

# INFORMATION GUIDE

## Identifying growth flushes in citrus

### What is a growth flush?

Citrus grow in several cycles of shoot growth (flushes) throughout the year. During a flush cycle new shoots emerge from buds located on older stems. Both inflorescences (flowers) or leaves can emerge from these new shoots. This period of rapid growth can result in shoots that grow more than 1cm per day. Expansion of new leaves begins before stem elongation is complete. The tiny, young leaf is initially light green or red-purple, and reaches 80% of its full size in 1-2 months, before turning dark green and leathery in texture.

### Identifying a citrus in flush

Look for:

- light yellow shoot tips (these may become either vegetative or reproductive shoots).
- small, light green or red-purple leaves.
- green, tender stems.
- 'ridges' along stems, giving them a triangular shape in cross section.

### When does a flush occur?

In temperate regions a growth flush usually occurs in Spring, with a more moderate flush of growth also occurring in mid-Summer to Autumn. In tropical areas of Australia, citrus will undergo a flush of shoot growth throughout the year. Citron, lemon and lime grow new shoots year round, regardless of a tropical or temperate location. During the Spring flush, both reproductive and vegetative shoots will grow, with the former developing into flowers.



Spring flush of Shamouti orange, with vegetative shoot (A), leafy inflorescences (B), and leafless inflorescences (C).

Source: Roy & Goldschmidt (1996), Biology of Citrus

## Leaf and shoot development (flush)



## Flowering



## Fruit development



## Fruit maturation

