

**Indian Farmer**Volume 10, Issue 08, 2023, Pp. 389-391
Available online at: www.indianfarmer.net
ISSN: 2394-1227 (Online)**Popular Article****Ant: An insect of Ecological Importance****Phurba Dolma Sherpa and Yendrembam K Devi****School of Agriculture, Lovely Professional University, Phagwara, India***Corresponding author: kismon1987@gmail.com**Received: 12/08/2023**Published: 22/08/2023***Introduction**

Ants are considered as an important member in the terrestrial ecosystem as they are good predators, social insects and have foraging habits. They have more than 12000 species which are described, making them the top ranking ecologically dominant animals. They have high rate in turning the top soil more than earthworms. Ants, belong to the family Formicidae and are categorized within the aculeate suborder of the insect order Hymenoptera. This suborder comprises of the species that possess a stinging mechanism, although certain evolved ants have lost this ability. There are fossils that provide evidence indicating that the oldest known ant fossils date back around 100 million years, suggesting that early ancestors of ants likely emerged during the early Cretaceous Period, which occurred from 144 to 65 million years ago. They are considered as the ecosystem engineers considering the role they play in turning the soil ground dwelling processes making the soil porous and creating aeration in the soil.

**Fig1. Ant colonies****Fig 2: Black ant (Photograph by: P.D. Sherpa, LPU, Phagwara)**

Caste System in Ant

In the colony of an ant, it has a worker, a queen, and a male. The worker is the dominant. Ant castes are divided into three categories which include reproductive females, reproductive males, and non-reproductive females. Ants have a highly effective way of organizing their colony, where each individual ant is born with a specific job or role, which is called their caste.

The Queen: According to the different species there is the presence of single and several Queens which are termed monogyne and polygyne. She is the most important ant in the colony as every work in the colony is carried out for her to continue to lay eggs. From an evolutionary perspective, the queens are protected to the teeth by the children and this could be a way to increase the spreading of the genes. They have big large wings and thorax including the wing muscles.

The Workers: As the name of their caste their main duty includes caring for the queen, attending to the eggs, larvae and pupae, as well as excavating tunnels and chambers to enlarge and fortify the nest. They gather nourishment, moisture, and resources to safeguard the colony against predators and parasites. They are wingless, smaller than the queen and male. They are considered as the hero of the colony as throughout the process of evolution the workers have relinquished the capacity to reproduce and consequently having smaller ovaries. Most of the workers have the capacity to lay eggs however, due to their lack of mating, they can only generate male offspring. To generate a female ant, the presence of genetic material from a male is required.

The Male: The role of the male is to mate with many females and they hardly have any task in the colony. Instead, they patiently wait for the nuptial flight without taking any immediate action. They mostly die after mating and are difficult to identify the species as they look alike. Their body structure has large wings and body with thin abdomen.

Importance of Ants as

- **Scavenger:** As mentioned by Eubanks et al. ants from different subfamilies and species have been scavenging the dead materials and has been spread to all over locations being the dominant among the species. Ants have been scavenging a variety of dead and organic matter and, they are continuous foragers. Ants play a vital role in the recycling of the nutrients. The ants have the potential to continuously eat away large prey making them an important predator.
- **Biological Agent:** Ants serve efficiently than the pesticides by helping the growers in the food production. They are efficient in the pest control by killing the prey, making the damage of the crop much lesser and thereby increasing the yield. The ants serve as a very good predator and they focus on one species damaging the particular fruit or the plant. More the number of ants, more the protection against the species.
- **Pest control:** As the presence of ants in every ecosystem, makes them capable to control every pest insect, they react quickly against the pests. Even when the ratio of the ants is low in number they are active and thorough in locating the pest. Most ants regulate the population of the pest by disrupting their feeding and egg-laying activities.
- **Pollinator:** Ants are good sources of pollinators and some crops pollinated by ants are cashew nut, coconut, lychee and cocoa. The plants which are pollinated by the ants give in a greater number of seeds and flowers. They are small-sized insects which makes them capable to easily steal nectar which further helps in the pollination.



Some disadvantages of ants as pest:

When the ants feed on honeydew, secreted by the aphids, mealy bugs and whiteflies. These pests are more in number creating a disturbance as they harm the crops. This could be solved by some natural methods such as providing of sugar syrup which disrupts the process.

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