



NEEDS AND METHODS OF ARTIFICIAL FEEDING, PREPARATION OF POLLEN SUBSTITUTE AND SUPPLEMENTS

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Artificial Feeding



- It is an essential part of managing colonies of bees successfully on accounts of unreliable weather patterns & modern methods of agriculture.
- It keeps bees living in apiary at least during lean season



Needs For Feeding

- Continue colony development during shortage
- Optimum population – nectar flows ,pollination of crops
- Feedlot situation
- Drone population
- Over wintering colonies

Build up colonies for

- seasonal division
- Brood rearing & colony development
- Pesticide loses
- Queen & package bee production



Methods Of Feeding

- Stimulative feeding
- Starvation feeding
- Rapid feeding
- Slow feeding
- Emergency feeding
- Open feeding
- Communal feeding



Pollen Supplement

- Another food not naturally collected by the bees which is fortified with natural pollen.
- It also contains natural pollen
- Artificial high protein diets containing 5 to 25% pollen



Pollen Substitute

- Another food which replaces completely the natural pollen collected by the honey bees
- Artificial high protein diet containing no pollen
- Replacement of pollen
- It is called extenders in USA



Ingredients Of Pollen Supplement & Substitute

Brewer's Yeast

- Similar in protein content to the average pollen
- Superior in vitamins

Torula Dried Yeast Type S

- Long time use product
- Combination – soyaflour + brewer's yeast
- Only at high cost

Soybean Flour + Dried Brewer's Yeast

- Soyaflour – protein(50%) ,vitamin(5-7%)
- Manufactured – heat treated expeller process
- Dried pollen – attractive to bees
- Casein & egg yolk powder - beneficial



Preparation Of Patties



Mix dry ingredients



Mix heavy syrup – 3(sugar) : 1(water)



Slowly add 2 parts (syrup) to 4-5 parts of dry mix , while kneading.



Leave overnight & knead again before flattening into a 1.5 cm cake.



Cut into squares weighing about 0.5 kg (1 lb).



Place on wax paper & cover with another wax paper to prevent drying





Preparations Of Supplement

- #1 3 parts soybean flour
1 part pollen
- #2 4 parts Brewer's Yeast
2 parts dry sugar
1 part pollen
2 parts lighter sugar syrup (2 sugar : 1 water)
- #3 10 parts Torula Type S Yeast
10 parts Brewer's Yeast
1 part pollen
Note: use 2 parts dry mix to 3 parts syrup



Preparations Of Substitute

- #1 soybean flour only
- #2 4 parts soybean flour
1 part Brewer's Yeast
- #3 10 parts soybean flour
6 parts casein
3 parts Brewer's Yeast
1 part egg yolk powder
- In each case, add 4-5 parts of the dry mix to 2 parts heavy sugar syrup as indicated earlier in directions on preparation of patties.



Protein source	Dry mix	Moist patty
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Parts by weight

Pollen Supplement Formula 1

Soybean flour:pollen (3:1 w/w)(1)	1	
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Sucrose:water (2:1 w/w)	2	
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Pollen Supplement Formula 2

Wheast or brewer's yeast:pollen (3:1 w/w)	1	
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Sucrose:water (6:1 w/w)	2	
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Pollen Substitute Formula 1

Brewer's yeast	2	3
Sucrose	3	3
		2-1/2

Pollen Substitute Formula 2

Soybean flour	2	3
Sucrose	3	3
Water(2)		2-1/2

Pollen Substitute Formula 3

Wheast		3
Sucrose		3
Water(2)		4

(1) w/w = weight to weight.

(2) Add sufficient water to substitute diet mix to form a doughlike consistency.

Installation Of Patties



- Patties - flattened into a cake about 1.5 cm (1/2 inch) thick
- Placed on the top bars - center of the cluster.
- Top of cake – covered with waxpaper
- Inner cover - inverted with rim side down
- New cakes should be added
- Feeding patties - 7 to 10 day intervals
- Package colonies deficient in pollen



Reference

- Bee keeping in India – Ghosh G.K
- Supplement feeding of honeybee colonies – Moeller L.N
- www.beedata.com
- www.wikipedia.com





Thank you