



## First report of '*Candidatus Phytoplasma trifolii*' (group 16SrVI) infecting *Sauropus androgynus*

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*Sauropus androgynus*, also known as sweet leaf, cekur manis, asin-asin and pak waan, is a shrub grown in some tropical regions as a leaf vegetable. It is one of the most popular leaf vegetables in South and Southeast Asia and is notable for high yields and palatability. During October 2010, plants of *S. androgynus* growing in small plots in the area of Poring Springs, Sabah, Malaysia, were noted showing proliferations of miniature leaves (reduced lamina and petiole length) at the apex of the plant emerging from cut stems where the plants had previously been harvested. Symptoms were observed in around 50% of the *S. androgynus* plants surveyed. Plants showing these symptoms were tested for phytoplasma.

Leaf samples from *S. androgynus* (from five plants with and two plants without symptoms) were collected, and total DNA extracted (FastDNA Spin Kit, MP Biomedicals, USA). Phytoplasma universal primers specific for 16S rDNA (R16mF2/R1 and R16F2n/R2; Gundersen & Lee, 1996) were used in a nested PCR assay. Nested PCR products of expected size (~1250 bp) were obtained for all the *S. androgynus* plants showing symptoms. Symptomless plants yielded no PCR products. Amplicons were purified (Wizard PCR Clean-up, Promega) and sequenced bi-directionally (University of Health Network, Toronto, Ontario, Canada). The partial 16S rDNA sequence obtained was deposited in GenBank (Accession No. HQ721242). BLAST analysis showed that the 16S rDNA sequence of *S. androgynus* phytoplasma was 99% identical to those of the group 16SrVI, '*Candidatus Phytoplasma trifolii*'. Restriction fragment length polymorphism analysis (RFLP) of amplicons using *AluI* and *RsaI* yielded profiles similar to those of the 16SrVI-A phytoplasma subgroup. Phytoplasmas of group 16SrVI have mainly been reported in North America and Europe (IRPCM, 2004; Příbylová *et al.*, 2008). In South Asia, 16SrVI phytoplasmas have been recently associated with diseases in other perennial herbaceous hosts, including *Calotropis gigantea* and *Portulaca grandiflora* (Priya *et al.*, 2010). However, to our

knowledge, this is the first world report of a 16SrVI-related phytoplasma infecting *S. androgynus*, which may represent a phytosanitary risk for other herbaceous perennial crops in the region. The National Plant Protection Organisation (NPPO) of Malaysia has been notified of these matters.

### References

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Figure 1

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