water is such purity that it could be used to meet plant or domestic needs for water or safely released and meets all existing environmental standards.

### TYPICAL ANALYSIS: \*

		<u>DMB</u>	<u>AS FED</u>			<u>DMB</u>	<u>AS FED</u>
Dry Matter	%	100.0	30.0				
Crude Protein	%	4.3	1.3	TDN (Rum)	%	81.00	24.30
Milk Fat	%	0.13	0.04	NE <sub>l</sub>	Mcal/lb.	0.85	0.25
Ash	%	13.4	4.0	NE <sub>m</sub>	Mcal/lb.	0.81	0.24
Lactose	%	75.0	22.5	NE <sub>g</sub>	Mcal/lb.	0.54	0.16
Calcium	%	1.8	0.54	Potassium	%	2.72	0.81
Phosphorus	%	1.09	0.33	Sodium	%	0.90	0.27

\* Listed data are average values only and not considered as guarantees, expressed, or implied, nor as a condition of sale. For guaranteed spec's refer to label.

### STORAGE AND HANDLING:

UF/RO Condensed Whey Product (CWP) is a 30% DM liquid, to be stored in a clean sanitary tank, protected as practical from temperature extremes. UF/RO CWP pH has been observed to range from 4.5 to 3.7. The liquid can be moved by pumping or gravity flow where conditions permit. Ideally CWP should be fed to animals in a complete liquid feed (swine) or a TMR (ruminants) to ensure proper and uniform intake.

### USE AND APPLICATION:

CWP provides a readily available source of energy from the milk sugar "lactose". It should be gradually introduced into livestock rations to allow animals and/or digestive tract microflora to adapt. Should product "run-out" or be "re-introduced", animals must be re-acclimatized to prevent digestive disorders such as scouring/bloat.

Like all feed ingredients, CWP should be properly formulated into rations and supplemented with necessary nutrients to ensure proper animal nutrition.

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### CONDENSED WHEY PRODUCT (continued)

The modern tank set up on farm can easily achieve the inclusion of condensed whey to the ration. The system includes adequate storage in a new poly vertical tank and an industrial pumping system professionally installed and insulated to protect from freezing in winter conditions. An overhead port is mounted at the required height and location to accommodate TMR mixing. (Note: electrical service as well as system maintenance will be the responsibility of the individual dairy).

Condensed whey product can be fed in a controlled environment to all classes of dairy cattle, and must be included in a TMR mix.

Producers on farm trials have noted the following observations:

- ◆ Palatability enhanced “cows like it”
- ◆ Improved dry matter intakes “cows seem to enjoy eating and spend more time at the bunk”
- ◆ No sorting of the ration due to its sticky nature it holds the small grains and minerals together
- ◆ Reduced incidence of Ketosis (it is believed that this is due to the high lactose content as well as the overall improved appetite of the prefresh and fresh cow groups)
- ◆ Stronger and earlier heats detected
- ◆ Cows just look healthier and milk better throughout their lactation
- ◆ Improved Milk Components

Comments from throughout the industry:

1. Rapid energy in rumen “kick starts” rumen microbes when feed present
2. “Just does good things in the rumen” \*
3. Minerals and Vitamins all available
4. Energy, quickly available \*\*

Milk sugar resembles cane sugar in that both contain “glucose” but differs in that it has “galactose” and not “fructose”. Indications are the “galactose” in whey may fit into a particular situation in the rumen fermentation and be partially responsible for the benefits of the CWP as discussed and as researchers are seeing.

Whey has been fed to livestock for years and in the “fifties” was considered as being one of the four unidentified growth factors (UGF) (Whey factor). Ingredients were added to feed to promote additional performance and effect was thought to be due to water-soluble vitamins or organic compounds or (unknown) minerals. Some Nutritionist still follows this procedure today, particularly with starters and high performance diets.

Like the Pacific-Northwest dairymen, Northern New York producers can participate in concepts favorable to stock nutrition, livestock health and participate in important environmental issues

\*Quote Calif. Nutrition Consultant L. Larson

\*\*Quote Bill Van Dam Idaho Whey Specialists

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