why grow oat hay?

chapter 1

credit Emma Leonard, AgriKnowHow

Growing oats for hay offers grain growers a combination of opportunity and risk reduction.

Many growers have introduced oat hay into the rotation as another option in the management of herbicide resistant weeds. However, oat hay can provide a profitable break crop that optimises the use of machinery and labour and introduces diversity into the timing of crop maturity and payment.

Of course, growing oat hay has a risk profile of its own, for example, capital and/or operating costs can be substantial. It is also essential to understand the market requirements. Before sowing oats for export hay, seek advice from your hay buyer about varieties and bale size.

There are differences in the agronomy of oats grown for grain and hay. The production of high quality oat hay for export requires planning. The application of agronomy that focuses on hay quality and market requirements can help minimise the risks associated with oat hay production.

This book offers guidelines on how to produce quality oat hay for the export and domestic markets.

Opportunities

Financial contribution

Oat hay production can produce a substantial gross margin and contribute to improved cash flow and total farm profit (Tables 1.1 and 1.2).

Labour and machinery resources

A hay making enterprise can provide on-going work at times when other farm enterprises may have low labour requirements, therefore allowing continuous employment.

Existing farm machinery such as tractors, loaders and trucks often can be used in the hay enterprise. The provision of contract hay making and transporting services and providing storage can add substantially to income.

Livestock enterprises

The production of hay can allow livestock enterprises to be sustained, particularly when green feed is not available.

Risk reduction

Markets and price

Hay markets and prices are largely independent of grain markets and prices. Good quality hay can reduce the risk of poor returns from cropping due to commodity prices or market restrictions. In addition, hay can be stored when market conditions are poor and sold when they improve. Oat hay has a well established market compared to the demand for hay from other cereals.

Seasonal risk for grain growers

Hay is cut before grains fill. By shortening the growing season, the potential for damage from the risk of excessive heat, low subsoil moisture levels or frost is reduced. This makes hay a lower risk than grain crops.

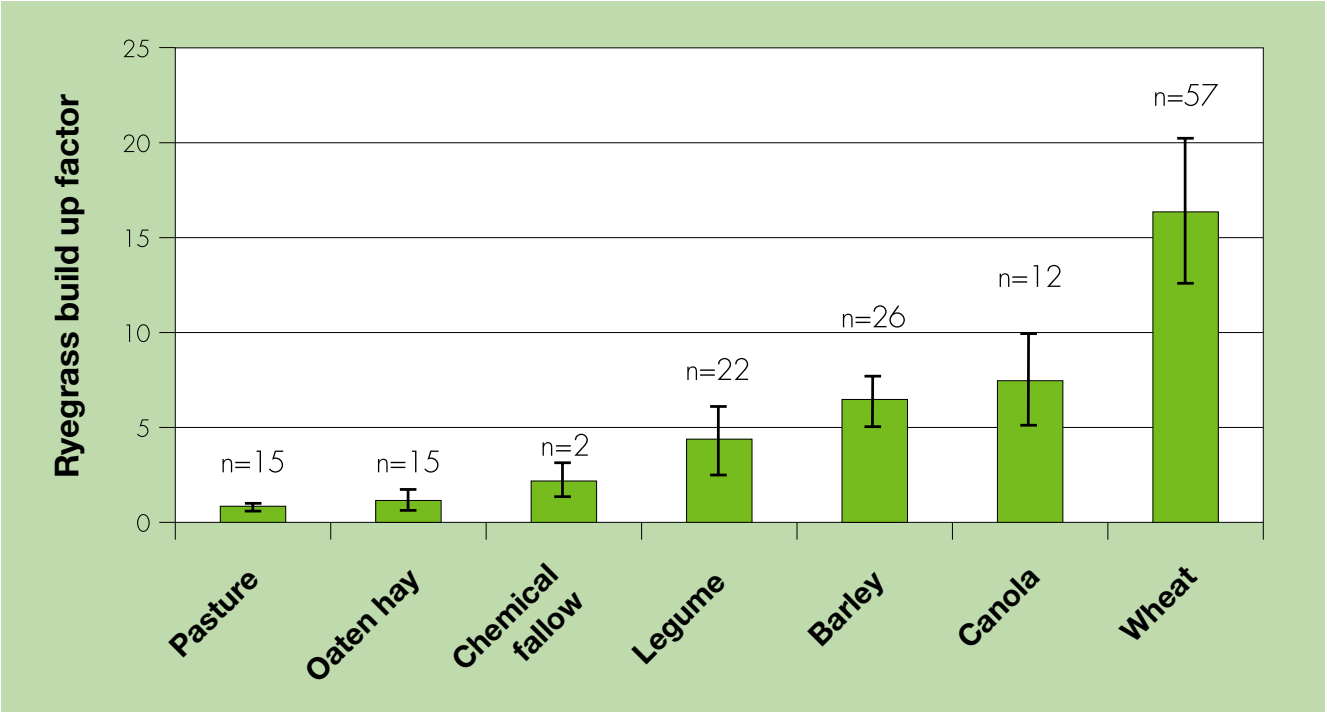

Figure 1.1 Annual changes in weed seedbank – *source Dr Gurjeet Gill, Adelaide University.*
A significant reduction in ryegrass seeds was recorded following an oat hay crop compared to cereal, oilseed and legume crops harvested at grain maturity. n= number of samples surveyed.

Soil moisture

The production of hay reduces the soil moisture loss normally associated with maturing grain crops. On suitable soil types, generally heavier soils, this moisture can be stored for subsequent crops, can support dry sowing and can lead to increased grain yields. For example, in a year with a dry spring, a crop of barley planted on oat hay stubble in Victoria yielded 1.5t/ha of Feed 1 barley. This compared to the same variety in an adjacent paddock but sown on a wheat stubble which produced 0.5t/ha of Feed 3.

Soil nutrients

Hay making removes significant amounts of nutrients from the soil, especially potassium (K), calcium (Ca) and magnesium (Mg) (see Tables 6.1a & b) but late season uptake of nutrients is reduced. On balance, hay can be less nutrient depleting than 1) harvesting grain and cutting straw, and 2) harvesting grain and burning stubble.

Weeds

Cutting hay can reduce weed seed set by desiccating later maturing weed species before viable seed is set. With care, viable weed seeds can be removed from paddocks in the baled hay. By depleting the weed seedbank, hay production is a particularly successful tool in an integrated approach to managing herbicide resistance (Figure 1.1).

Export hay requires a nil presence of toxic plants and prickly weeds such as doublegees. Most processors have a limit of 1% by weight of broadleaf plants and 5% of grass weeds including other cereals.

Annual Ryegrass Toxicity (ARGT)

The timely production of hay can reduce ARGT by removing ryegrass (and other hosts) prior to toxin formation. There is nil tolerance of ARGT in export hay and testing for ARGT bacterial contamination in export hay and straw is compulsory. If ARGT is an issue, it should be managed before sowing oats for export hay. See Chapter 7 – weed control.

Pest and disease

Hay production can offer a break crop opportunity, especially in continuous cropping systems. This may be due to the hay crop being a non host to a particular pest or disease or the hay making operation being destructive of the organism or its habitat. See Chapters 4 and 7.

Table 1.1 Gross margin in dollars per hectare for oat hay based on average production costs, at the time of publication, for the medium and high rainfall regions – *source Garren Knell Consulting and Landmark 2016.*

Income				**Add your figures here**
Yield	(t/ha)	600kg bales	5.5	
Quality	mixed grades			
Price	$/t		225	
Gross income	**($/ha)**		**1237.5**	
Expenditure		**Cost**	**$/ha**	
Seed	90kg/ha	$600/t	54	
Seed levies		variety dependent		
Fertiliser (on-farm)				
18:20:00	80kg/ha	$750/t	60	
Urea	75kg/ha	$570/t	43	
Potassium#	50-80kg/ha MOP		30	
Herbicides	pre-emergent	$7-17/L	30	
	post emergent	$10/L	25	
	spray topping regrowth	$6/L	12	
Insecticides	seed dressing and in-crop		5	
Fungicides	seed dressing and in-crop		18	
Operating costs at contract rates				
Seeding			50	
Spraying	pre-emergent		9	
	post emergent		9	
	spray topping regrowth		9	
Rolling			6	
Top dressing fertiliser			10	
Mowing and conditioning			50	
Raking/tedding			13.5	
Baling		$18/bale	165	
Handling		$7/bale	65.0	
Transport		10c/bale/km (100km)	137.5	
Storage*				
Insurance		$2.50/$1000	2.2	
Total expenditure			**803.2**	
Gross margin			**$434.30/ha**	

 # primarily required on lighter soil types

** see Chapter 9. Exporters pay a premium for hay stored in a shed*

Breakeven – either 3.5t/ha having accounted for reduced baling, handling and transport per hectare or $150/t.

Table 1.2 The impact of yield and price variance on income ($/hectare), price and yield in gross margin. Breakeven figures from Table 1.1 example are highlighted.

Yield t/ha	Price $/t										
	100	125	150	175	200	225	250	275	300	325	350
3.5	350	437.5	525	612.5	700	787.5	875	962.5	1050	1137.5	1225
4.5	450	562.5	675	787.5	900	1012.5	1125	1237.5	1350	1462.5	1575
5.5	550	687.5	825	962.5	1100	1237.5	1375	1512.5	1650	1787.5	1925
6.5	650	812.5	975	1137.5	1300	1462.5	1625	1787.5	1950	2112.5	2275
7.5	750	937.5	1125	1312.5	1500	1687.5	1875	2062.5	2250	2437.5	2625
8.5	850	1062.5	1275	1487.5	1700	1912.5	2125	2337.5	2550	2762.5	2975
9.5	950	1187.5	1425	1662.5	1900	2137.5	2375	2612.5	2850	3087.5	3325
10.5	1050	1312.5	1575	1837.5	2100	2362.5	2625	2887.5	3150	3412.5	3675

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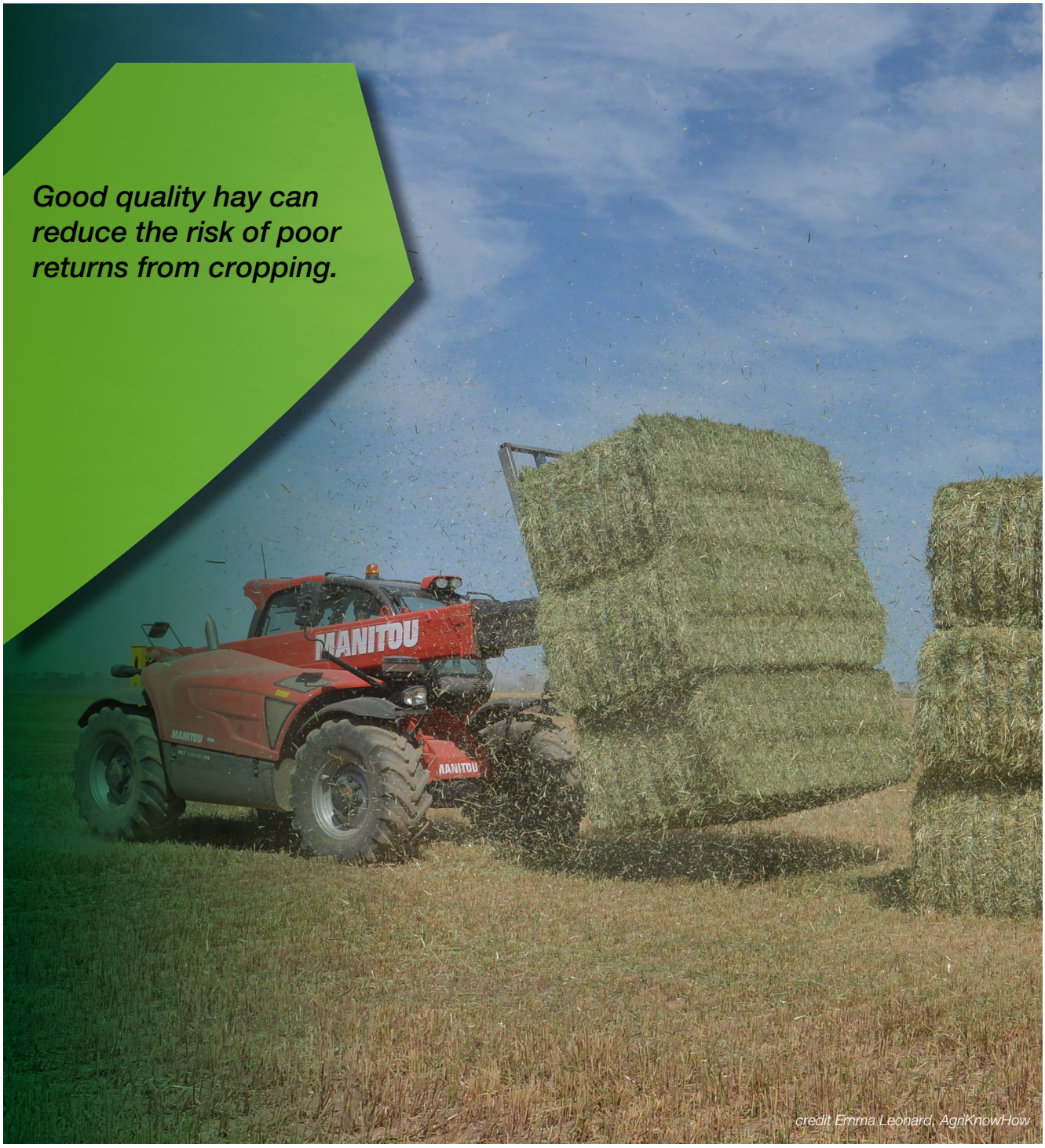

Good quality hay can reduce the risk of poor returns from cropping.

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