

Farm management consultant Ben Curtis' financial analysis of making decisions around frosted wheat crops provides insights beyond the Esperance region where he works. Photo supplied: Ben Curtis



Cool head needed to assess frosted crops

Looking back on a tough time can reveal insights to guide future situations. This is certainly the case a year on from a bad bout of frost that hit crops in the Esperance, Western Australia region in September 2019. By **Jill Griffiths**

The first reaction croppers often have when hit by frost, or any other calamity for that matter, is despair and then they want to leap into action. This was the observation Esperance-based farm management consultant Ben Curtis, Farmanco, made last year after the frosts. The lessons from that experience are worth remembering, Ben said.

"We had the most severe frost we've ever had here last year," Ben said. "People were shell-shocked. They had reasonably good crops and then they woke up and had no crops."

"It is human nature to want to do something once you experience a devastating event like we had. Men in particular tend to want to fix things. There were guys who were going to hack all their crops down for hay. The risk was that people would cut too much hay down and wear a cost."

PUT MENTAL WELLBEING FIRST

"It is very important that you realise that you are stressed and to try and not let this effect rational decision making," Ben said. "Sometimes doing nothing will cost you less and will be the best course of action."

Ben did what any numbers-minded farm management consultant would do; he crunched the numbers and advised his clients to do the same, relevant to their situations.

His aim was to compare the potential return from hay compared to any potential return from frosted grain.

He said the first step was to estimate the hay yield if the frosted crop was cut and also to estimate the grain yield that would be achieved if the crop was carried through to harvest.

"When considering hay, it is important to think of all the costs and make an estimate of the yield," he said.

ASSESS THE DAMAGE

"Assessing frost damage is difficult as there are many factors at play. As a general rule my experience is that the damage ends up being less than you think once you put the header in."

"Get your agronomist to have a look with you."

Ben said that in the Esperance region last year, there was very little sub-soil moisture, making it particularly difficult to predict whether secondary tillers would contribute any grain after the crops were frosted. This

factor complicated the task of estimating yield from the frosted crops.

CALCULATE YOUR HAY YIELD

To do the comparative calculation between hay and grain, the hay yield must also be calculated.

"Hay includes the grain biomass and the leaf and stem," Ben said. "So you will get more hay than your expected grain yield (pre frost)."

"Harvest index is an equation that helps with this calculation. Harvest index equals the grain yield divided by total biomass. Fifty per cent is a good rule of thumb to use."

"If you thought you were going to get three tonnes of grain, then work on six tonnes of hay. A conservative estimate might be grain yield multiplied by two minus one tonne."

"For example, three tonnes of grain means six tonnes of hay minus one, so is five tonnes of hay. Use this figure in the economics."

ADD UP YOUR COSTS

Ben put the hay yield figure into a spreadsheet, with some estimates of the cost of making the hay. ▶

“No matter what happens you are going to have to cut the crop in one way or another, so this cost is a given,” he said. “But you also have to rake, bale, stack, store it and freight it.

“In our region, the best market would be local, because freight is a large component of the consideration, but with a lot of crops frosted, any local buyers would dry up pretty quickly.”

Ben calculated freight as potentially being up to \$90/tonne, using 1.5 times the grain freight costs as an estimate, which he considers a good estimate due to the bulky nature of hay.

“High density hay works out to be the same as grain freight,” he said.

WORK OUT YOUR EXPECTED PROFIT

When he ran these numbers through his spreadsheet, a hay yield of 5t/ha and a freight cost of \$90, gave a gross margin of \$53/ha (Figure 1).

“At \$150/tonne then this makes the whole exercise only just better than break even,” Ben said. “There are a lot of costs up front, which means if something goes wrong with price or quality then you could be losing money by making hay.

“To put it in perspective, this would be equivalent to harvesting 0.35 tonnes of grain assuming it is of reasonable quality.

“However, if you could achieve \$200 per tonne then potentially you could make \$303 per tonne, which would be equivalent to 1.3 tonnes of wheat.” (Figure 2.)

“This demonstrates the sensitivity of this exercise. At \$200 it is tempting but it doesn’t come without risk.”

Similarly, if freight costs are lower, the profitability shifts substantially. At a freight cost of \$70/t, the GM goes up to \$153/ha (Figure 3).

“If you are tempted, do your research and don’t do your whole program,” Ben advised. “Hedge your bets.”

OTHER CONSIDERATIONS

There are also other considerations. “If you are making high quality hay you set yourself up for it, but when you are just cutting for the frosted crop, you may not be set up for it and you may not be experienced in the processes,” Ben said.

“In that case, it may be more expensive to cut (because you need to get contractors or machinery in) or a more stressful process. A lot of croppers who cut frosted crops for hay actually have no experience in cutting hay, so there can be challenges with knowing what to do.

“Wheaten hay may be affected by chemical residues, depending on your spray program.

Figure 1. Crunching the numbers – if freight is \$90/tonne and hay is worth \$150/tonne

| Grain | | | Hay | | |
|------------------------------|-------|-------|--------------------------------|-------|-------|
| Yield | t/ha | 0.35 | Yield | t/ha | 5.00 |
| Harvest | \$/ha | 40.0 | Mower Conditioner | \$/ha | 50.0 |
| Road Freight | \$/t | 10.0 | Rake | \$/ha | 5.0 |
| Levies | \$/t | 6.1 | Baling | \$/t | 33.0 |
| CBH Freight (Bin to Port) | \$/t | 1.3 | Handling/Stacking | \$/t | 2.0 |
| Insurance | \$/t | 6.0 | Freight | \$/t | 90.0 |
| Receival & Assessment Fee | \$/t | 10.4 | Storage | \$/t | 2.0 |
| | | | Insurance | \$/t | 1.5 |
| | | | Interest @ 6% | \$/t | 0.0 |
| Cost / Ha (Costs to grower) | | 45.6 | Cost / Ha | | 697.5 |
| Average Cost / Tnn | | 130.3 | Average Cost / Tnn | | 139.5 |
| \$ / t Wheat Delivered Port | \$ | 300 | \$ / t Hay Delivered Processor | \$ | 150 |
| Income / Ha (Cash to grower) | \$ | 99 | Income / Ha | \$ | 750 |
| Gross Margin | \$ | 53 | Gross Margin | \$ | 53 |

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Supplied: Ben Curtis

Figure 2. Crunching the numbers – if freight is \$90/tonne and hay is worth \$200/tonne

| Grain | | | Hay | | |
|------------------------------|-------|------|--------------------------------|-------|-------|
| Yield | t/ha | 1.30 | Yield | t/ha | 5.00 |
| Harvest | \$/ha | 40.0 | Mower Conditioner | \$/ha | 50.0 |
| Road Freight | \$/t | 10.0 | Rake | \$/ha | 5.0 |
| Levies | \$/t | 6.1 | Baling | \$/t | 33.0 |
| CBH Freight (Bin to Port) | \$/t | 1.3 | Handling/Stacking | \$/t | 2.0 |
| Insurance | \$/t | 6.0 | Freight | \$/t | 90.0 |
| Receival & Assessment Fee | \$/t | 10.4 | Storage | \$/t | 2.0 |
| | | | Insurance | \$/t | 1.5 |
| | | | Interest @ 6% | \$/t | 0.0 |
| Cost / Ha (Costs to grower) | | 60.8 | Cost / Ha | | 697.5 |
| Average Cost / Tnn | | 46.8 | Average Cost / Tnn | | 139.5 |
| \$ / t Wheat Delivered Port | \$ | 300 | \$ / t Hay Delivered Processor | \$ | 200 |
| Income / Ha (Cash to grower) | \$ | 367 | Income / Ha | \$ | 1,000 |
| Gross Margin | \$ | 306 | Gross Margin | \$ | 303 |

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Figure 3. Crunching the numbers – if freight is \$70/tonne and hay is worth \$150/tonne

| Grain | | | Hay | | |
|------------------------------|-------|------|--------------------------------|-------|-------|
| Yield | t/ha | 0.70 | Yield | t/ha | 5.00 |
| Harvest | \$/ha | 40.0 | Mower Conditioner | \$/ha | 50.0 |
| Road Freight | \$/t | 10.0 | Rake | \$/ha | 5.0 |
| Levies | \$/t | 6.1 | Baling | \$/t | 33.0 |
| CBH Freight (Bin to Port) | \$/t | 1.3 | Handling/Stacking | \$/t | 2.0 |
| Insurance | \$/t | 6.0 | Freight | \$/t | 70.0 |
| Receival & Assessment Fee | \$/t | 10.4 | Storage | \$/t | 2.0 |
| | | | Insurance | \$/t | 1.5 |
| | | | Interest @ 6% | \$/t | 0.0 |
| Cost / Ha (Costs to grower) | | 51.2 | Cost / Ha | | 597.5 |
| Average Cost / Tnn | | 73.1 | Average Cost / Tnn | | 119.5 |
| \$ / t Wheat Delivered Port | \$ | 300 | \$ / t Hay Delivered Processor | \$ | 150 |
| Income / Ha (Cash to grower) | \$ | 198 | Income / Ha | \$ | 750 |
| Gross Margin | \$ | 146 | Gross Margin | \$ | 153 |

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Supplied: Ben Curtis

“Frosted wheat may be worth less than the \$300/tonne used in the sample calculations here, but the yield doesn’t necessarily have to be that high to equal the income from wheaten hay.”

Ben said there is yet another hidden cost in cutting a wheat crop for hay; cutting hay exports more nutrients than does harvesting grain, so there is an impact on next year’s crop and fertiliser requirements.

“The general rule when you harvest, if you cut for hay you will almost double the nutrient you export.

“With a five-tonne hay crop, you are exporting \$222 worth of nutrients per hectare,” he said (Figure 4). “In some soils, potash may not be an economic concern to you but either way, it is a significant amount of nutrient exported.

“How bad does it have to be to want to cut for hay, depends on all these factors. It depends on where you are – if the local value of hay is high and freight costs are low, it can be worthwhile cutting for hay.”

In Esperance last year, the hay ended up being worth \$200/tonne, so the numbers worked out at the better end of the scale.

Ben reiterated that when faced with a

Figure 4. Nutrients exported by cutting hay

| Nutrients removed from a 5 tonne hay crop | | | |
|---|---------|----|-----------|
| | Units/t | | \$/ha |
| N | 16 | \$ | 96.00 |
| P | 2.50 | \$ | 46.88 |
| K | 13.00 | \$ | 71.50 |
| S | 4.00 | \$ | 4.40 |
| TE | 0.11 | \$ | 3.85 |
| Hay Nutrients Exported \$/ha | | | \$ 222.63 |

Supplied: Ben Curtis

frosted crop, the thing to do first is to sit back and think.

“Don’t do a kneejerk response,” he said. “Look after your mental state of mind first. Get some advice. Go from there.”

That’s advice that works for any region in any year. **FA**

If you are suffering mental anguish seek help. Beyond Blue: www.beyondblue.org.au

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