

## FACTORS AFFECTING THE DISTRIBUTION OF THE VINE SPECIES IN SUGARCANE: RESULTS OF GIS SURVEYS IN CENTRAL QUEENSLAND

By

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VINE MANAGEMENT IS becoming a bigger issue worldwide as countries adopt green cane trash blanketing and mechanised harvest. To better understand the distribution and the ecology of the vine species in some cane fields, SRA undertook two ground surveys in the Mackay district.

During the survey, 2603 and 1936 cane blocks were inspected in April–May 2012 and 2013 respectively. Presence/absence of vines and vine species visible from the cane fields edges were recorded in Manifold GIS.

The generated vine layers were overlaid with the paddock layers supplied by Mackay Sugar (Agdat, 2012–2013) and the soil layer for the Mackay district. To represent each year's data, principal component analysis based on Singular Value Decomposition was applied to a two-way frequency table of vine species by class of attribute.

Vine patches were observed in 26% and 17% of the cane blocks inspected in 2012 and 2013 respectively. In both years, the main vine species identified were pink and red convolvulus which were found in 13% and 9% of the paddocks inspected in 2012 and 9% and 6% of the paddocks in 2013 respectively. Siratro was the other most commonly observed vine species, found in 3% and 2% of the paddocks in 2012 and 2013.

In both years, Ipomoea vines occurred mostly in blocks planted with cane varieties with erect foliage like Q209<sup>Ⓛ</sup> and Q200<sup>Ⓛ</sup>. Blocks planted with newer varieties (often better cared for) and varieties not self-trashing (i.e. KQ228<sup>Ⓛ</sup> and Q232<sup>Ⓛ</sup>) were less likely to host vines.

The results also illustrate that most vine species can grow in many soil types but only pink convolvulus seems to adapt to challenging soil conditions like soloths.

These results help increase our knowledge of vine preferences in terms of cane varieties or soil type, which can be used to adapt farming practices to create less favourable vine-growing conditions.