

- When preserving pollen through drying, it is preferable to dry the pollen at a temperature of around 86°F (30°C) and under limited lighting (dark)
- Preserve pollen once after harvest by refrigeration (freezing).
- Cleaning the pollen to remove any debris or unwanted particles could be necessary. This can be done using screens or sieves with appropriately sized mesh.
- Store the dried and cleaned bee pollen in airtight containers to maintain its freshness.

Packaging of bee pollen:

- Provide clean and sterile conditions to prevent contamination.
- Use jars, bottles and bags as package materials depending on the producer's preference and the intended market.
- Labels on the package should include important information such as the date of harvest, processing methods used, nutritional information, and any allergen warnings.

NOTE: Proper labeling and packaging are crucial for compliance with food safety regulations and for informing consumers about the product.

Storage and Distribution:

- Store packed bee pollen in a cool, dry place away from direct sunlight to maintain its quality.
- Proper storage conditions help prevent the pollen from becoming rancid or losing its nutritional value.
- During distribution, care should be taken to handle the packages carefully to avoid damage or contamination.

Regulatory Compliance:

- Beekeepers in Kenya should comply with local regulations and standards set by the Kenya Bureau of Standards (KEBS) regarding food safety, labeling, and packaging.
- This may include obtaining necessary permits or certifications, conducting regular inspections, and following good manufacturing practices (GMP).

- Additionally, international standards such as Codex Alimentarius may apply to exported bee products.

Market Considerations:

- Understanding consumer preferences and market trends can help producers determine packaging sizes, labeling information and marketing strategies
- Offering high-quality bee pollen with clearly labelled information on its source and production methods can help attract and retain customers.



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POLLEN HARVESTING, PROCESSING AND PACKAGING





Pollen grains collected from forager bees in Machakos county. Photo: Marystella N Wekhanya

Introduction

Pollen are the tiny, male reproductive units that form in the anthers of flowering plants. The majority of flowering plants on the planet today require that their pollen be transferred onto the receptive stigma of flowers (pollination) by wind, water, birds, bats, butterflies, beetles and bees, the most important species. Bees collect pollen using specialized body parts for their use to feed brood. The pollen available for pollination is freely attached to bee body hairs. The characteristics of bee pollen will depend upon the plants from which it is gathered.

Some bee species visit only a single species of flower in one trip meaning the pollen pellets (one on each leg) will tend to be all from the same type of plant and uniform in color and can range from white to black. While pollen provides almost all the bees proteins and nutrients, there is no single type of plant that produces bee pollen that will have all the vitamins, minerals, fats and proteins in exactly the right ratios for optimum honey bee health. As a result, a bee colony will tend to forage on a variety of pollen sources and bee pollen will tend to be a mixture of pollen from all the different species of plants that the colony's foragers are able to visit

Pollen Harvesting

- Bee pollen is collected by beekeepers with the use of pollen traps, devices that fit over the entrance to a hive and contain openings just big enough for a returning forager to squeeze through.
- In the process of squeezing through the opening in the trap, the pollen carried on the hind legs of the bee are knocked off and falls through a screen into a drawer where it is collected by the beekeeper.



Setting up of pollen trap. Photo: ABIRI Team

- There are many pollen-trap designs available and in use. No matter what type of trap is used, it is important that all other entrances to the hive be closed off or returning foragers will quickly learn to enter from them in order to retain their pollen loads.
- Trapping pollen has the potential to inflict significant nutritional stress on the colony.
- Traps may be applied for a few days and then removed for a period of time, before being reapplied so that the colony is able to obtain a reasonable inventory of pollen for its dietary needs.
- The efficiency of a trap depends on trap style and manufacturer, bee size, pollen load size, and hive equipment. Small pollen loads may not be scraped off the forager's legs, and any holes in the equipment may allow the bees another (non-trapped) entry to the hive.



Collected pollen. Photo: ABIRI Team

Pollen Processing:

Fresh pollen typically contains 10% to 12% water, while the moisture content of dried pollen is around four percent.

- Once harvested, bee pollen needs to be processed promptly to maintain its freshness and quality.
- It is estimated that drying in the sun may decrease the potency of pollen by as much as 50% due to oxidation of antioxidants.
- The pollen can be gently dried using a dehydrator or in a well-ventilated area with low humidity.