

# CASE STUDY

## Mic Fels

Mic Fels farms at Wittenoorn Hills, north east of Esperance. Running a 100% cropping program, Mic originally got involved in Harvest weed seed control through narrow windrow burning, which he would use after his barley rotation. But, after hearing about others that were using chaff lines over the majority of their program, he spoke to them and then decided to give it a go.



For his hardware, Mic made his own chutes from plastic, which he shaped himself using a heat gun. With each sheet costing approximately \$300, he was able to run through several iterations quite cheaply and make alterations where necessary. The main problems he faced during the design process was to make the chute steep enough so that chaff wouldn't catch on it and block up, which he says is mainly due to the high humidity and low temperatures he often sees during harvest in Esperance. Also, he had to ensure that the chute would catch all of the chaff coming off the sieves, and not let too much chaff escape.

Mic's main issue is that chaff lines can be a 'nuisance' where he sows the crop. "Because the chaff lines spread out a bit, I don't get good establishment in the chaff lines." Although Mic uses a disc seeder, he says that the poor establishment is from not getting good seed soil contact, and not from residue hair-pinning. Although this is causing some problems, Mic has played with both seeding the chaff rows and leaving them undisturbed. "Not seeding through the chaff lines keeps them tighter, but it leaves more gaps in the crop. Seeding through the lines gives less gaps. Sometimes the seed comes up where you seed through, and I'd rather have crop growing there than not. It's extra competition."

Another negative that Mic is also finding is that the chaff lines provide a good habitat for earwigs to live, which attack his emerging canola. To manage this issue, he says an insecticidal seed dressing seems to be the best.

As well as earwigs, he said that sheep also seem to enjoy the chaff lines, though they don't negatively impact his crop! "We lease some country from a neighbour, who runs sheep. He grazes the stubbles over summer, and you might as well have troughs every 40ft up the paddock. The chaff lines are just about all gone by the end of summer- it's like a feed lot, they love it! It's pretty good quality feed, a bit like chaff dumps. If you are running sheep, both chaff dumps and chaff lines are good."

Unlike other people on a fully matched CTF system, Mic said that he went for a single chaff line over a deck for simplicity, and as a form of insurance also. "One of the things I was worried about when I started was creating a monster, a concentrated band of weeds in the paddock that I couldn't get rid of. If I put it in the middle, besides being cheaper and easier, I could also drop a narrow windrow on it and burn it, and it's all gone again."

*Despite there being some drawbacks to the chaff lining system, Mic said that it is his preferred option at the moment.*

**IMAGE:**  
*Operating on the KISS principle, Mic's thermoplastic chutes are cheap and cheerful.*



But, Mic said that the chaff decks are better suited in other ways. Namely, that when used in a CTF system there will be good dust suppression during summer spraying. Also, he said that there seemed to be a trade-off between the chaff decks and the chutes between the speed of chaff breakdown and the number of germinations of weeds from the chaff.

"Actually driving on the chaff lines will make them breakdown faster. Because I don't drive on mine, they stay light and fluffy, and they don't hold moisture. So, they don't mulch as quickly, and I think that's part of the trouble I have at seeding. But, because they are light and fluffy, they don't hold moisture, and they get fewer weeds germinate. So even though we are losing out by having the chaff persist for longer and having some dramas at seeding, you get fewer germinations." Although his chaff lines are persisting longer than those using decks, they are still fairly decomposed three years down the track. "Three year old residue is rotten, two years is half rotten and one year old is definitely there."

Despite there being some drawbacks to the chaff lining system, Mic said that it is his preferred option at the moment. "I don't expect to get all the weed seed down here, so I don't see the point of going to extreme lengths to get it all. By the time the crop is barely ripe, probably a third of the ryegrass seed is on the ground as it is shattered. That's why I haven't gone for a chaff cart- they don't really appeal that much to me because I only get a portion of the seed anyway. So there is no point busting my arse trying to collect all the seed when I lose a percentage anyway. I can achieve the same with a \$300 piece of plastic as I can with a HSD."



*Where the paddock is waterlogged, the weeds are much more competitive, and there seems to be a better germination of the chaff.*



*Mic ran through many iterations to get a design that worked, trying to overcome the problems of chaff blocking the chute.*



*Green ryegrass can make it through the machine un-threshed, so having the option to put everything into windrows for burning works well for Mic.*





Although Mic doesn't have a problem with wild radish on his farm, he said that using a 'chaff only' system wouldn't be the best to manage that weed burden. As he often harvests while the wild radish is still green, Mic said that he would likely see the radish pods not end up in the chaff. But, he said that the brome grass response to chaff lining was highly visible. On some of his ex-cattle country that typically grew nothing but brome and silver grass, he said that he now has 39 feet of clean crop, then a foot of brome where the chaff lines are. "I'm really happy with that, because I now have 39/40ths of my paddock that is clean, whereas before it would have been brome every year." Also, he said that brome grass tends to survive better in the chaff line than does ryegrass, as he will often see brome grass emerge in chaff lines, whereas the ryegrass never really seems to come up.

**IMAGES:**

*Crop competition is key. Despite the chaff going in the middle, the wheel tracks tend to be weedier.*



All in all, Mic is positive about the effects of chaff lining on his farm. For him, the main strengths of it are that it doesn't cost him any time at harvest or before seeding, and that he can easily switch to narrow windrow burning when he needs to. "Everyone has an opinion about what's better; wants to argue that chaff carts are better than chaff decks, or chaff decks are better than windrows. I don't think it matters a stuff, just so long as you are doing something! I think the only stupid thing is not doing anything at all. Everything works, whatever spins your wheel, but spreading it out on the paddock is just madness."