

DAIRY ISSUE SPECIAL REPORT

the product for young calves when lesser quality plant proteins are used in the formulation.

Fat levels in milk replacers typically range from 10 to 22 percent. Although the National Research Council lists a requirement for only 10 percent fat in milk replacers, research has repeatedly shown that higher levels of fat help reduce scours in young calves and can be beneficial in providing more calo-

ries to calves in cold environments. This is because fat has 2.5 times more energy than do carbohydrates.

Even with high levels of fat in the milk replacer, calves need grain to consume enough energy in the winter months. In fact, grain should account for nearly all of the calories used for growth, while the milk replacer maintains the calf.

There is a growing trend in some areas of the country to use non-

medicated milk replacers, but many research trials have shown that medication in milk replacers can improve calf health and increase performance. The use of medicated replacers may require a withdrawal period prior to slaughter. Four medications have been approved (see following figure) for use in milk replacers: three are antibacterial and a fourth aids in the prevention of coccidiosis.

RECENT ADVANCES IN MILK REPLACERS FOR DAIRY CALVES

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Both protein and energy levels are very important in choosing a milk replacer. Protein levels can range from 16 to 26 percent, with 22 percent recommended by the National Research Council.

Several research studies have shown that milk replacers with all high-quality milk proteins are very adequate with 20 percent protein. However, when increasing amounts of alternative protein sources are used in the formulation, a higher level of protein is needed to achieve the same growth response in calves.

Even with increased levels of total protein (up to 26 percent), milk replacers with high amounts of alternative plant proteins will not result in the same growth in young calves as will those with all milk proteins. Some replacers contain added methionine and lysine to improve the biological value of

Milk replacers sold and fed to dairy calves in the United States generally are high quality products that can be nutritious sources of feed for calves and economically used under many management situations.

Milk replacers can be classified by protein source and level, energy content, and presence of medication. Protein sources usually are classified as derived from milk or from alternative protein sources. The following figure lists many of the common protein sources used in feeds.

ALL MILK PROTEIN

- Dried Whey Protein Concentrate
- Dried Whey
- Dried Whey Product
- Skim Milk
- Casein
- Sodium or Calcium Caseinate

ALTERNATIVE PROTEIN

- Soy Protein Isolate
- Protein Modified Soy Flour
- Soy Protein Concentrate
- Soy Flour
- Plasma Protein
- Modified Wheat Protein

MEDICATION	FEED USE LEVEL	STATEMENT	WITHDRAWAL PERIOD
Chlortetracycline	Up to 100 g/ton	Growth promotion and feed efficiency	None required
	100g/ton to 250 g/ton	Aid in prevention of bacterial diarrhea	
Oxytetracycline	50 g/ton	As an aid in the prevention of bacterial diarrhea	5 days before slaughter
	51 g/ton to 100 g/ton	As an aid in the treatment of bacterial diarrhea	
Oxytetracycline/ Neomycin	100 g/ton	Aid in prevention of bacterial diarrhea (scours)	30 days before slaughter
	Oxy 200 g/ton Neo	Aid in treatment of bacterial diarrhea (scours)	
	200 g/ton Oxy and 400 g/ton Neo to 400 g/ton Oxy and 800 g/ton Neo		
	400 g/ton Oxy and 800 g/ton Neo		
Decoquinatate	45.4 g/ton (to decoquinatate per 100 lbs. body weight)	For prevention of coccidiosis in ruminating and non-ruminating calves and cattle caused by E. bovis and E. Zurniii	None required

To Represent Lancaster In State

NEW HOLLAND (Lancaster Co.) — On May 17, five young men from Garden Spot High School teamed together and defeated 30 other county teams to win the Lancaster County Envirothon Contest.

Their closest competition came from Pequea Valley and Conestoga Valley. In all, 155 students comprised the 31 different teams. The Garden Spot team was

coached by Bruce Stajnrach and included sophomore Dan Lauder-milch, Darrel Becker, and Brian Martin and freshmen Andy Weaver and Junior Zeiset. Garden Spot scored 399 points out of a possible 500. Pequea Valley's I FFA team placed second with 387 points and Conestoga Valley's Flaming Geckos were third with 373 points.

The Envirothon is an environmental contest that tests students on their knowledge of the outdoors and the natural things you would expect to encounter. Teams of three to five students compete against each other. The teams are tested in the following topic areas: wildlife, forestry, soils, aquatics, ecology, and this year's current topic, "groundwater." The tests are in written form, however the students are many times seeing, feeling, smelling, and hearing the actual questions. It might be a tree

or mammal they are asked to identify. It may be a bird call they are asked to know. Understanding the "water cycle" would definitely come in handy, as well as recognizing different soil characteristics.

The contest is sponsored by the Lancaster County Conservation District and receives donated time and funds from the Lancaster County Parks and Recreation Department, the Pennsylvania Fish and Boat Commission, the Pennsylvania Game Commission, the Natural Resources Conservation Service and Pennsylvania Power and Light (PP&L).

On Saturday, June 24, Garden Spot will be challenged once more as they will compete against other county winners at the state level contest. If Garden Spot manages to claim first place at Bald Eagle State Park, they will continue as Pennsylvania's representative at the national level contest.

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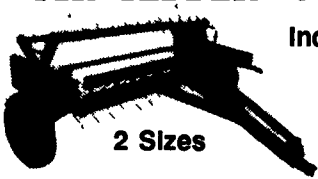
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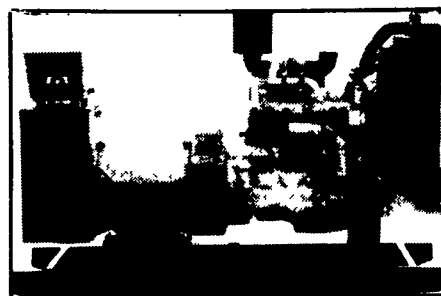
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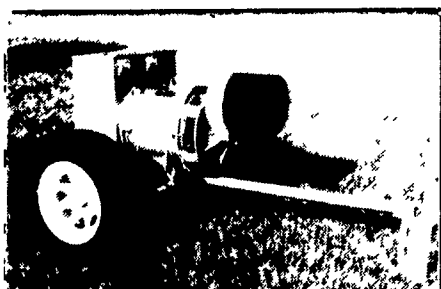
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