

BUILD A BETTER HEIFER



STRATEGIC LIQUID FEEDING

PASTEURIZED WASTE MILK (PWM)



Many believe whole milk is “nature’s perfect calf diet”; however, to achieve optimal pre-weaning performance whole/waste milk needs enhancement in three ways.

— BALANCE • EXTEND • FORTIFY —

BALANCE

The standard protein-to-fat ratio in PWM is approximately 25-28% protein (DM basis) and 28-30% fat. A high fat diet like this can result in short, fat heifers that do not meet target breeding performance. Also, a high-fat diet results in depressed starter-grain intake. A good guideline is to strive for a protein-to-fat ratio of greater than 1.0 (more protein than fat). An ideal target is generally around 1.4 (example: 24:18), which is especially important for intensive nutrition programs that feed pre-weaned calves on an elevated nutrition plane. It has been demonstrated that a higher protein percentage in the milk diet promotes lean tissue growth and greater stature in calves.

EXTEND

Dairies typically have only 30 to 60 percent of the waste milk supply they will need to feed all their heifer calves. Some remedy the situation using salable milk; however, this can be a costly option. Others feed milk replacer; however, switching calves between liquid diet sources creates an inconsistent diet and management challenges. Extending the supply with a balancer product is economical and offers calves the least variation in diet, therefore, the lowest risk of health challenges.

PIVOT PROTEIN LEVEL TO BALANCE P:F RATION | ACHIEVE TARGETED SOLIDS LEVEL | INCREASE VOLUME

* Add a higher level of protein * Minimal amount of fat



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Protein Pivot is a 28:8 PWC balancer. To fully gain the value of a balancer, it is important it be implemented into a PWM Calf Feeding Strategy. Select Sires has the expertise to apply the highest quality PWM enhancement products to an ideal calf feeding strategy using their calf feeding tool.

Combining the calf feeding tool and Protein Pivot allows you to optimize PWM by:

- increasing the solids % to achieve the operation's DMI target
- shifting the protein:fat ratio in favor of optimal performance to meet heifer development goals
- extending the supply to meet daily calf feeding needs

The example below illustrates the Select Sires PWM Calf Feeding Tool pivoting the protein:fat ratio and extending supply. In this example, the tool is used to pivot a 27:30 protein:fat ratio to 27:20 while extending 50 available gallons to 80 gallons.

Example:Dairy Feeding their own heifer calves PWM

Gallons PWM Available	Solids %	Protein Test / Dry Matter	Fat Test / Dry Matter	Protein:Fat	Desired Solids	Gallons PWM Necessary to Meet Heifer Feeding Needs
50	12%	3.25% / 27%	3.57% / 30%	0.90	13%	80

Using the Select Sires PWM Feeding Tool and Protein Pivot to achieve 80 gallons of 13% solids PWM for feeding, the feeder would add 30 pounds of Protein Pivot and 27 gallons of water to the available PWM.

As fed results:

Gallons PWM Available	Solids %	Protein Dry Matter	Fat Dry Matter	Desired Solids	Protein: Fat Ratio
80	13%	27%	20%	13%	1.35

The PWM Calf Feeding Strategy must include the optimal feeding rate to achieve your heifer performance goals. Select Sires utilizes a combination of the above tool, the NRC predicted gains program, and calf raising expertise to determine the optimal feeding rates for your calf feeding program.

Optimal liquid feeding strategies have demonstrated positive productivity outcomes such as:

- Increased available metabolizable energy (ME)¹
- Increased average daily gain (ADG) and skeletal size²
- Healthier calves³
- Increased mammary development^{4,5}
- Reduced age at first calving⁶; and
- Increased milk production⁷

FORTIFY

PWM is deficient in a number of vitamins and trace minerals when comparing standard values for whole milk to the National Research Council (NRC 2001) recommendations for dairy calf nutrition. Among the elements with deficiencies are iron, manganese, copper, iodine, cobalt, selenium, Vitamin D and Vitamin E. Starter-grain formulations often are fortified with these vitamins and minerals; however, starter-grain intake is minimal in the first few weeks of life. Adding **Accel Milk Fortifier** at a rate of 9 grams/head/day is ideal to bring calves to recommended NRC levels. Accel Milk Fortifier has all of the vitamins and minerals necessary to bring PWM up to NRC recommended levels in bio-available and stable formulations. Additionally, Accel Milk Fortifier contains Bovatec® to control Coccidiosis, Direct Fed Microbials for gut health and ClariFly® insect growth regulator for control of flies in calf housing.



1 -- Quigley et al. 2006. "Effects of additional milk replacer feeding on calf health, growth, and selected blood metabolites in calves." J. Dairy Sci. 89:207-216.
 2 -- Bartlett et al. 2006. "Growth and body composition of dairy calves fed milk replacer containing different amounts of protein at two feeding rates." J. Animal Sci. 81:1641-1655.
 3 -- Ballou et al. 2015. "Genetic, epigenetic and management factors contribute to the risk of morbidity and mortality of Holstein feeder calves, American Dairy Science Association Annual Meeting 2015, #518.
 4 -- Geiger et al. 2016. "Growth, intake, and health of Holstein heifer calves fed an enhanced preweaning diet with or without postweaning exogenous estrogen." J. Dairy Sci. 99(5):3995-4004.
 5 -- Geiger et al. 2016. "Feeding a higher plane of nutrition and providing exogenous estrogen increases mammary gland development in Holstein heifer calves." J. Dairy Sci. In Press.
 6 -- Soberon et al. 2009. "Early life management and long term productivity of dairy calves." J. Dairy Sci. 92(Suppl. 1):238. (Abstr.)
 7 -- Soberon et al. 2012. "Pre-weaning milk replacer intake and effects on long-term productivity of dairy calves." J. Dairy Sci. 95:783-793.
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