

Acarine Pests of Tea in India and its Management—A Review

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Abstract—Tea (*Camellia sinensis* L.) the queen of all beverages is grown as a major cash crop in India. It is grown within the tropics and in diverse agro ecological conditions. The tea industry is one of the oldest organized industries in India and cultivated in 42.2 million ha area. Globally, 1031 species of arthropods are associated with tea mono-culture and is attacked by nearly 250 insect species causing percent loss in yield worth U.S. \$500 million to \$1 billion, though in Asia only 230 species of insects and mites have been reported (Muraleedharan, 1992). The yield loss due to these pests may vary from 5-55% (Sivapalan, 1999) and in some cases 100 % crop loss has been reported (Muraleedharan and Chen, 1997).

Mites (Acari) are the most diverse and abundant of all arachnids, usually present in groups, are persistent and the most serious pests of tea in almost all tea-producing countries. Because of their small size they are rarely noticed with naked eye. Mites are truly ubiquitous and have successfully colonized nearly every known habitat with their domicile ranging from earth to water to air and from sea to mountain peak. The Acarine pests of tea include 4 groups namely: 1. Tetranychidae Group: Red spider mite (*Oligonychus coffeae*), Kanzawa spider mite, 2. Tenuipalpidae Group: (*Brevipalpus phoenicis* Geijskes), *Brevipalpus californicus* (Banks), Scarlet mite: (*B. australis* Tucker), 3. Eriophyidae Group: Pink mite (*Acaphylla theae* Watt), Pale mite (*Acaphyllisa parindiae* Keifer), *Acaphylla indiae* (Keifer), Purple mite (*Calacarus carinatus* Green) and 4. Tarsonemidae Group: Yellow mite (*Polyphagotarsonemus latus* Banks).

Of the various Acarine pests attacking tea crop, *Oligonychus coffeae*, Red spider mite causes the highest loss but recently the Eriophid group i.e. pink, purple and pale mite has also acquired the status of one of the major hindrance for tea cultivation causing considerable loss. Pest management tactics are plentiful. These include combined use of semiochemicals, HPR, trap crops, and deterrents for manipulating pest behaviour to develop IPM or stimulo-deterrent diversionary strategy. Tea is a global beverage and the demand for contaminant-free made tea is increasing, resulting in stringent rules on the use of pesticides and maintaining their maximum residue limit standards. Extensive use of these chemicals leads to pesticide residue problems in the made tea (Muraleedharan 1995) thus this strategy, application of selective pesticides of biological and mineral origin may be the last option and a systematic approach may give better results in production of contaminant-free tea.