



One of the first detections of sugarcane smut in the Childers region.

Anniversary marks 10 years of tackling the smut challenge

This June is 10 years since sugarcane smut was first detected within the east coast cane industry. A decade on, we take a look back at that challenge and how the industry has handled this major disease incursion. By Brad Pfeffer

Childers farmer Joe Russo remembers the day clearly. It was in June 2006 and sugarcane smut was something that seemed like a distant threat for most farmers. Smut was recorded for the first time in Australia in the Ord River region of Western Australia in 1998 and was present in crops of our Asian neighbours to the north, but never had it been seen in the major growing regions of Queensland or NSW.

Isis Productivity Services' Bruce Quinn had been conducting routine plant inspections for ratoon stunting disease at Joe's property and while doing that he noticed something suspicious.

Bruce immediately worked with the local BSES extension officer to send a photograph for a visual analysis by BSES (now SRA) pathologist Barry Croft, based at Woodford. Samples were then taken to Brisbane to confirm whether it was smut.

Joe, who was on the BSES Board at the time, was in Brisbane over that June long weekend and he was there in the lab while Mr Croft confirmed that the sample was indeed sugarcane smut.

Federal and State Biosecurity officials were immediately notified and the incursion management response was initiated.

A control centre was established in Brisbane, as well as a coordinated effort and response with the State Government, which made significant funding contributions to the response, along with the Commonwealth Government.

"Once it was confirmed that this infectious disease was present, everything went into very strict quarantine with a whole range of procedures and protocols started," Joe said.

"You couldn't walk around without a quarantine suit on. It was a week or so before the harvest and we couldn't move machinery and we were also told that cane had to be walked through for inspection before harvest, as well as all the focus on plough out of infected crops."

What followed was a full scale government and industry red alert in the hope that the disease could be eradicated and every effort was made to assess and stop its spread.

Meetings in places such as Childers and Bundaberg saw a packed house of growers keen to know more about this new disease that had struck the industry.

Mr Quinn said there was a lot of unease among growers in the region as they faced a delay to the start of the harvest by two weeks, and uncertainty about having to plough out blocks of cane.

"I am proud though of how our growers moved so quickly to resistant varieties, which meant we didn't see the losses we could have seen," he said.

"In some cases, people were ploughing out first ratoon crops, and there was a lot of heartbreak, but I feel we came out the other side of things pretty good."

The region had a heavy reliance on the susceptible variety Q205[®], which meant there was a mammoth effort by BSES in sourcing resistant varieties from other milling regions on behalf of the industry.

BSES preparations for an incursion meant they knew exactly which varieties were resistant and could quickly make arrangements to source suitable seed cane for the southern growers.

Mr Russo says thanks to all that hard work, he feels that the real impact at Isis was mostly just in that first year, and after that the region recovered fairly well.

“There was a lot of angst at those early meetings with growers getting upset with some of the procedures. But I will never forget in one of these meetings there was one grower who stood up and said: ‘I am glad it was found here, because this is a region that can work together to beat it’. That really lifted morale and that is what happened.”

The initial hope that it could be contained evaporated as it was found in other parts of the southern region and, later that year, in the Mackay and Herbert regions. It was eventually found in all regions.

The focus then became strongly upon assisting the industry through a very challenging period and addressing serious risks to long term productivity and viability.

“Our emphasis at the time was that it was serious but also manageable, although in the heat of the moment it certainly took on a tone of gloom and disaster,” Mr Croft said.

“Our emphasis quickly became focused on preparing the industry for the long-term by switching to resistant varieties and ensuring our plant breeding program continued to produce high yielding new varieties but now with smut resistance as an essential extra trait.”

Research

The preparations for the 2006 incursion began many years prior to detection on the east coast.

BSES researchers, many of whom continue their work at SRA today, identified the risk that smut posed to the industry and knew that early preparation could one day be a valuable insurance policy for the industry.

They knew that losses to infected crops could be severe, ranging from 30-100% in susceptible varieties.

And like with all insurance policies, they hoped that it would never actually be needed – but were glad that it was there when smut struck.

Their work had been going already for about 10 years, first in Indonesia, and then in the Ord when it was discovered there in 1998. As a predecessor to SRA, BSES researchers had been increasing the emphasis within the breeding program toward greater resistance for sugarcane smut.

This put the industry on a strong footing to deal with the problem when it arrived.

Dealing with the solution to sugarcane smut came through varieties. For example, in the immediate term, 3000 tonne of smut resistant varieties, Q208[®], Q177[®] and Q200[®], was transported from the Burdekin to the southern region in 2006, which were varieties that the region did not have at the time.

KQ228[®] and Q232[®] were scheduled for release and the release was accelerated by supplying these varieties as tissue culture plantlets.

The focus quickly centred on the long term recovery, which has continued over the last decade through several “Smut Buster” programs that have occurred as part of the SRA breeding program.

The aim of this program and its successors was to develop high-yielding smut-resistant varieties, and without it there would have been fewer productive and smut-resistant varieties released to growers.

“We decided at the time to minimise the immediate losses by replacing susceptible varieties with the resistant varieties we had identified in trials in the Ord and Indonesia and to concentrate on the long term solution,” Mr Croft said.

“We feel we managed it successfully, and now it is considered just another one of the important diseases that we can successfully manage with resistant varieties.”

He said that nearly all susceptible varieties have been removed from production.

More information on the smut tolerance of varieties is available via the online tool, QCANESelect™.



Above: SRA pathologist Barry Croft says that the SRA strategy to focus on the long-term solution post-smut has served the industry well.

10 years on

When smut was detected later in 2006 in the Mackay region and in the other regions in 2007 and 2008, it was clear that the problem was here to stay.

Looking back, Herbert grower Chris Bosworth said that everyone had expected that at some stage the east coast would face smut, but that it arrived sooner than expected.

"I was fortunate that I had a lot of Q200[®] and it being resistant meant that I wasn't in as bad of a position as some people in the district," he said. "But a lot of the varieties we lost were heavy yielding, such as Q174[®] in particular, which was an excellent variety, so this had a huge impact on a lot of people."

He said that the local industry continues to battle smut to this day, but it was now a problem to be dealt with like other diseases.

Back at Childers, and Joe Russo said that the early days of the smut detection were now a memory of a stressful time, but that the industry has recovered.

"10 years on, to BSES's and SRA's credit, smut is very high on the agenda when it comes to the criteria for releasing new varieties. It is not really the problem that we feared it could be," Joe said.



10 years on and Herbert grower Chris Bosworth says that smut is now dealt with just like other crop diseases.