

Ty and Rachel Kirby

Maximising weed seed capture at harvest in Beacon

Owners:	Ty and Rachel Kirby
Location:	Beacon and Nyabing, Western Australia, 450km between farms
Farm Size:	Beacon 4500-5000ha, Nyabing 2800ha, 100% cropping
Annual average rainfall:	Beacon 300mm, 200mm growing season long term
Soil types:	Salmon Gum loam, Mallee sand, wodjil sand, cracking clays
Crop program (2017):	Beacon: 4200ha 90% of farm sown. Dry seeded majority of program. wheat 3500ha, barley 350ha, canola 350ha fallow
Typical Rotation:	Beacon: five-year rotation: four cereals then canola or fallow, bringing canola back into the system. Double break in rotation for the grass weeds. Nyabing: canola, wheat, barley

For Ty Kirby, harvest weed seed control (HWSC) has become more of a conscious decision. It provides the confidence to sow early and he has noticed a significant decline in weed numbers.



IMAGE: Ty standing in front of his header comb fitted with coreflute.

Originally, Ty started out narrow windrow burning, as a cheap, easy to set up option. However, he ran into several issues both at Beacon and Nyabing, one of which was the significant time and effort it took to burn windrows post-harvest.

In Beacon, windrows lacked the biomass to burn properly, and sufficient heat wasn't generated to destroy weed seeds. This meant that weed seeds were concentrated in the windrow lines the following year.

In Nyabing, there were issues with whole paddocks burning as the fire wasn't easily contained in the windrow. Not being a fan of burning crop residue, Ty began looking at other options.

Two years ago, Ty fitted EMAR chaff decks to both headers. A significant benefit of using chaff decks was its fit with the properties controlled traffic system and it meant that there was no requirement to burn, and it retained stubble.

Chaff decks require a greater investment than fitting a windrow chute, but at the time, the other option was to fit a chaff cart and that was not only more expensive, but also would require additional harvest capacity and potentially slow down harvest.

According to Ty, the chaff deck was relatively easy to fit the first time, and they are easy to take on and off. He has fitted chaff decks to both Case and John Deere harvesters and said they are simple in how they work. "Once fitted, it's just a matter of going harvesting".

Currently every crop type has the chaff deck however, there may come a time when narrow windrow burning is used in canola, but for now Ty is focused on keeping things simple.

"Using the chaff deck means I know where the weeds are and I know where the first germination will be, especially following summer rainfall and I can target them accordingly." Farming in the north eastern wheatbelt has meant Ty has made modifications to his header front to increase grain and weed seed capture in lower biomass crops.

IMAGE The Emar Chaff deck fitted to Ty's header.

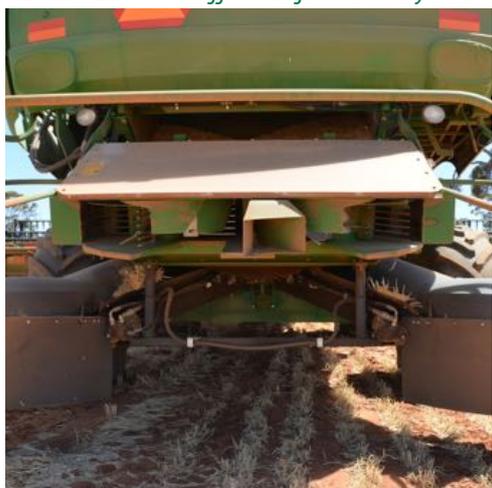
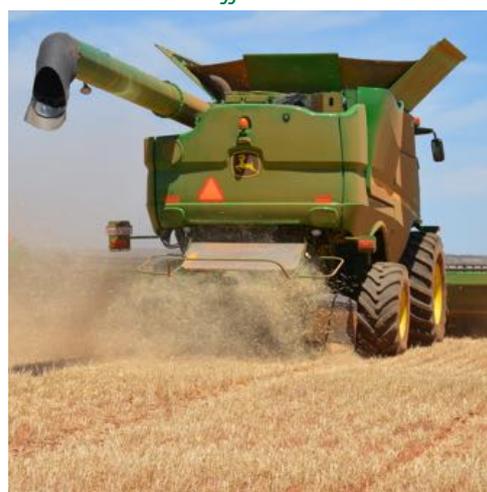


IMAGE The chaff deck in action



Weeds, especially ryegrass, tend to grow prostrate in low yielding crops, are easily knocked over, and not harvested when crops are thinner. Ty has fitted Primary Sales narrow knife guard with plastic extension fingers to capture and hold heads on the front if they want to fall forwards.

Harvest speed is dictated by grain losses, so harvesting speed is not pushed. Of concern to Ty, is going to the effort of capturing weed seed and then not collecting it in the chaff line as it passes through the header.

Following a session on harvesting low biomass crops at the Merredin and Districts Farm Improvement Group (MADFIG) field day in 2016, Ty fitted coreflute onto the reel to assist in sweeping grain and weed seed of the knife and on to the draper belt.



IMAGES: (L) The chaff deck (R) Harvesting at Kirby's in Beacon, note the coreflute on the header front.

The coreflute sits approximately 25mm longer than the reel fingers and has a sweeping action to pull grain and weed heads into the header front and prevent them falling backwards off the knife.

The coreflute was a cheap, easy to fit option and Ty comments that “it’s been worth giving a go as the more (grain & weed seeds) we get in the header front, the better.” In the long term, moving to a Harrington Seed Destructor or Seed Terminator of some kind is the plan.

This would eliminate returning weed seeds back to the paddock and weedy tram lines, however, it doesn’t fix the problem of getting weed seeds into the front of the header and Ty sees this as future challenge for his farming system. For the Kirby’s, HWSC is a critical part of their cropping enterprise. Capturing weed seed at harvest, whilst challenging in a low rainfall environment, is contributing to a decrease in weed numbers and confidence in sowing early to maximise opportunity.



IMAGE: (L) Critical to capturing weed seed at harvest is cutting low, here harvest height is approximately 7cm from the top of the interrow