

Seasonal Incidence of Broad Mite, *Polyphagotarsonemus latus* (Banks) (Acari: Tarsonemidae) on *Jatropha* and its Host Range under Gangetic Plains of West Bengal

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Abstract—The broad mite, *Polyphagotarsonemus latus* (Banks) was found to attack in a severe form causing enormous yield loss in *Jatropha curcas*, the bio-diesel plant used for bio-fencing in small and marginal lands. The mite sustained throughout the year on it and was observed to attain maximum population (25, 50 and 52 post embryonic stages of mites per square centimeter of leaf area) during July to September respectively and a minimum population observed during the month of December and January when the plants drop down all the leaves leaving behind young apical coppery leaves at the tip which provide shelter to it the cold and dry climate. The peak population of the mite was also observed to coincide with the flowering period of the plant. Severe infestation of the mite makes the apical leaves deformed, leathery, bronzed, curled and dropping down of the flower buds result in poor fruit yield. A positive and significant relationship was found between mite population and temperature and relative humidity. Apart from *Jatropha*, several other host plants of broad mite were recorded along with the damage symptoms in the Gangetic Basin of West Bengal. Downward curling of the leaf edges, silver shiny and later turning to bronzed infested apical leaves, shedding of flower buds, distorted flowers and shoots were observed in chili, jute, potato, marigold, hibiscus, gerbera, brinjal, bhindi, mungbean, cowpea, sesame, peppers, cucumber, cotton, tobacco and amaranthus. Egg laying inflicting damage to young leaf of *S.nigrum* and *Coccinia* sp was noted. The dominated weed hosts of this area like *Solanum nigrum*, *S. torvum*, *Ludwigia parviflora*, *Micania micranthum*, *Datura stramonium*, *Physalis minima* and *Odoratum* sp were observed to be infested by yellow mite and in most cases the whitefly (*Bemisia tabaci*) was further found to transmit the mites from *Jatropha* fence to commercially cultivated crop.