

Bibliography of the Beet Leafhopper, *Circulifer tenellus* (Baker), and Two of its Transmitted Plant Pathogens, Curly Top Virus and *Spiroplasma citri* Saglio et al.

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The beet leafhopper, *Circulifer tenellus* (Baker), has been known as the only vector of curly top virus (CTV) of sugarbeets in Western United States since the early 1900's (Ball 1905, 1906a, 1906b, 1907). CTV has also limited the production of beans, tomatoes, melons, peppers, cucumbers, spinach, other garden crops, and many ornamental plants in Western United States (Harris and Douglass 1948). In the last decade, *C. tenellus* has also been found to be the major vector of the citrus stubborn disease agent, *Spiroplasma citri* Saglio et al., in California (Oldfield et al., 1976, Oldfield and Kaloostian 1979). *S. citri* is now known to infect numerous wild host plants common to *C. tenellus* (Oldfield and Kaloostian 1979).

The beet leafhopper was originally thought to be native to North America (Davis 1927, Severin 1933), but later reports suggested that it was indigenous to the Mediterranean region (Oman 1936, 1948 and 1949). Its geographical distribution includes Western North America (Young and Frazier 1954), Hawaii (Beardsley 1966), Mediterranean countries (Oman 1969), Algeria, Libya, Egypt, Spain, Tunisia (Frazier 1953), Iran (Gibson 1967, Kheyri 1969), the southwestern region of South Africa (Young and Frazier 1954) and northwestern India (Bindra et al. 1970), and West Indies (Linnavouri 1959).

The beet leafhopper was first described by Baker (1896) as *Thamnotettix tenella*; later the name was transferred to the genus *Eutettix* by Forbes and Hart (1900) who erroneously credited Uhler as the author of the species. Baker (1907) restored his authorship of the species, but utilized *Eutettix* for its generic placement. Oman (1948) transferred *tenellus* to the genus *Circulifer* after discovering the taxonomic relationship of *tenellus* to several other species of the Old World Genus *Circulifer*. Linnavouri (1962) transferred *tenellus* to the genus *Neoaliturus* following his suppression of *Circulifer* as a junior synonym of *Circulifer*. Oman (1970) restored *tenellus* to *Circulifer* after providing a basis for separation of *Neoaliturus* and *Circulifer* as distinct genera. The species has also been referred to the Genera *Opsius* (Ball 1931), *Norvellina* (DeLong and Caldwell 1937) and *Distomotettix* (Ribaut 1938).

Scientific and technical papers concerning the beet leafhopper, curly top virus and *S. citri* are widely scattered in the literature of entomology, plant pathology, virology, microbiology, etc. The following bibliography was prepared as an aid to investigators engaged in studying the beet leafhopper and these two major disease agents it transmits. The names searched were beet leafhopper, *Circulifer tenellus*, *Eutettix tenella*, *Thamnotettix tenella*, curly top virus, *Spiroplasma citri* and stubborn disease.

The references reported herein were compiled from the Review of Applied Entomology 1913 to 1982 with the aid of a library-assisted computer literature search through the IRL Life Science Collection, (1978-Oct. 1982), CAB Collection (1972-Oct. 1982), BIOSIS Previews (1969-Oct. 1982); the AGRICOLA (1970-Oct. 1982) databases and miscellaneous publications acquired.

Bibliography

ADAMS, R. L. 1926. The sugar beet in California. Calif. Agr. Exp. Stn. Circ. 302: 1-34.