

Pollen Substitute Patties

Pre-Made Patties

Patties provide for ease of use and increased consumption during otherwise inclement weather. They allow for feeding to take place during cool, damp conditions and when open feeding isn't a viable option due to hive crowding or robbing concerns.

All our patties are ready to use with improved packaging that requires less work for the beekeeper and easier consumption by the bees at pricing competitive with mixing your own.

We provide patties in 4 different configurations, from the standard yeast patty to our Bee-Pro[®] patty with added natural pollen, providing the best protein inputs for your bees nutritive needs.

Improved Packaging

- ✓ Thinner paper, less waste
- ✓ Perforated paper, no more cutting
- ✓ Non-poly coated paper, easier access
- ✓ No excess paper at the edges



Bee-Pro [®] Patties			Pollen Sub Plus Patties		
	40 Pack	Price Per		40 Pack	Price Per
	Case	Pound		Case	Pound
1 - 20 cases	\$43.50	\$1.09	1 - 20 cases	\$39.50	\$0.99
21-39 cases	\$42.50	\$1.06	21-39 cases	\$38.50	\$0.96
1 Pallet 40 cases	\$41.00	\$1.03	1 Pallet 40 cases	\$35.00	\$0.88
4 Pallets 160 cases	\$39.85	\$1.00	4 Pallets 160 cases	\$33.00	\$0.83

Bee-Pro [®] Patties Plus (4% natural pollen)			Yeast Patties		
	40 Pack	Price Per		40 Pack	Price Per
	Case	Pound		Case	Pound
1 - 20 cases	\$48.00	\$1.20	1 - 20 cases	\$43.50	\$1.09
21-39 cases	\$46.00	\$1.15	21-39 cases	\$42.50	\$1.06
1 Pallet 40 cases	\$45.00	\$1.13	1 Pallet 40 cases	\$41.00	\$1.03
4 Pallets 160 cases	\$44.00	\$1.10	4 Pallets 160 cases	\$39.85	\$1.00

All of our patties come ready to use, available at 3 convenient locations, Hackensack, MN, Woodland, CA and Hughson, CA. We also do custom patty formulations, call for details.

For More detailed information regarding Pollen Substitutes please call 800-880-7694 and request the MLL-021 Feeding Bulletin.

Make Mann Lake Your #1 Choice For Feed

The Power of Pro-Sweet, Liquid Sugar Blend

Pro-Sweet Liquid Sugar Blend High Fructose Corn Syrup

Total Solids (%)	76.50 - 77.50
Moisture (%)	22.50 - 23.50
Ash	0.05
Sulfur Dioxide	10 ppm max
Typical Carbohydrate Components	
Fructose (DSB*)	21 %
Dextrose (DSB*)	26 %
Sucrose (DSB*)	50 %
Maltose(DSB*)	1.5%
Higher Saccharides (DSB*)	2.0%

- Builds bees faster.
- 77% solid content.
- Extremely stable - resists crystallization and fermentation
- Contains both monomial and binomial sugars.
- Delivery available 7 days a week.
- Pro-Sweet is affordable!

At this time, Pro-Sweet is only available on the west coast.



IsoClear[®] 55 High Fructose Corn Syrup

Total Solids (%)	77.00
Moisture (%)	23.00
pH (undiluted)	4.00
Pounds/Gallon (100°)	11.46
Pounds/Gallon (DSB*)	8.89
Fructose (DSB*)	55%
Dextrose (DSB*)	41%
Maltose(DSB*)	2%
Higher Saccharides (DSB*)	2%

IsoClear[®] 42 High Fructose Corn Syrup

Total Solids (%)	71.00
Moisture (%)	29.00
pH (undiluted)	4.00
Pounds/Gallon (100°)	11.24
Pounds/Gallon (DSB*)	7.98
Fructose (DSB*)	42%
Dextrose (DSB*)	52%
Maltose(DSB*)	3%
Higher Saccharides (DSB*)	3%

*Dry Solid Basis

Why Choose Mann Lake?

- Competitive pricing.
- Our friendly staff makes all the difference.
- Type 55 & 42 delivery available within 24-48 hours across the US and Canada.
- Syrup is delivered on time.
- Our phones are answered 24 hours a day by a real person.

Call to order
800-880-7694

Feeding & Nutrition Headquarters

Bee-Pro[®] Pro-Sweet
Amino acids
Protein
Brewers Yeast
Carbohydrates
SUGAR

Mann Lake Ltd.
800-880-7694

Bees require proper nutrition to produce new bees and to increase longevity. Here at Mann Lake we have been involved in bee nutrition for over 20 years - supplying the best feed products at the most economical pricing available!

Don't be taken in by hype and high prices.

Nutrition based on good science.

Bees require both Carbohydrates (sugar) and Protein to produce brood and have a healthy hive. That means having protein without proper amount of carbohydrates (sugar) isn't optimal and vice versa, having carbohydrates (sugar) without the proper amount of protein isn't optimal to brood production or hive health.

Amino acids are the building blocks of protein. Different protein sources contain different amino acid levels; and it's for this reason that a mixture of protein sources should be included in a pollen substitute. A correct amino acid balance is the key to efficient utilization of protein.

Protein quality is determined by its level of essential amino acids. A bee will only utilize its dietary protein up to the lowest level of the limiting amino acid. A shortage of any one essential amino acid makes overall protein utilization by the bee less efficient. (Example the bees require 4% Iso-leucine and if the current feed you are using only has 3% Iso-leucine that means the bees can only utilize 75% of the available protein.

Don't confuse protein feeds with energy feeds.

Pollen or Pollen substitute represent the protein portion of the bees diet. Bees store protein in their body, and use it to make wings, muscles, and other body organs. The higher the level of protein in their bodies, the stronger the bees are and the longer they will live. Protein is a vital building block and is required to build bees.

Sugar, Syrup and Honey represent the Carbohydrate portion of a bees diet. They provide the energy the bees need for all activities and is extremely important for growth, breeding, flying, temperature control of the hive and brood production.

Remember both Protein (pollen or pollen substitute) and Carbohydrates (sugar, syrup or honey) are required for a healthy hive.

Please see Table (A) recommended minimum amino acid profile for proper protein utilization.

Amino Acid	Minimum required % of amino acid in protein digested
Threonine	3.0
Valine	4.0
Methionine	1.5
Leucine	4.5
Iso-leucine	4.0
Phenylalanine	2.5
Lysine	3.0
Histidine	1.5
Arginine	3.0
Tryptophan	1.0

The following is a chart showing most popular pollen substitutes, and the associated analysis regarding crude protein content, carbohydrate (sugar) content and essential amino acid profile for each product. We tailor our dry pollen substitutes to provide the best possible protein and amino acid profiles with the knowledge that you will be either feeding syrup at the same time or using syrup to produce patties, both of which provide the carbohydrate portion of a bees diet at more economical levels than blending additional sugar in our dry mix.

	Bee-Pro®	Pollen Sub Plus	Brewers Yeast	Feed Bee®	Recommended Amino Acid Profile* DeGroot
Crude Protein	48.50%	40.80%	43.00%	36.4%	
Carbohydrate (sugar)	4.90%	10.00%	28.70%	51.8%	
Amino Acids					
Arginine	6.93%	5.54%	4.50%	1.97%	3.00%
Histidine	2.69%	2.15%	2.30%	0.86%	1.50%
Isoleucine	4.94%	3.95%	4.50%	2.10%	4.00%
Leucine	8.36%	6.69%	8.50%	4.62%	4.50%
Lysine	6.28%	5.02%	6.40%	1.87%	3.00%
Methionine	1.59%	1.27%	1.70%	0.91%	1.50%
Phenylalanine	5.26%	4.20%	4.40%	2.15%	2.50%
Threonine	4.24%	3.39%	4.40%	1.63%	3.00%
Tryptophan	1.25%	1.00%	1.20%	0.48%	1.00%
Valine	5.52%	4.42%	5.80%	2.01%	4.00%

Note: Bee-Pro® has the most complete overall protein and amino acid profile. *Feed Bees®' amino acid profile provides lower levels of key amino acids as a percentage, based on the inclusion of sugar in the formula.*



At Mann Lake, we want to be your feeding headquarters!



Prices are subject to change without notice and do not include shipping charges.

As with all feed inputs, performance and pricing are the key measurements to take into consideration

Price List for Dry Pollen Substitutes and other Inputs

Bee-Pro® 50# Bags

1-20 Bags \$44.95 per bag
 21-40 Bags \$40.95 per bag
 40 Bags (pallet) \$34.95 per bag
 4 + pallets \$29.85 per bag

Pollen Sub Plus 50# Bags

1-20 Bags \$40.95 per bag
 21-40 Bags \$36.95 per bag
 40 Bags (pallet) \$28.95 per bag
 4 + pallets \$25.95 per bag

Brewers Yeast 50# Bags

1-20 Bags \$44.95 per bag
 21-40 Bags \$40.95 per bag
 40 Bags (pallet) \$34.95 per bag
 4 + pallets \$29.85 per bag

Natural Irradiated Pollen 40 # Bags

1-20 Bags \$68.75 per bag
 21-40 Bags \$66.35 per bag
 40 Bags (pallet) \$63.15 per bag
 4 + pallets \$59.95 per bag

Dry Sugar 50# Bags

1-20 Bags \$28.50 per bag
 21-40 Bags \$26.50 per bag
 40 Bags (pallet) \$24.50 per bag
 4 + pallets \$23.00 per bag

Dry Pollen Substitute products are best used in secluded areas and during weather conditions conducive to bee flight. During high humidity or damp conditions, pollen patties are a better option than dry feed.

- All natural pollen is irradiated to protect against disease.
- New patty packaging makes it easier for the bees to consume the patty.
- Pre-made 1# patties in stock.
- Custom patty formulas & sizes available, call for details.
- Available for pickup in Hughson, CA, Woodland, CA and Hackensack, MN.



Visit our web site at www.mannlakeltd.com

800-880-7694