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First report of incidence of eriophyid mite *Aceria* sp. on *Amaranthus*

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ABSTRACT: Eriophyid mite *Aceria* sp. damaging Amaranthus (*Amaranthus tricolor*) is reported from India for the first time. The mite cause severe malformation of the shoot, making it fibrous and reducing the yield. Foliar application of spiromesifen or fenpyroximate reduced the damage symptoms. DNA data for the mitochondrial COI gene and nuclear gene (ITS 2 region) are being generated for accurate species delineation.

KEY WORDS: *Aceria* sp, damage symptoms, *Amaranthus*

Amaranth (*Amaranthus tricolor*) is a common leafy vegetable cultivated all over the country and its major growing season in Kasaragod district of Kerala is summer after the cessation of North East monsoon. Extensive cultivation of leaf amaranth is a common practice by farmers in the coastal area of Kanhangad in Kasaragod district. The crop sown during October is continued up to second week of June when the fields are usually submerged due to continuous rains. Shoots of amaranth are harvested every 10 days during this nine-month crop period. The marketability of the produce is good since crop is red in colour and farmers used to get a remunerative price. But from the last three years, growers of Padannakad area close to the Agricultural college campus are experiencing the problem of eriophyid mite infestation in the crop. February onwards mite affected plants show crinkling, deformity and malformation of tender leaves, severe reduction in leaf size and stunting (Plate 1). As the affected shoots become more

Plate 1. Crinkling & malformation of *Amaranthus* shoot

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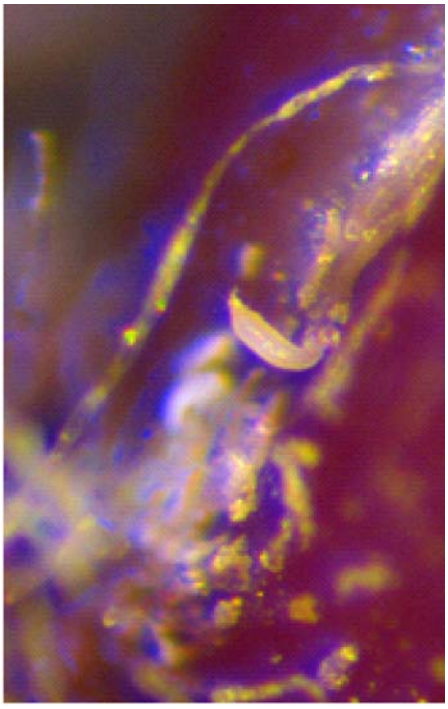

Plate. 2. stereomicroscopic view of *Aceria* sp

fibrous, causes difficulty in harvesting. Such damage symptoms get extended rapidly and by April month most of the plants in the field show the symptoms and the crop appears sickly because of stunted growth. Upon stereozoom microscopic examination of the affected shoot, eriophyid mites were noticed in good numbers. During May 2019, on an average as many as twenty mites were recorded in 5 cm length of tender shoot with the mite number ranging from 8 - 28. Because of severe stunting, the number of periodical tender shoot harvests from April to June was found reduced to almost 50 per cent. Since there was severe crinkling, malformation and fibrous nature of the shoots, marketability was severely affected, fetching the growers a very low price. Altogether there was more than fifty per cent reduction in the revenue as surveyed from 10 to 15 farmers in the affected area. An observational trial to contain the pest with foliar application of spiromesifen (@100g ai/ha) or fenpyroximate (@30g ai/ha) immediately after an harvest, reduced the mite damage symptoms almost completely for a period of at least 15 days when the new shoots would be ready for the next harvest (POP of KAU, 2016).

Eriophyid mites collected from the infested shoots were identified by the AINP (Agricultural Acarology) at UAS, Bengaluru as *Aceria* sp (plate 2). Of course, it is the first report of eriophyid mite on amaranth *Amaranthus tricolor* in India. *Aceria amaranthi* recorded on *Amaranthus* sp. from Tanzania in 1992 has been reported in great numbers (70 to 200 per gall) causing numerous galls on both the surfaces of young and matured leaves with all the developmental stages within the same gall. But the presently recorded *Aceria* sp. do not cause galls on leaves or shoots. Also taxonomically important the pattern of median, admedian and submedian lines on the dorsal shield are distinct for these two species under the common genus *Aceria*. Supportingly, DNA data of *Aceria* sp. for both mitochondrial COI gene and nuclear gene (ITS2 region) are being generated for more accurate species delineation.

It is worth undertaking detail studies on symptom or damage, ecological and economic aspects of this eriophyid mite infestation on the important vegetable crop *Amaranthus*.

REFERENCE

POP of KAU (2016) Package of Practices Recommends crops Kerala Agricultural University, Vellanikkara, Thrissur, Kerala, India

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