

## Climate Impact on Spider Mite (*Tetranychus Sp. Koch*) Infesting Som Plant Leaves (*Machilus Bombycina King*) and Their Sustainable Management

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**Abstract :** Som plant (*Machilus bombycina King*) is an important plant in agroforestry system. It is cultivated in north-east part of India. It is cultivated in agricultural land by the marginal farmers for multi-storeyed cultivation with intercropping. Localized cottage industries are involved with this plant like sericulture industry (muga silk worm cultivation). Clothes are produced from this sericulture industry. Leaves of som plants are major food of muga silk worm (*Antherea assama*). Nutritional value of leaves plays an important role in the larval growth and silk productivity. The plant also has timber value. The plant is susceptible to mite pest (*Tetranychus sp.*) causes heavy damage to tender leaves. Lower population was recorded during 7th to 38th standard week, during 3rd week of February to 4th week of September and higher population was during 46th to 51st standard week, during 3rd week of November to 3rd week of December and peak population (6.06/3 leaves) was recorded on 46th standard week that is on 3rd week of November. Correlation studies revealed that mite population had a significant negative correlation with temperature and non-significant positive correlation with relative humidity. This indicates that activity of mites population increase with the rise of relative humidity and decrease with the rise of temperature. Tobacco leaf extracts was found most effective against mite providing 40.51% suppression, closely followed by extracts of *Spilanthes* (39.06% suppression). Extracts of Garlic and extracts of *Polygonum* plant gave moderate results, recording about 38.10% and 37.78% mite suppression respectively. The *Polygonum* (*Polygonum hydropiper*) plant (floral parts), *Pongamia* (*Pongamia pinnata*) leaves, garlic (*Allium sativum*), *Spilanthes* (*Spilanthes paniculata*) (floral parts) were extracted in methanol. Synthetic insecticides contaminate plant leaves with the toxic chemicals. Plant extracts are of biological origin having low or no hazardous effect on health and environment and so can be incorporated in organic cultivation.

**Keywords :** Abiotic factors, incidence, botanical extracts, organic cultivation, silk industry

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