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First report of Aphid, *Aphis spiraecola* Patch (Aphididae: Hemiptera) on Aralia (*Polyscias* spp.) from Gujarat, India

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ABSTRACT

The occurrence of *Aphis spiraecola* Patch (Hemiptera: Aphididae) was observed on Aralia (*Polyscias* spp.) at College of Horticulture, S. D. Agricultural University, Jagudan, Gujarat, India during December 2023-January 2024 and subsequently during December 2024-January 2025. Specimens obtained from infested leaves and branches were preserved in 70 percent ethanol and examined for taxonomic identification. The identification was authenticated by ICAR-National Bureau of Agricultural Insect Resources, Bengaluru. Colonies comprising nymphs and adults were associated with leaf curling, crinkling and deformation, along with honeydew deposition and subsequent sooty mould development. Previous literature records the association of this aphid with Aralia in Karnataka; however, its occurrence as an infesting pest on this ornamental host in Gujarat has not been documented. The present observation therefore establishes a new geographical record of *A. spiraecola* infestation on Aralia in Gujarat, India.

Keywords: *Aphis spiraecola*, aralia, first report, Gujarat

INTRODUCTION

Aralia (*Polyscias* spp.), belonging to the family *Araliaceae*, is an important ornamental foliage plant widely cultivated for its attractive leaves and suitability for indoor decoration, landscaping and topiary. The genus comprises approximately 116 species, predominantly distributed across Southeast Asia and the tropical Pacific islands (Ashmawy *et al*., 2020). These perennial shrubs are valued for their dense foliage and adaptability to warm tropical and subtropical environments. However, their growth and ornamental appearance may be affected by several insect pests, including aphids, mealybugs, scale insects and spider mites, along with certain foliar diseases. Aphids (Hemiptera: Aphididae) are small, soft-bodied insects that suck on plant sap and frequently establish colonies on tender plant tissues. Their feeding activity can adversely affect plant growth and quality. Among the economically important aphid species, *Aphis spiraecola* Patch, commonly known as the spirea aphid, is recognised for its extensive host range. This species exhibits morphological similarities with *Aphis pomi* De Geer and their taxonomic differentiation has historically been challenging. Patch (1914) introduced the name *Aphis spiraecola to distinguish this aphid species*. According to Singh and Singh (2016) and Singh *et al*. (2024), this aphid has been associated with approximately 278 host plant species belonging to 68 botanical families. In India, *A. spiraecola* has been recorded on several agricultural and ornamental host plants. Its association with *Hedera helix* L., another member of the family Araliaceae was documented by Raychaudhuri (1973), while Joshi (2008) reported its occurrence on Aralia sp. in Karnataka. Although Chaudhari (2016) recorded this aphid in yellow pan water traps at Anand Agricultural University, Gujarat, documented infestation on Aralia from Gujarat has not been traced. Therefore, the present study documents the occurrence of *A. spiraecola* on Aralia (*Polyscias* spp.) in Gujarat, India.

MATERIALS AND METHODS

The investigation on occurrence of *Aphis spiraecola* Patch conducted in the college of horticulture garden of S. D. Agricultural University, Jagudan, Gujarat, India, during December 2023-January 2024 and December 2024-January 2025. The study site was situated at an altitude of 95 m above mean sea level (MSL). Aphid infestation was observed on the lower surfaces of leaves and branches of Aralia plants. Infested plant parts were examined and aphid specimens were carefully collected using a camel-hair

brush. The collected insects were preserved in glass vials containing 70% ethanol and transported to the laboratory of the Department of Plant Protection, College of Horticulture, S. D. Agricultural University, Jagudan, for morphological examination. Representative specimens were subsequently submitted to ICAR-National Bureau of Agricultural Insect Resources (NBAIR), Bengaluru, India, for taxonomic identification and confirmation of the species.

RESULTS AND DISCUSSION

In the present study, the species of aphid infesting aralia plant was confirmed as *Aphis spiraecola* Patch. The infestation of *A. spiraecola* was recorded on leaves and branches of aralia plant during the month of December 2023 to January 2024 and December 2024 to January 2025.

Nature of damage

Colonies of *A. spiraecola*, consisting of nymphs and adults were observed on the leaves and branches of Aralia plants. The aphids feed by extracting plant sap from the infested tissues resulting in leaf curling, crinkling and distortion. Their feeding activity was accompanied by honeydew deposition on the affected plant parts, which favoured the development of sooty mould. The combined effects of sap depletion, foliar deformation and mould development adversely affected the foliage quality and aesthetic appearance of the plants, thereby reducing their ornamental value.



Aphis spiraecola



Aphids on leaves of aralia

Morphological characters

A. spiraecola is a small, soft-bodied aphid exhibiting green to apple-green body coloration with a brownish head. The apterous individuals measured 1.45-2.00 mm in body length, whereas the alate forms ranged from 1.30 to 1.95 mm. The winged individuals were characterized by dusky patches along the lateral margins of the abdomen, six-segmented antennae and pale-coloured legs. The cornicles and cauda were distinctly dark brown to black. Normal wing venation was observed in the alate forms. These morphological characteristics were consistent with the published descriptions of *A. spiraecola* (Singh and Singh, 2016; Singh *et al*., 2024).

A. spiraecola was first reported on okra, *Abelmoschus esculentus* (L.) in India by Lefroy and Howlett (1909). Subsequently, several researchers reported this aphid on different host plants across India. Its occurrence was first documented on the ornamental plant *Hedera helix* L. (Araliaceae) by Raychaudhuri (1973) followed by its report on Aralia sp. (Araliaceae) from Karnataka by Joshi (2008). Chaudhari (2016) also recorded *A. spiraecola* in yellow pan water traps at Anand Agricultural University, Anand, Gujarat. However, no previous record of *A. spiraecola* infestation on Aralia spp. from Gujarat, India, could be traced. Therefore, the present study reports its occurrence on Aralia for the first time in Gujarat.

CONCLUSION

This is the first report of *Aphis spiraecola* infestation on Aralia in Gujarat, India. The infestation was observed from December to January.

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