

## Provisional results of a survey of vectors of a phytoplasma in grapevines in South Africa

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Since 2006 the presence of Aster Yellows phytoplasma (subgroup 16Srl-B) has been reported from grapevine in South Africa (Engelbrecht *et al.*, 2010). Surveys of insects have been undertaken in affected vineyards, with the emphasis on sap sucking insects. Specimens were collected on grapevine as well as on surrounding plants and weeds within rows. Twenty six species were found in eight families (Table 1). Many probably don't feed on grapevine and a few are potential vectors.

Table 1. Sap sucking species found during surveys of vineyards in South Africa

Genus	Species	Family	Genus	Species	Family
<i>Cordia</i>	sp.	Aphrophoridae	<i>Exitianus</i>	<i>taeniaticeps</i>	Cicadellidae
<i>Rhinaulax</i>	sp.	Cercopidae	<i>Mgenia</i>	<i>fuscovaria</i>	Cicadellidae
<i>Acia</i>	<i>lineatifrons</i>	Cicadellidae	<i>Nesoclutha</i>	<i>erythrocephala</i>	Cicadellidae
<i>Aconurella</i>	<i>prolixa</i>	Cicadellidae	<i>Orosius</i>	<i>argentatus</i>	Cicadellidae
<i>Austroagallia</i>	<i>cuneata</i>	Cicadellidae	<i>Peragallia</i>	<i>caboverdensis</i>	Cicadellidae
<i>Balclutha</i>	<i>incisca</i>	Cicadellidae	<i>Thaumtopoides</i>	<i>ochraea</i>	Cicadellidae
<i>Balclutha</i>	<i>rosea</i>	Cicadellidae	<i>Toya</i>	sp.	Delphacidae
<i>Batracomorphus</i>	sp.	Cicadellidae	<i>Tropidocephala</i>	sp.	Delphacidae
<i>Cicadulina</i>	<i>mbila</i>	Cicadellidae	<i>Sogatella</i>	sp.	Delphacidae
<i>Cicadulina</i>	sp.	Cicadellidae	<i>Malenia</i>	sp.	Derbidae
<i>Circulifer</i>	<i>tenellus</i>	Cicadellidae	<i>Calauria</i>	<i>suliceps</i>	Flatidae
<i>Circulifer</i>	? <i>struthiola</i>	Cicadellidae	<i>Anchon</i>	<i>dukei</i>	Membracidae
<i>Empoasca</i>	<i>analis</i>	Cicadellidae	<i>Mulvia</i>	<i>albizona</i>	Ricaniidae

Of these, *Mgenia fuscovaria* (Stål) (Cicadellidae, provisionally Coelidiinae, Equeefini) has been reported as potential vector based on laboratory transmissions (Douglas *et al.*, 2010). *Mgenia fuscovaria* has poorly known hosts and to date recorded from the Western Cape Province on South Africa (Theron, 1984). It is a rather distinct leafhopper recognized by the shape of the head, face and large compound eyes. All species of *Mgenia* feed on shrubs and trees, although oviposition plants are unknown. *Mgenia fuscovaria* occurs in the southern and eastern parts of South Africa. *Mgenia angusta* mainly from the Highveld, and may have been introduced to two places in the Western Cape Province. *Mgenia capeneri* appears to be restricted to the Limpopo Province. Table 2 lists host records from specimens in the National Collection of Insects in Pretoria, South Africa.

Table 2. Host plant records of *Mgenia* (Coelidiinae, Cicadellidae).

Genus species	Locality	Date	Host plant	Plant family
<i>Mgenia</i> sp.	Pretoria	20/1/1993	<i>Protasparagus</i> sp.	Liliaceae
<i>Mgenia angusta</i> .	Pretoria	3/6/1993	<i>Euryops pectinatus</i>	Asteraceae
<i>Mgenia angusta</i>	Pretoria	4/2/1994	<i>Canthium</i> sp.	Rubiaceae
<i>Mgenia angusta</i> .	Pretoria	15/7/1977	<i>Lantana camara</i>	Verbenaceae
<i>Mgenia angusta</i>	Pretoria	21/5/1994	<i>Leonotis dysophylla</i>	Lamiaceae
<i>Mgenia fuscovaria</i>	Cape Town	30/5/1969	<i>Rhoicissus</i> sp.	Vitaceae
<i>Mgenia fuscovaria</i>	Ngome	5/2/1996	<i>Cineraria deltoidea</i>	Asteraceae
<i>Mgenia capeneri</i>	Vryheid	31/1/2007	<i>Maytenus senegalensis</i>	Celastraceae
<i>Mgenia capeneri</i>	Vryheid	31/1/2007	<i>Rhus pyroides</i>	Anacardiaceae

Other members of the Coelidiinae in South Africa are *Aletta*, *Croconelus*, *Equeefa*, *Gariesa*, *Keia*, *Mamates*, *Mlanje*, *Modderena* and *Nelrivia*. The eight species of *Equeefa* feed on a wide range of plants that includes renosterbos (*Elytropappus rhinocerotis*, Asteraceae). No host data is available for the species of any of the other genera.

There is uncertainty about the subfamily and tribal placement of these genera mentioned above. Nielson revised the world fauna (Nielson, 1991, 1992, Nielson et al. 2000) but made no mention of the status of the South African species. Theron (1986a, b) suggested their inclusion in the Coelidiinae, and specifically in a new tribe, Equeefini.

In other parts of the world some species of genera in the family Coelidiinae have been considered as pests, albeit not on grapevines. *Colladonus geminatus* Van Duzee (Geminata leafhopper) is an important vector of the western strain of the North American Aster Yellows virus (Nielson, 1968).

It appears that there are still other potential vectors, based on the results of the surveys in South Africa (see Table 2) and phytoplasma vectors in other vine growing regions. For instance members of Cixiidae have been found in Italy in vineyards that cause Bois noir, and are also found in South Africa, but so far not in vineyards. *Scaphoideus titanus* (Cicadellidae) is a vector of Flavescence dorée in France. Another species of *Scaphoideus*, *S. unimaculatus*, has a wide distribution in Africa, and South African records suggest a wide host range on grass, shrubs and trees. *Nesoclutha erythrocephala* has been recorded from the affected vineyards in South Africa and is a known vector of phytoplasmas elsewhere (Weintraub and Beanland, 2006).

## References

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