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# Testing the Effects of some Pollen Substitute Diets-An Addendum to Sihag and Gupta (2013)

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## ABSTRACT

Four artificial pollen substitute diets were earlier tested for their relative efficacy. The composition of these diets was not available in the earlier publications. This research note provides detailed composition of these four artificial diets for honeybees.

**Key words:** Colony, honeybee, pollen substitute diet, reproduction

## INTRODUCTION

Honeybees need artificial pollen substitute diet to tide over the harse floral dearth (Sihag and Gupta, 2011). Four pollen substitute diets were earlier tested for their efficacy on the reproduction and build up of *Apis mellifera* colonies under the sub-tropical condition of Hisar (Haryana, India) (Sihag and Gupta, 2013). The composition of these diets was not available in the earlier publications. The composition of these four diets is presented in this study.

## MATERIALS AND METHODS

**Composition of pollen substitute diets:** Artificial pollen substitute diets were prepared from the simple ingredients like soyabean floor, honey, yeast extract, multivitamins, minerals and salt. For the preparation of these diets, these ingredients were taken in different proportions as presented in Table 1. The method of preparation and provisioning of artificial diets to the honeybee colonies has been described by Sihag and Gupta (2011). Supradyn was added @100 mg $kg^{-1}$ of dry diet (Sihag and Gupta, 2011). The composition of various vitamins and minerals present in Supradyn tablets has also been provided in our earlier study (Sihag and Gupta, 2011). These diets were tested

Table 1: Composition of four pollen substitute diets fed to the honeybee (*Apis mellifera*) colonies

| | Ingredients in the diets | | | | |
|---|---|---|---|---|---|
| Diet | Soybean flour (parts) | Honey (parts) | Yeast extract (parts) | Multivitamins +minerals[1] | Salt[2] |
| Diet-1 (Protein+carbohydrate) | 60 | 35 | 5 | - | - |
| Diet-2 (Protein+carbohydrate+salt) | 60 | 35 | 5 | - | 5 g $kg^{-1}$ dry weight of diet |
| Diet-3 (Protein+carbohydrate+salt+ vitamins and minerals) | 60 | 35 | 5 | 100 mg $kg^{-1}$ dry weight of diet | 5 g $kg^{-1}$ dry weight of diet |
| Diet-4 (Protein+carbohydrate+ vitamins and minerals) | 60 | 35 | 5 | 100 mg $kg^{-1}$ dry weight of diet | - |

[1]Supradyn was added @100 mg $kg^{-1}$ of dry diet (Sihag and Gupta, 2011), [2]Sodium chloride, -Ingredient not includded

for their efficacy on reproduction and colony build up of honeybee, *Apis mellifera* and economics of beekeeping with this honeybee (Sihag and Gupta, 2013).

## RESULTS AND DISCUSSION

Diet-4 was found to be the best for the reproduction and colony build up of honeybee, *Apis mellifera* and economics of beekeeping with this honeybee at sub-tropical Hisar (India). We have already recommended this diet for its use as a pollen substitute diet for honeybee colonies during dearth period (Sihag and Gupta, 2013).

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