

## OCCURRENCE OF ROOT APHID, *FORDA ORIENTALIS* GEORGE ON A HIGH ALTITUDE PLANT, *ARENARIA FESTUCOIDES* BENTH IN WESTERN HIMALAYA

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ABSTRACT: The root aphid, *Forda orientalis* is recognized for the first time from the roots of *Arenaria festuroides* Benth growing at an altitude of 3263 m amsl (latitude-32°33'58.8" N, longitude-76°58'21.8" E) in Lahaul and Spiti district of Himachal Pradesh, India. This is the first report of *F. orientalis* from Indian Himalayan region.

KEY WORDS: Root aphid, *Forda orientalis*, *Arenaria festuroides*, Himalaya.

*Arenaria festuroides* Benth (Caryophyllaceae) commonly known as "Fescue Sandwort" is a densely tufted perennial plant growing at high altitudes. It is found on rocks and stony ground in the Himalayas, from Pakistan to Uttar Pradesh in India and western Tibet, at an altitude of 3600-4500 m (Flowers of India, 2014). In India, it has been reported from Nilang valley in Uttarakhand (Rawat, 2008), Lahaul and Spiti (Srivastava, 2012) Bharmour forest division, Chamba, HP (Thakur et al., 2014). It has been reported as an endemic plant from Kinnaur, Himachal Pradesh (HP), India (Chawla et al., 2012). It has a short stem (2.5-15 cm) covered with long, soft, transparent and glandular hairs. Stem bears bristle-like, shining, spine-tipped leaves and short erect flowering stems with white flowers. It is commonly called as "mumri" in Chamba area (HP) and is considered as the best fodder for sheep in the region (Thakur et al., 2014). The whole plant is reported to be used in Tibetan medicine.

During our survey, we have found *A. festuroides* growing in the wild area near Centre for High Altitude Biology (CeHAB-a CSIR-Institute of Himalayan Bioresource Technology Centre) at Ribling, Keylong, Lahaul & Spiti (HP) at an altitude of 3263 m amsl (latitude-32°33'58.8" N, longitude-76°58'21.8" E) in the month of October 2013 (Fig. 1A). Some of the *A. festuroides* plants showing stunted growth were uprooted. Their roots were found to be infested with the colonies of root aphids, *Forda orientalis* George (Pemphiginae: Eriosomatinae) (Fig. 1B). Adults and nymphal stages were present. These aphids were very active after uprooting the plants and started dispersing from the colonies. Adult aphids were globose, smooth and yellowish white (Fig. 1C). This is the first record of the occurrence of root aphid, *F. orientalis* on *A. festuroides* and also from Indian Himalayan region. However, root aphids have been reported to occur in ant attended colonies on roots of Poaceae (*Botriochloa*, *Pennisetum*, *Saccharum*, *Sorghum*, *Triticum*) in Israel, Iran, Kazakhstan, India, Pakistan and east Siberia (Aphidsonworldsplants, 2014). It is reported on roots of *Oryza sativa* L. (NBAIL, 2014) and sorghum from southern India. It is an important soil arthropods infesting sugarcane in Coimbatore, Tamil Nadu (Jasmine & Ananthanarayana, 1975; Edwards & Veeresh, 1976). *F. orientalis* are confined to the root zone and presence of aphids is rarely noticed until the plant show symptoms of wilting,

excess tillering, stunted growth and early maturity (Musthak Ali & Sharatchandra, 1986).

To the best of our knowledge and available literature, the root aphid, *F. orientalis* has been reported for the first time from the roots of *A. festucoides* and also from Indian Himalayan region. Further investigations are required to be conducted in order to study the life cycle and population dynamics of these root aphids at the high altitudes of Indian Himalayan region.

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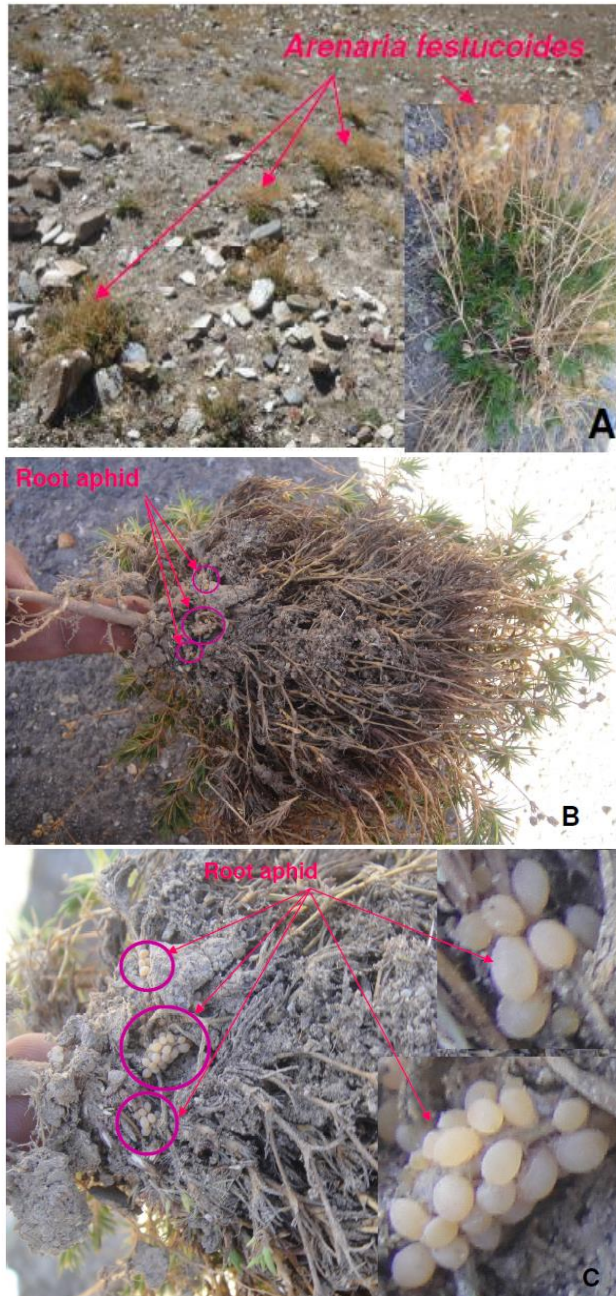


Figure 1. (A). *Arenaria festucoides* Benth in the field; (B). Uprooted plant showing colonies of root aphid, *Forda orientalis* George; (C). Enlarged view of root aphid colonies.