THE INFLUENCE OF METABOLIC INHIBITORS ON THE DEVELOPMENT OF THE TEA TORTRIX, *HOMONA COFFEARIA* (LEPIDOPTERA: TORTRICIDAE), IN VITRO

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Having developed an artificial diet to rear the tea tortrix, *Homona coffearia*, in the laboratory (Sivapalan & Gnanapragasam, 1979), experiments were designed to test the effect of certain chemical compounds that are likely to block the availability of critical dietary factors.

Extracts rich in saponins from the seeds and roots of tea, seeds of *Acacia concinna*, *Cyclamen europaeum* and *Sapindus emarginatus*, were found to have no inhibitory effects on development. The azasterol, 25-azacoprastane and the nonsteroidal amine N, N-dimethyltetradecanamine, very significantly suppressed development, both at 50 and 100 ppm. This suppression appears to be due to the possible blockage in the availability of an adequate amount of dietary sterol and/or, an interference in the synthesis of ecdysteroids.

Copper, in the form of cuprous oxide (50% metallic copper), at concentrations ranging between 12.5 and 150 ppm of metallic copper, significantly suppressed development. The larval period was prolonged, pupal weight reduced and adult emergence was poor, resulting mostly in deformed moths with naked wings. This characteristic latter symptom of scaleless naked wings was earlier shown to be due to a deficiency of linoleic acid (Sivapalan & Gnanapragasam, 1979) and copper seems to affect the availability of the latter. At 250 ppm, the larvae grew only up to the 3rd instar, whilst at 500 ppm and above they died the day following inoculation.

References :

1. Sivapalan, P. & Gnanapragasam N. C. (1979). Effects of varying proportions of dietary ingredients in meridic diets on the development of the tea tortrix, *Homona coffearia*, in the laboratory. *Ent. exp. & appl.* **26:** 41-46.

2. Sivapalan, P. & Gnanapragasam, N. C. (1979). The influence of linoleic acid and linolenic acid on adult moth emergence of *Homona coffearia* from meridic diets in vitro. *J. Insect Physiol.* **25**: *In Press.*