FACT SHEET:
VANILLA BOTANY

by Crop Extension Division

VANILLA BOTANY

- Vanilla fragans (syn. Vanilla planifolia)
- Vanilla is a perennial herbaceous climbing vine. Vanilla is BOTH terrestrial and aerial with ground and aerial root in the same plant (hemi-epiphytic) and need trees for physical support.

PARTS OF THE VANILLA PLANTS

- The stem is cylindrical, flexible, succulent and brittle, and 1-2cm diameter.
- The leaves are fleshy, 10 – 25cm long and 3 – 10cm wide, and alternate with internodes 10 – 20cm long on either side of the stem.
- The roots: vanilla has two kinds of roots; ground and aerial roots
- Ground roots run above the soil and then branch and divide into the mulch. These are feeding roots (whitish, soft and hairy) are essential for the plant's strength and health and need to be kept well covered with mulch all the time.
- Aerial roots hold the vine up by coiling around the support branches. If ground roots become insufficient, damaged or sick, the aerial roots transform into feeding roots, running along the support tree to the ground to reach nourishment necessary to keep the plant alive BUT not able to carry enough food to support a plant in production.
- Management of rooting system is integral to the success and failure of a vanilla plantation.
- The flowers: the in-florescence are usually pale greenish yellow in color, open for a few hours from the in-florescence holding up to 10 - 30 flowers. 1 - 3 flowers open in a day from the base of the in-florescence upwards. On a flower, two petals and three sepals surround a trumpet-shaped labellum. The labellum envelops a column (gynostemium) holding the sex organ: stigma and stamen (pollen) which are separated by a thin flap-like leaflet called rostellum. The rostellum prevents natural

pollination. Manual pollination is the only way vanilla can be pollinated.

- The fruit: called beans in the trade, 10 - 25cm long, 8 - 10mm diameter, cylindrical and contain thousands of tiny round black seeds. Immature beans are dark green and as beans approach ripeness they lose their flower and change color to lighter shade of green.
- Ripe and over ripe beans left for too long on the vine begin to split from the tip of the beans.