PLANT - MITE MUTUALISM IN *COFFEA ARABICA*: A COMPARISON OF MITE DIVERSITY BETWEEN COFFEE PLANTATION AND NATURAL FOREST

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Plants species with structures known as leaf domatia are usually associated with mites. This association is important particularly in species such as *Coffea arabica* (Coffee) which have high economic value. This is because leaf domatia affect the distribution, diversity and abundance of mites found on the leaf surface. Overwhelming evidence has shown that these structures promote high abundance of predatory and fungivorous mites which act as plants bodyguards and reduce fungal loads on plant leaves.

Coffea arabica possess leaf domatia (Figure 1), and previous studies have shown that this plant is involved a beneficial mutualism with predatory mites. Accordingly, our research aimed at assessing this mutualism by determining mite host specificity and diversity in coffee plantations, especially when compared to mites that are found within indigenous forests. For this we sampled coffee leaves at the Beaver Creek Coffee Plantation in Port Edward.

Beaver Creek plantation was ideal for this study because it is close to the Umtamvuna Forest. We sampled both at the edge of the plantation closest to the forest as well as in the middle. This was done to test whether there would be more and different mites at the edge of the plantation compared to the middle.

Figure 1: Photograph of coffee leaves. Domatia are visible on the upper surface of the leaves

Our preliminary results indicated that the coffee plants possess similar mites to those found in the nearby forest. Interestingly, the coffee plants were only associated with predatory mites. There were no spider mites inside domatia of coffee plants even though these mites were present in some forest species. Mite diversity was, however, lower in coffee plants when compared to diversity found in natural forest species. Furthermore, plants in the middle of the plantation had slightly higher diversity than plants at the edge.