

# Feeding bees – pollen and substitutes

## Background

Bees require pollen as part of their diet. Brood food is made up of nectar or honey, pollen and water. If any of these are not available or in short supply then brood production reduces or in extreme cases ceases. If you consider your apiary site does not have an adequate natural resource, or if you wish to induce brood production early in the season this sheet gives guidance on feeding pollen or substitutes.

## Pollen

- The best way to guarantee that honey bees have enough pollen is to ensure there are adequate and suitable pollen-bearing plants close to the bees. Assessing the plants around apiary sites is important to ensure plenty of pollens are available through the season.
- Don't forget that adequate pollen stores are very important. Pollen tends not to be stored in abundance but rather collected as required. Do not assume that there is enough pollen in the colonies as shortages are common especially in early spring.
- If you find it is insufficient then feed a pollen substitute, pollen patty or pollen collected during the previous season.
- Pollen can transmit bee disease so only collect it from a strong and healthy colony using a suitable pollen trap. There are many types of traps and they trap up to 20% of the pollen collected by the bees. They can be left on the hive for long periods but are best used when there is a plentiful and varied pollen supply. Collecting pollen during the swarming season has been shown to reduce the incidence of swarms. The pollen must be collected regularly to avoid it becoming damp. Entrance traps should be emptied at least every 24 hours but floor traps can be left up to 72 hours.
- Pollen collected from one hive will be adequate to feed at least 50 hives.
- Avoid using other beekeepers pollen.
- Pollen can be stored in a number of ways but the easiest is to put it into paper or plastic bags and store it in a deep freeze at  $-18^{\circ}\text{C}$ . When defrosted use immediately.
- Fresh or freshly thawed pollen can be fed to a colony by placing it in a shallow dish close to the feed hole.



## Pollen substitutes

- Pollen substitutes can be purchased from a suitable commercial source.
- When feeding substitutes follow the suppliers recommendations.
- If you cannot source a pollen substitute it can be made up by mixing 3 parts (by weight) soybean flour, 1 part dried brewer's yeast and 1 part dry skimmed milk. Prepare a solution of 2 parts by volume of sugar to 1 part hot water.



- Let the solution cool and mix one litre of this solution with 400 grams of the substitute. Form it into a cake and wrap in grease proof paper, if necessary they can be stored in a freezer. When using cut a small hole in the paper and place the package hole side down on the top bars over the cluster and preferably over open brood. The bees will tear the paper away and feed on the cake. It is important that the cake remains moist or bees will ignore it, so maintain the paper cover over the top.
- The amount fed is variable depending on the strength of the colony and external conditions. A small colony on three frames may only need 50 grams a week whilst a very strong colony may require 500.
- Maintain feeding substitutes until there is an adequate natural pollen crop as it may be detrimental to the colonies development to stop beforehand. This is because brood food production may be affected leading to the starvation of larvae.
- Homemade pollen substitutes can be very variable in nutritional value due to the different ingredient brands. Generally it is better to obtain a commercial honeybee pollen substitute as the quality is assured.
- Pollen substitutes must not be used if the colony is starving or has supers on it or honey for human consumption in or on it.
- If you find pollen is regularly insufficient in hives then a re-assessment of the apiary site should take place.

**Knowledge of feeding bees pollen substitutes is not as strong as with other feeds. You may wish to make comparisons between substitute fed and unfed colonies to find if it is beneficial and which substitutes are best.**

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If there is a disease outbreak in your area, the NBU team uses BeeBase to contact local beekeepers and arrange for precautionary inspections to check for any signs of infection, and to advise on what to do.

**Register today through one of these easy methods:**  
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This leaflet was produced as part of the Healthy Bees Plan. The Healthy Bees Plan aims to address the challenges facing beekeepers in sustaining the health of honey bees and beekeeping in England and Wales. It has been jointly developed by Governments, beekeepers, their associations and other stakeholders.

For more information on the Healthy Bees Plan visit:

<http://www.fera.defra.gov.uk/healthybeesplan>



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