Sugar Research Australia

Information Sheet

IS13015

Managing flood damaged cane

The best approach

Introduction

For growers with 'river flat' farms in far north Queensland, flood damage is a regular occurrence. In years with above average rainfall and protracted flooding, flood damage reaches the higher cane fields and is more extensive. Generally, the sugarcane crop can withstand this harsh treatment but is adversely affected when inundated for longer periods, especially if the cane is in the early stages of growth.

The effect on cane from flooding needs to be assessed carefully as quite often it appears worse initially. The effect of flooding on sugarcane yields depends on a number of factors, including age and height of the crop, duration of submergence of the growing point, stalk breakage and the silt load in the floodwater.

This information sheet highlights a series of questions to answer to determine appropriate course of action.

Is it worth saving the waterlogged crop?

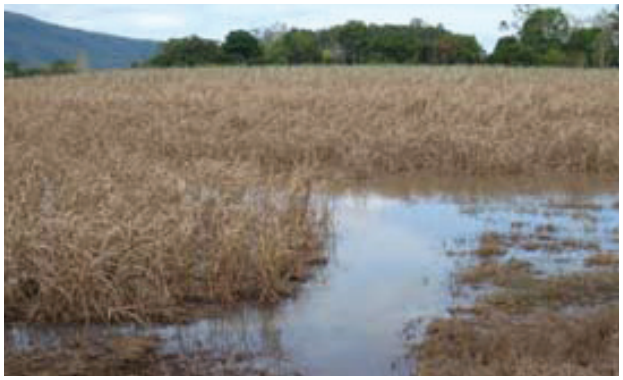
Where drainage water is still trapped within a field from blocked or silted drains or pipes, these should be cleaned out as soon as practical to drain the water from the field and prevent further crop loss. Further earthworks may be required during the dry season to overcome the problem.

Is it going to survive?

The growing point in the top of the cane plant will normally die if it is submerged for more than 4 days. If the growing point does not start to go brown and die after it has been out of the flood waters for a week or so, it will usually survive. The stalks may still side shoot. Where the growing point is killed, further growth will be via these side shoots. Losses will be small if the crop is well advanced (more than 2.0 m of cane stalk) at the time of inundation. Significant losses occur if the crop is small (less than 1.0 m of cane stalk) at the time of flooding. Where repeated flooding occurs, the side shoots may be killed in the later floods. If moderate losses occur, the crop may still be able to be harvested and then ratooned. However, if growth is badly restricted, but the stool is still alive, it is best to slash the crop and ratoon it. It will produce a normal crop the following season. Slashing is recommended for severely damaged cane, as the crop will have low CCS levels if harvested with significant extraneous matter from silt and debris.

Is it worth saving part of the crop?

Where part of a block is severely damaged, assess the area damaged and the area worthy of retaining. If the area is plant or first ratoon, a part could be harvested or slashed and ratooned and the remaining area could be replanted. Consider direct drilling with a double-disc opener planter. The replanting decision will also depend on the extent of the damaged area and the ability to carry out the extra planting in the appropriate planting window, plus having sufficient planting material. Fields prone to flood damage should be planted as early as possible to have the cane advanced at the start of the next wet season.



Flood damaged cane – Herbert floods.

What are my herbicide treatment options?

If the crop is badly set back by the flood and loses ground cover, a knockdown plus a pre-emergent herbicide may be required to control the resulting weed growth. Other areas may just require an additional application of a broadleaf herbicide to manage vines.

Will it need more fertiliser down the track?

Generally, additional fertiliser is not required following flooding. The need for fertiliser is off-set by the silt deposited in the field. Additional nitrogen fertiliser may be required where cane survived strong current which removed the topsoil.

Is it a plant crop, ratoon, etc?

The stage of the crop cycle plus other block issues such as damage through erosion will help determine if part or the entire block is going to be retained, even when it survives the initial flood. If there is no physical damage to the block itself and the block is early in the cropping cycle, steps can be considered to retain the viable areas and fallow the damaged areas, or replant the damaged areas.

What weed treatment is needed, and cost associated?

Grass and broadleaf weeds will have to be managed with almost all options, so seek advice from your local extension officer to implement the most cost effective weed management strategy.

How long has the crop been under water?

This question needs to be considered and duration documented. Cane may suffer around 15-20% yield loss after 5 days of submergence, between 30% and 60% yield loss after 10 days and between 37% and 100% yield loss after 15 days. The magnitude of loss for each period of inundation depends on stalk height with the least loss for 2.5 m stalks and the most loss for 0.5 m stalks for each period of inundation.

What is the temperature of the ponded water?

As ponded water increases in temperature when the sun shines after the flooding event, it will severely damage cane particularly if the cane is at least two thirds inundated and the water is not flowing. Being able to drain water from these fields is the only option open to saving part or the whole field.

Are there any varieties that are better suited to water inundation?

Limited information is available through QCANESelect™ on variety tolerance to waterlogging in different regions. At present there are a number of varieties with a rating, and they are highlighted in Tables 1 and 2.

Table 1: Waterlogging tolerance ratings for Northern coastal area.

Good	Average	Poor
Q231(b)	Q237(b)	
Q219(b)	Q230(b)	
	Q229(b)	
	KQ228(b)	Q200(b)
	Q208(b)	Q172(b)
	Q200(b)	
	Q190(b)	
	Q183(b)	
	Q135	

Table 2: Waterlogging tolerance ratings for the Herbert area.

Good	Average	Poor	Unknown
Q239(b)	Q242(b)	Q238(b)	Q250(b)
Q231(b)	KQ236(b)	Q237(b)	Q251(b)
Q219(b)	Q232(b)	Q233(b)	Q247(b)
Q119	Q231(b)	KQ228(b)	Q240(b)
	KQ228(b)	Q199(b)	
	Q219(b)	Q183(b)	
	Q208(b)	Q172(b)	
	Q200(b)	Q135	
	Q190(b)	Q96	
	Q183(b)	CASSIUS	
	Q138		
	Q135		

For further information on managing flood affected cane, contact your local adviser.