Aphids are not just aphids

By Janine Snyman, Aphid Solutions

From resemblances to Russian dolls and fascinating facts relating to their surroundings to enemy mummification, aphids have a tale to tell.

Why Russian dolls? These wooden figurines are unique as they are a set of decreasing size dolls, one inside another, and all identical to the primary doll. The reason aphids multiply quickly and efficiently on crops is based on the same principle as the Russian doll. Each aphid is exclusively female and gives birth to live clones of herself. The clone in turn has within it the next generation, and so on.

The newborn nymph can develop into a reproducing adult within seven days and an adult aphid can produce up to 80 offspring that already have copies of themselves within them.

Suction trap research

Studying aphids that were caught in suction traps in various areas revealed what effect they can have on potato crops as well as other narratives that aphids demonstrate through their biology.

The aphids caught in suction traps indicate what threats they hold for potato growers. By and large most aphids caught have absolutely no effect on the welfare of potatoes. Deductions were made while studying this year's potato season (July 2022 to June 2023). Adding together all five suction trap figures for this season, 6 627 individual aphids were found to be potential vectors of both the Potato virus Y (PVY) and the Potato leafroll virus (PLRV).

Similar to Russian dolls, aphids have within them other aphids.

Newborn nymphs can develop into reproducing adults within seven days.

Compare this to 25 176 individual aphids that are not harmful to potato production in any way. Bear in mind that the figures cover three provinces where the suction traps are situated: KwaZulu-Natal, Free State and Northern Cape.

Plant proclivity

Aphids can indicate what plants are growing and flourishing in the vicinity of the suction traps. For example, it is a possibility that in KwaZulu-Natal there are many pine tree plantations as this is the prevalent type of aphid that was caught in this province.

It is also extremely interesting that an unusually high number of rice root aphids were caught in two of the KwaZulu-Natal suction traps. This is quite perplexing as rice is not cultivated in this region. Further investigation revealed, not surprisingly, that this particular aphid has a proclivity for cannabis. Research confirmed that there are indeed areas in the surroundings of these suction traps where cannabis is grown.

The Free State would seem to have a fair number of poplar trees growing in proximity to the suction trap and the Northern Cape suction trap reveals that, particularly in previous years, lucerne was grown on a large scale. This is all information gleaned from the aphids that are trapped in these areas.

Some aphids have a proclivity for cannabis plants.

Parasitoid wasps are natural enemies of aphids. They lay their eggs inside the aphids and the hatched larvae internally mummify the insect.

Predator mummification

Aphids have natural predator enemies. The most commonly known one is the ladybird. However, there is another little treasure known as the parasitoid wasp. This delightful little creature lays an egg inside an aphid and consequently, the ill-fated aphid is unable to feed. It becomes an incubator and larder for the growing larvae within.

This continues until the hapless aphid's insides have been consumed and then the larvae, now a full-grown wasp, breaks out of its mummy case to inflict the same death sentence on another aphid.

Apart from being destructive insects, aphids can be quite fascinating considering their biology, the stories they reveal relating to their environments, and the fateful demise they undergo when encountering a parasitoid wasp.

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