

Managing frost damage

Frost damage

Frost damage to sugarcane will vary with landscape position (it is generally worse in hollows and creek flats), variety and the openness of the crop. In small, open crops, damage goes further down the stalk and is therefore more severe. There are four stages of damage.



Above: Frost damaged to small cane, note the undamaged cane in the background, hence the cold air settled in the low lying area. Established plant cane and small ratoon cane will recover. Slashing the dead tops is beneficial.

Foliage

If the top is only lightly damaged, there is no cause for concern, as the plant will continue to make new leaves and grow normally. Do not use foliar damage as the only guide.

Growing point

The growing point should be checked by slicing along the stalk through the cane top. If it has been killed, the top couple of nodes will be black and the heart of the top will also be brown or black. Sideshooting will occur from the top two to three eyes. These side shoots will replace the top and allow the plant to mature. Therefore, if the top is dead but there are sound eyes near the top of the stalk, it is best to leave late maturing varieties for the normal late harvest. Early harvest varieties should be harvested as soon as possible. New growth from the side shooting will lower the CCS level until new cane is produced and CCS levels stabilize.

Eyes

Slice the stalks further down to establish how many eyes have been damaged. In dead eyes, the growing point will appear

black. If the growing point and eyes are damaged, they will not side shoot to sustain the stalk. Deterioration of the stalk will set in so the cane needs to be harvested as soon as possible.



Above: Sticks of cane showing growing point and eye damage from frost.

Internal stalk

When damaged, the tissues inside the plant have a water-soaked appearance with light brown discoloration extending inwards from the buds. There may also be hollows in the stalk.

This breakdown of internal tissue will only be present in the most severe cases and will be in stalks that have dead tops and dead eyes most of the way down the stalk. Deterioration of these stalks will be rapid and these blocks are highest priority for harvest. High soil moisture levels hasten the deterioration in these blocks.



Above: Sticks of cane showing internal stalk damage.

Avoid using frost damaged cane for planting material

Frost will damage eyes in planting material. Therefore, avoid using cane that has been frost damaged. If the material has to be used, check for eye damage prior to use and discard any heavily damaged rows of cane. These mainly occur on outside rows.