

Producing export hay on upper Eyre Peninsula

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EXTENSION



Key messages

- **Four out of five growers surveyed currently grow export hay after a break crop (pulse or canola) in their rotation.**
- **Export hay provides a grass weed control option for a second season break.**
- **Paddock selection is important, with firm ground, low grass weed numbers, short stubble, no rocks and accessibility for road trains a high priority.**
- **Yallara, a multi-purpose oat variety, is grown by 3 out of 5 export hay growers, with Brusher and Durack also being popular.**

Why do the survey?

Farmers in the Kimba area have been producing oaten hay for export for several years. The industry has been expanding, with dedicated storage facilities established in recent years on the outskirts of Kimba. To maximise production and quality, the Buckleboo Farm Improvement Group (BFIG) wanted to identify the best fit of oaten hay in the rotation and other issues, through case studies of farmers currently growing export oaten hay in their farming systems.

How was it done?

A survey was sent to seven export hay growers in the Kimba and Buckleboo area and five were returned. The information in the case study surveys were compiled into this article.

What happened?

Farm size in the survey group ranged from 4,500 ha to 7,500 ha. The soil types ranged from heavy red clay loams to sand over clay and grey calcareous sands. The annual rainfall ranged from 290 to 340 mm, with a range of 200 to 220 mm growing season rainfall.

Export hay production ranged from 150-300 ha or 3 to 6 % of the farming area, with one grower planning to expand production in 2019 to 7.5% of the farm area. The growers surveyed have been producing export hay for between 3-5 years.

The growers surveyed intend to grow a portion of export hay each season, with one grazing at least a portion of the area sown to hay in two out of three seasons. Hay production has averaged around 3.5 t/ha. 2016 was a good year, producing around 4 t/ha, although the wet September caused quality downgrades. One grower stated 2017 was a drought, and half the hay crop was not cut, with the remainder yielding about 1.5 t/ha, and 2018 was a drought with yields of 1.5-2 t/ha.

Current crops grown within the rotations were cereals (wheat, barley and oaten hay), canola, legumes (peas, vetch, lentils and lupins on sand) and medic pasture. Three of the farms have

livestock enterprises, with one recently going back into livestock and the other sometimes agisting livestock.

Three of the growers are using the multi-purpose oat variety Yallara. One is growing the variety Brusher as the yields have been very good. Another is growing Durack as it is very similar to Yallara but two weeks earlier in flowering, so therefore it can be cut earlier to get better grass weed seed control before maturity. Most growers use the same fertiliser as in their whole cropping program; between 50-70 kg/ha DAP, Croplift12 at 70 kg/ha (containing sulphur) or 50 kg/ha DAP plus 30 kg/ha urea (post cereal).

Growers with livestock believe the oaten hay enterprise compliments their farming system, as failed hay crops or off-spec hay can be utilised by livestock, and early grazing paddocks are available before harvest. Livestock in the system allows a low risk, profitable legume crop to be grown in the rotation. One grower commented that hay is currently the highest gross margin crop so it can be grown on the best prepared paddocks, immediately after a vetch or medic. These paddocks are also the cleanest, and weed free hay is preferred to achieve premium market quality. Hay also gives a second year of grass weed control after the legume, which is helping to reduce grass weed numbers.

Some growers are still working on a best fit for hay within the rotation, with most growing the hay crop after a break crop. One grower is mainly growing hay on canola stubble, but extra care needs to be taken to ensure that canola residue does not enter the bales. Hay should be grown before grass pressures become too high, and is grown where there is good barley grass and brome grass control, however ryegrass may continue to be an issue.

Another grower grows hay after a legume to get as much growth as possible and a second year of grass control. Another grows oaten hay after two wheat crops, with the hay followed by a pea crop. Hay is a very handy tool in reducing ryegrass numbers, and also to ensure income in all years, as crops grow bulk most years, but this does not always convert to grain yield due to frost or dry springs.

Only one grower is growing oaten hay before a legume, following a wheat or barley phase, providing that low barley grass numbers will allow this. Barley grass is the biggest limitation to where hay can be grown, and the hay paddock will be shifted through the rotation planning process to find areas best suited in terms of grass numbers.

Paddock selection

Paddock selection and preparation for export hay is important, with firm ground if possible, low grass weed numbers, the previous stubble harvested as short as possible to minimise stubble getting into the hay; and all rocks (and animal carcasses) picked or crushed prior to planting. Narrow windrow burning reduces grass and stubble so as not to contaminate the hay. Accessibility is also important as road trains need to access the paddocks.

One grower selects a paddock needing a two year break for ryegrass weed control. Using wider row spacing of 30 cm (12") the grower double sows the hay crop, so that the hay can be held up and sat off the ground once it has been cut.

Another grower plants into legume residue, so there is no need to chain the paddock or harvest low, as the flat steel roller takes care of any remaining cereal or legume residue that may contaminate the new hay. He had trialled hay on the heavier soil types but the yields were generally lower, and even more so in a low growing season rainfall year. Because of the costs/ha in the hay operation, sowing on better soils where the yield is higher results in a lower cost/tonne.

Weed control

Barley grass is the number one weed in export hay production. It is not an option to grow export hay on a paddock that has moderate to high numbers of barley grass as there are no control options for barley grass in oats.

Medic control can also be difficult as Lontrel is not permitted on hay and dicamba can have a large effect on crop biomass. There are very few pre-emergent chemicals available for oats, so good grass weed control prior to growing oaten hay is essential. Broadleaved weeds can also be an issue, so it is important to ensure that weed pressure is low. Many growers have used Amine + Dicamba mixes to control broadleaved weeds.

Weedmaster DST can be used to desiccate the oats and grasses before the cutters come in. It is the preferred weed control option. Metolachlor pre-emergent is also used for some in crop grass weed suppression. At hay cutting, the cutters sever most of the barley

grass heads, and if the cut hay gets baled in a timely fashion, the grower had very good results for barley grass weed seed set spraying the paddock immediately after it is stacked.

The nature of hay cutting means at times there is limited notice prior to cutting, and therefore it is hard to spray the area then wait the full two day withholding period prior to cutting. Additionally, if the baling is extremely delayed, then pre-sprayed hay has been seen to go black up to a week earlier than hay that has not been sprayed prior to cutting. It is a trade-off between the timing risk, the baling risk and the risk of missing the weed control opportunity, which is the most important factor because this often affects future rotations.

Hay cutting

Most growers use contractors to cut and bale with the costs being cutting at \$50/ha (PTO disc cutters and macerator), raking at \$6-7/ha and baling around \$30/bale for a high density 700-850 kg bale.

Tele handler hire for stacking and loading is about \$110/hr, hay stacker contracted for \$150/hr and freight ranges from \$14-18/tonne into the Kimba shed, depending on location. Once it is in the Kimba hay shed the hay belongs to the hay exporter as long as the hay quality tests are passed, and the price takes storage into account. It has been suggested by one grower that if the farmer stores the hay on farm for an exporter, they should be paid \$20/t.

The export hay is contracted and cores of a representative sample of the paddock is taken whilst baling is occurring, before stacking and transporting. The results of testing determines the final pay grade.

Hay quality

Hay quality was downgraded in 2016 due to significant rain events following cutting, resulting in the hay being the lowest export category 6A. Despite meeting adequate feed quality, it did not meet export colour requirements, and as there was an oversupply of hay at the time, the hay was near worthless (\$80/t). Storage was an issue as it needed to come out of the Kimba shed ready for the following season, so it had to be sold immediately. In some seasons the high yields and subsequent volume of hay cut can also lead to storage issues.

One grower stated the dry springs in 2017 and 2018 resulted in good quality hay. In 2017 we had perfect conditions and the hay was baled in a timely manner, and easily met the required specifications. In 2018 the baling was delayed, and possibly the quality wasn't as good as 2017, however it still met specs and received good prices, although during this period far better returns were achievable if it was sold on the domestic market rather than the export market.

If hay does not make export quality there have been opportunities, particularly in the last two seasons, to sell the hay into the domestic market, often at a premium to the contracted export price. In 2016 it was difficult to move the hay that had been downgraded due to the large volume of poor quality hay on the market, but the 2017

drought meant demand quickly developed. Some of the hay was also utilised on farms that have livestock.

The timing of hay operations generally fits well into the seasonal timetable for the growers surveyed, except that waiting for contractors is an issue. One grower has clashes between hay operations and shearing, and others find it can run into the harvest period which is very difficult to manage logistically, and results in competition for trucks between carting hay and grain.

Farmer conclusions

Growers stated that export hay is a great tool to combat grass weeds, especially ryegrass, in the rotation and for achieving a two year grass weed break. It is also a strong performer in seasons with an early start and good winter rainfall to enable maximum biomass, but is also a strong performer given tough spring conditions like frosts, low rainfall or high temperatures.

Two growers commented that the operational costs with hay cutting are expensive and they may look to purchase their own hay equipment, however scale is needed to justify owning the hay equipment. There is also the issue of timing and other farm operations such as shearing. If the long term gross margins are satisfactory, then increasing the area to 250-500 ha/year is possible. There may also be merit in building

hay storage sheds on farm and exporting direct from the farm as the freight rate is significant. The parameters around which hay is classified seem very fluid as well as the pricing on forward contracting. For some of these growers, the jury is still out on the future of export hay in their system.

Another grower was concerned about the removal of nutrients from the paddocks. This needs to be quantified to show what nutrition is actually removed and the financial implications over the short and long term.

Overall gross margins have been very good. One grower said that 2016 was their first year of a three year trial in which they had done everything at full contract pricing to make sure that the enterprise stacked up in terms of business profitability and they are looking to expand the area that they use to grow export hay.

As part of this work an economic analysis of hay production at Kimba will also be undertaken for the BFIG farmers.

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