

Grain & Graze: Whole Farm Feed Supply – Grazing Days/Season/Pasture Type

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Aim

TO UNDERSTAND HOW A RANGE OF PASTURE TYPES COMBINE TO FORM A WHOLE FARM FEED SUPPLY.

Background

The aim of the Northern Agricultural Region (NAR) Grain and Graze project is to maximize farm profitability through the successful integration of perennials pastures into the whole year feed resource, complementing grain and annual pasture production. The NAR Grain and Graze project is a partnership between the Liebe Group, Evergreen Farming, Mingenew-Irwin Group, the Shire of Victoria Plains, the Department of Agriculture and Food (DAFWA) and Northern Agricultural Catchments Council (NACC).

The Liebe Group is located in the low to medium rainfall zone of the WA wheatbelt. In the past there has been limited trialing of perennials pastures in this area. However, perennial fodder shrubs such as Saltbush have proven to grow successfully on salt affected land. Due to the uncertain reliability of perennial pastures and the dominance of cropping enterprises in the Liebe region the project is locally focused on better matching total feed supply with livestock demand so as to better manage the whole farm feed resource.

One of the project objectives is to collect grazing records from 4 focus farms in order to determine an overview of the feed resources growers in this region currently have available and how these are being utilised. This information allows us to further focus the project on the feed resources that are providing the most value to the farm and identify where growers can potentially be better utilising these feed resources.

Key Findings from the 05/06 Season:

- 1) **Perennial grasses – Where do they fit?** The Liebe Region is a predominantly cropping area. Perennial pastures will most likely have a place in our system if they can be grown on small areas of unproductive cropping land or bordering salt affected areas. They can be difficult to establish in our rainfall zone and therefore once established cannot be cropped over if the stand is to be maintained. The most promising varieties for this area include Rhodes varieties, Bambatsi panic and Green panic.
- 2) **The value of fodder crops or grazing cereals:** The sowing of cereals for grazing proved to be a successful implementation for Farm 4 in the 2005 growing season. Many Liebe members have been frustrated with the lack of production that can be gained from annual legume pastures in this region in the past. Therefore many growers followed the lead of Farm 4 and sowed grain oats in 2006 either alone or as a bulk feed with an annual legume component. Generally the variety grown was Pallinup oats. They have good early vigour which provides feed when other pastures can be slow to establish but they can also provide good weed control. Growers are finding that the oats are less palatable than weeds, which force the livestock to selectively graze weeds.
- 3) **Saltbush success story:** Due to programs such as Sustainable Grazing of Saline Lands (SGSL) saltbush has been widely implemented in the Liebe region and is viewed in the area as the major success story for gaining production from unproductive salt affected land. Due to the cost of seedlings or a seeding operation, saltbush stands have been implemented on farms over a number of years. Saltbush is viewed by growers to be of most value during the summer and especially the autumn feed gap. Farm 2 uses saltbush areas as nursery paddocks for lambing. If the paddocks are kept small then the ewes do not have far to travel to water and there is plenty of shelter increasing the chance of survival of lambs.
- 4) **Matching feed supply and demand:** Locally, McGregor's have exhibited a good case for matching feed supply with demand. Through trading large numbers of stock they have been able to run significantly higher winter and spring stocking rates - generally twice those of what is being achieved by the other demonstration farms. This is due to a number of reasons; 1) The highly productive fodder crop and 2) Knowing that they do not have to conserve feed for summer they are able to push their pasture system for maximum grazing through winter and spring. The key to this system is to get stock

off the property before summer because if they stay longer there will be issues with feed availability and possible weight loss. It is also very beneficial to have a feedlot to be able to finish stock when required or if paddock conditions are not suitable, however this can be expensive. This type of system is possible through pastoral alliances or profit share agreements with the cattle destined for the live export trade. We are yet to see this system trialed with sheep in our area.

Case Study Farm 1:

Property	Keith, Rosemary and Boyd Carter
Location	East Wubin, Jibberding
Arable	6,000ha
Cropped	4,200ha
No. Breeding ewes	2,500
Flock Structure	Self replacing merino
Lambing	May
Ann. Rainfall	285mm

Table 1: Summary of grazing records for the period of June 2005 to May 2006.

Feed type	DSE/ha	Total DSE Grazing days	Area (ha)	% of total area	% of total grazing days
Volunteer Pasture	3.4	1,163,221	924	17	43
Volunteer Pasture with sub clover base	2.1	214,101	281	5	8
Cadiz, Charano	1.1	184,658	380	8	7
Cadiz 2nd yr	3.4	241,969	194	4	9
Crop Stubble	0.7	950,387	3,537	65	35
Perennials	2.1	23,966	31	1	1

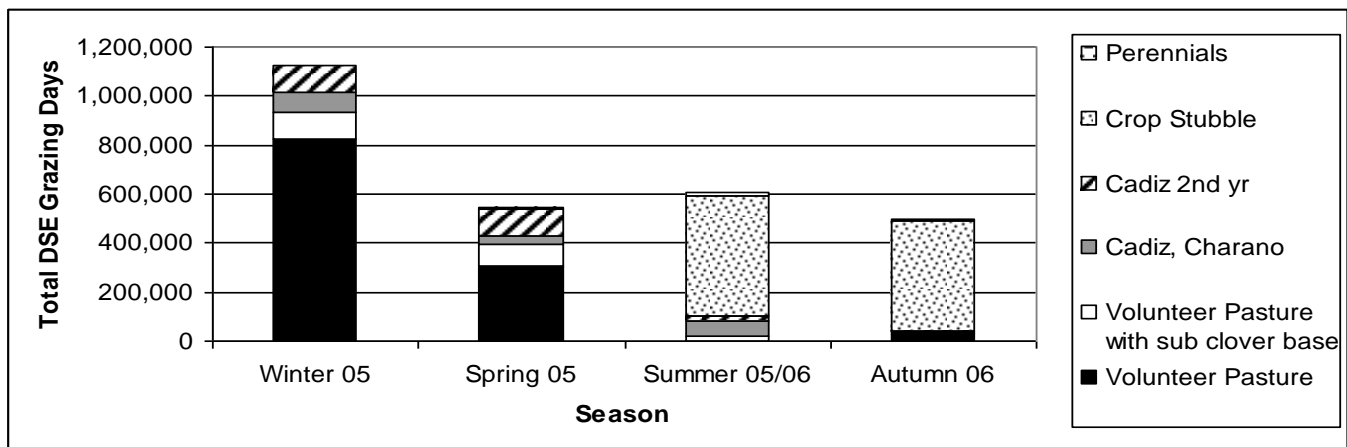


Figure 1: Total DSE grazing days per season per feed type from June 2005 to May 2006.

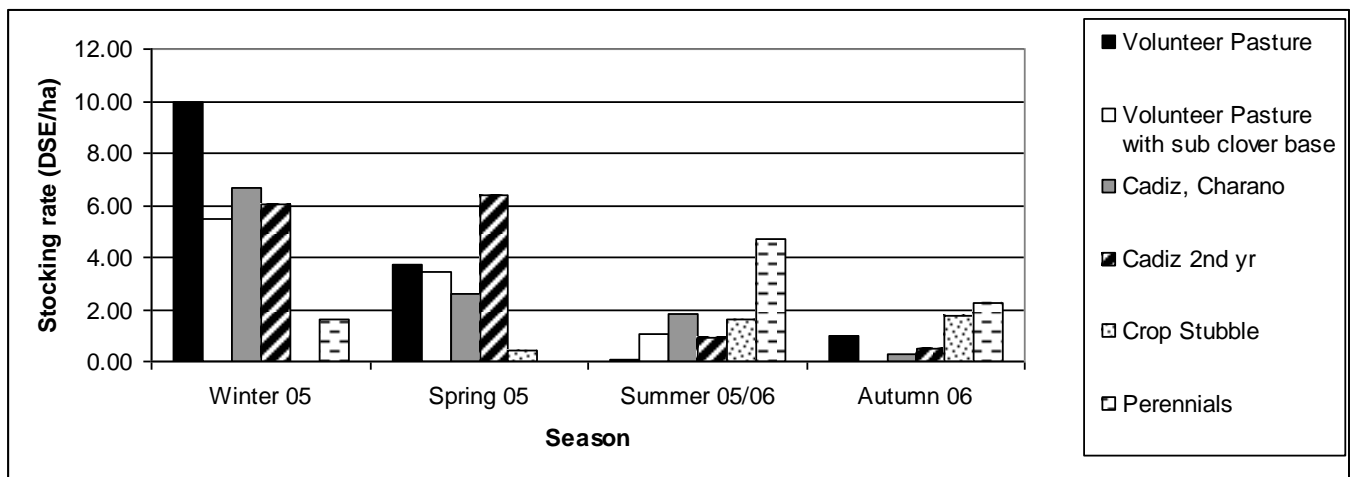


FIGURE 2: DSE/HA PER SEASON PER FEED TYPE FROM JUNE 2005 TO MAY 2006.

Comments

- Grazing pressure is greatest in winter, with volunteer pasture providing the majority of the value.
- The stocking rates used on the improved pastures are also relatively high.
- Perennial pastures provide a small percentage of total grazing value but when grazed in summer and autumn the stocking rates are the highest used for both the seasons.
- Crop stubbles provide the majority of the grazing value in summer and autumn however they are grazed at very low stocking rates.

Case Study Farm 2:

Property	Gary, Kerry and James Butcher
Location	East Pithara
Arable	2,800ha
Cropped	2,200ha
No. Breeding ewes	1,300
Flock Structure	Self replacing merino
Lambing	June
Ann Rainfall	300mm

Table 2: Summary of grazing records for the period of June 2005 to May 2006.

Feed type	DSE/ha	Total DSE Grazing days	Area (ha)	% of total area	% of total grazing days
Vol Pasture	4.1	339,480	226	9	31
Caliph medic	1.4	81,693	158	6	8
Cadiz & Oats	2.5	248,489	267	10	23
Oats	1.0	82,804	231	9	8
Crop Stubbles	0.3	211,666	1,907	65	19
Saltbush	0.8	2,304	8	0	0
Saltbush & Perennials	0.5	4,064	22	1	0

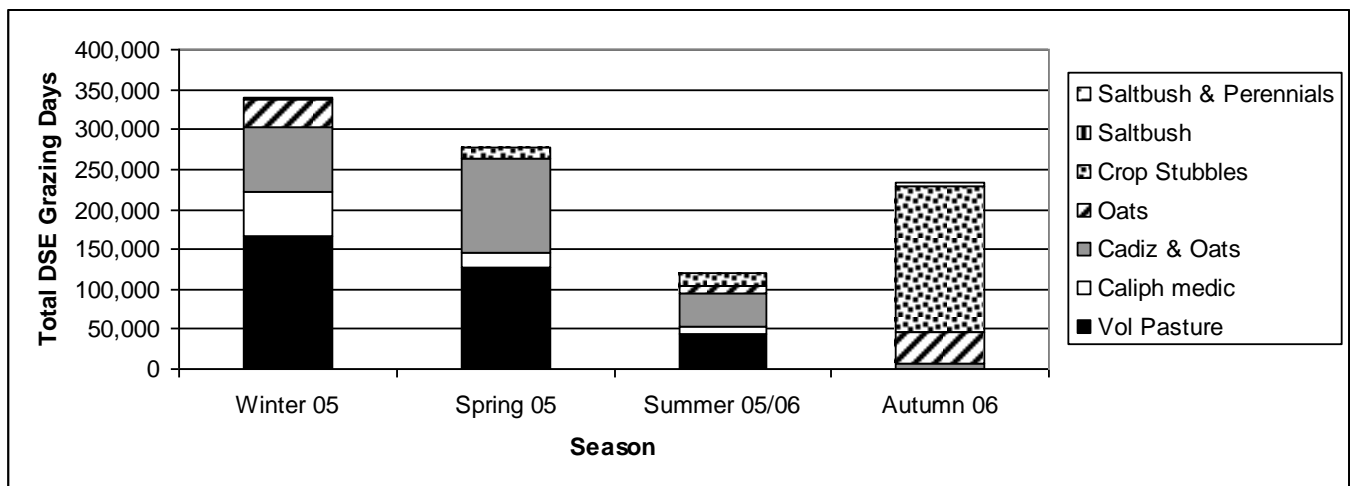


Figure 3: Total DSE grazing days per season per feed type from June 2005 to May 2006.

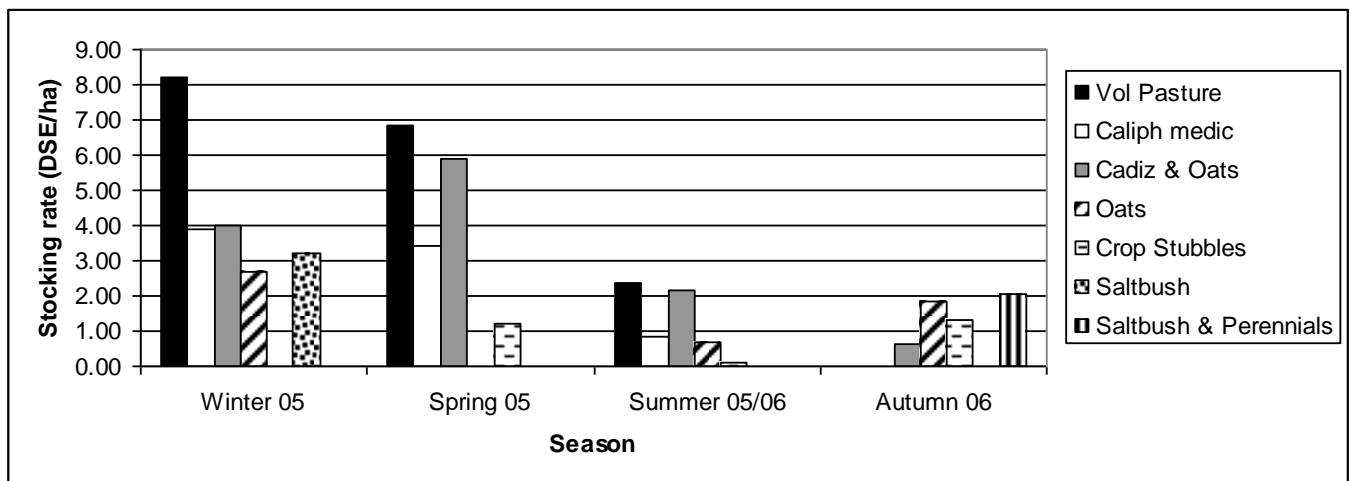


FIGURE 4: DSE/HA PER SEASON PER FEED TYPE FROM JUNE 2005 TO MAY 2006.

Comments

- Grazing pressure is greatest in winter, followed by spring and autumn. The Grazing pressure is lowest in summer, as expected.
- Volunteer pasture and a cadiz and oats mix provide the majority of the feed value in winter and spring. The stocking rates for winter are greatest for the volunteer pasture and in spring they are approximately the same for volunteer pasture and the cadiz/oats mix.
- The majority of value for autumn grazing is attributed to crop stubbles however these are grazed at a very low stocking rate. Saltbush and perennials are grazed at the highest stocking rate over autumn.
- The saltbush and perennials area is used for a sheltered lambing environment in autumn.
- The remains of the volunteer pasture and improved legume pastures are utilised in summer grazing however stock numbers are reduced significantly over summer.

Case Study Farm 3:

Property	Ross and Lyn Fitzsimons
Location	East Buntine (main property) + 1,100 ha west Buntine
Arable	4,800ha
Cropped	2,200ha
No. Breeding ewes	1,600
Flock Structure	Self replacing merino
Lambing	Late April/early May
Ann. Rainfall	325mm

Table 3: Summary of grazing records for the period of June 2005 to May 2006.

Feed type	DSE/ha	Total DSE Grazing days	Area (ha)	% of total area	% of total grazing days
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Volunteer Pasture	1.4	941,844	1,823	43	65
Crop Stubble	0.6	505,236	2,372	57	35

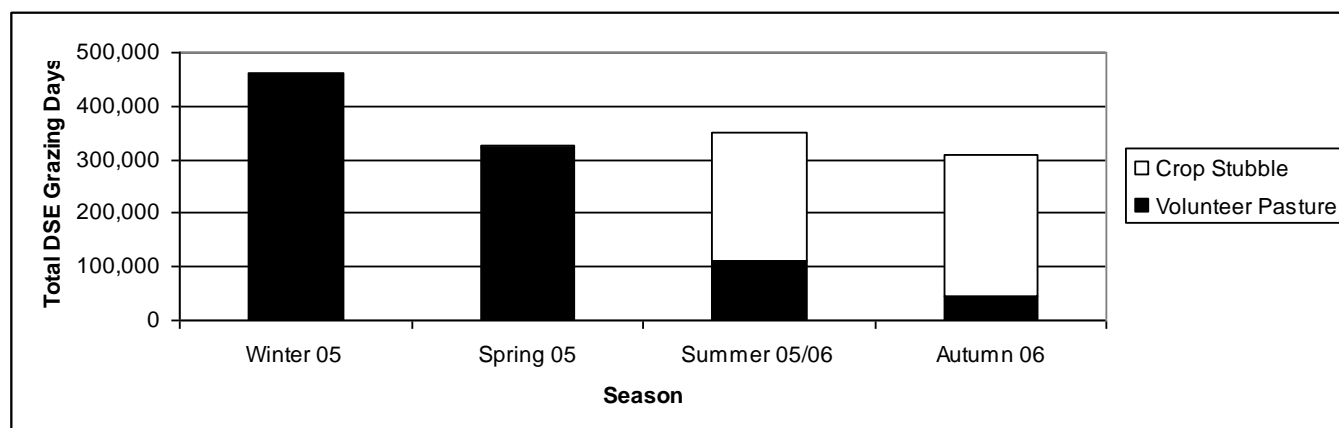


Figure 5: Total DSE grazing days per season per feed type from June 2005 to May 2006.

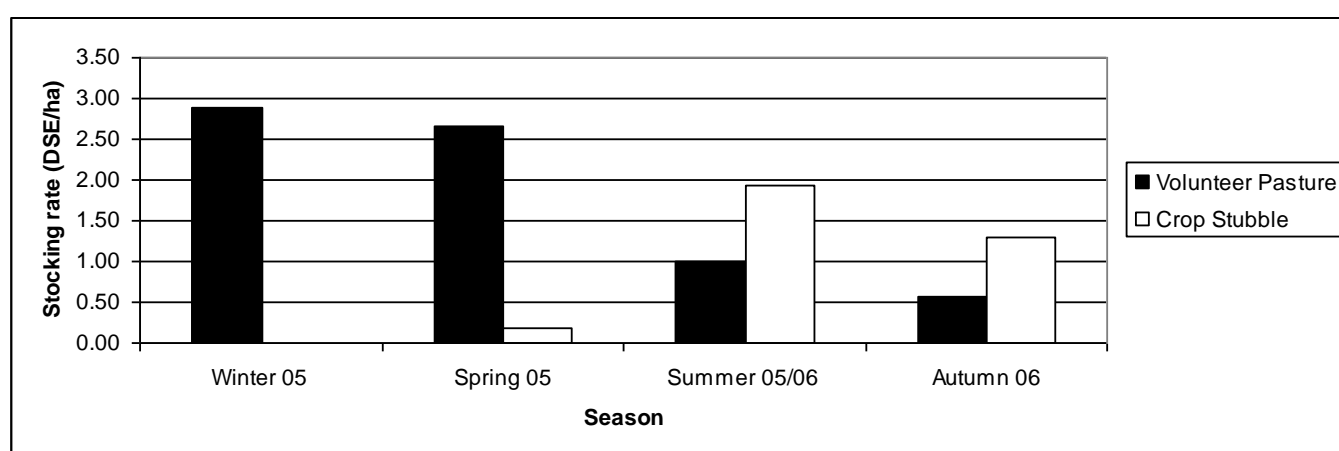


FIGURE 6: DSE/HA PER SEASON PER FEED TYPE FROM JUNE 2005 TO MAY 2006.

Comments

- Grazing pressure is greatest in winter and is reduced in spring, summer and autumn.
- Volunteer pasture provides all the feed in winter and the majority in spring.
- Crop stubbles provide the majority of the feed in summer and autumn.
- Both the crop stubbles and remaining volunteer pasture are grazed at low stocking rates through summer and autumn.

Case Study Farm 4:

Property	Colin and Jill McGregor
Location	East Maya
Arable	2,100ha
Cropped	400ha
Fodder crop ha	1,400
No. Breeding cows	300 Droughtmaster
Backgrounding cattle	5,700 heifers and mickey bulls (mixed breeds)
Calving	April/May
Ann. Rainfall	325mm

Table 4: Summary of grazing records for the period of June 2005 to May 2006.

Feed type	DSE/ha	Total DSE Grazing days	Area (ha)	% of total area	% of total grazing days
Crop Stubbles	3	467,260	411	19	8

Volunteer Pasture	7	996,807	383	18	18
Fodder Crop	9	4,171,067	1,318	62	74

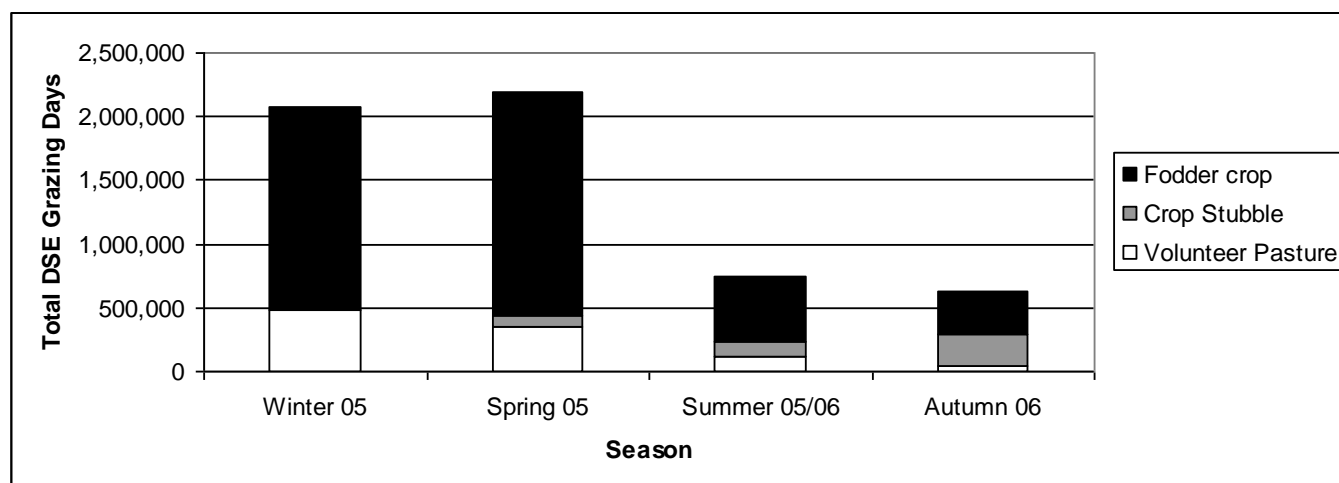


Figure 7: Total DSE grazing days per season per feed type from June 2005 to May 2006.

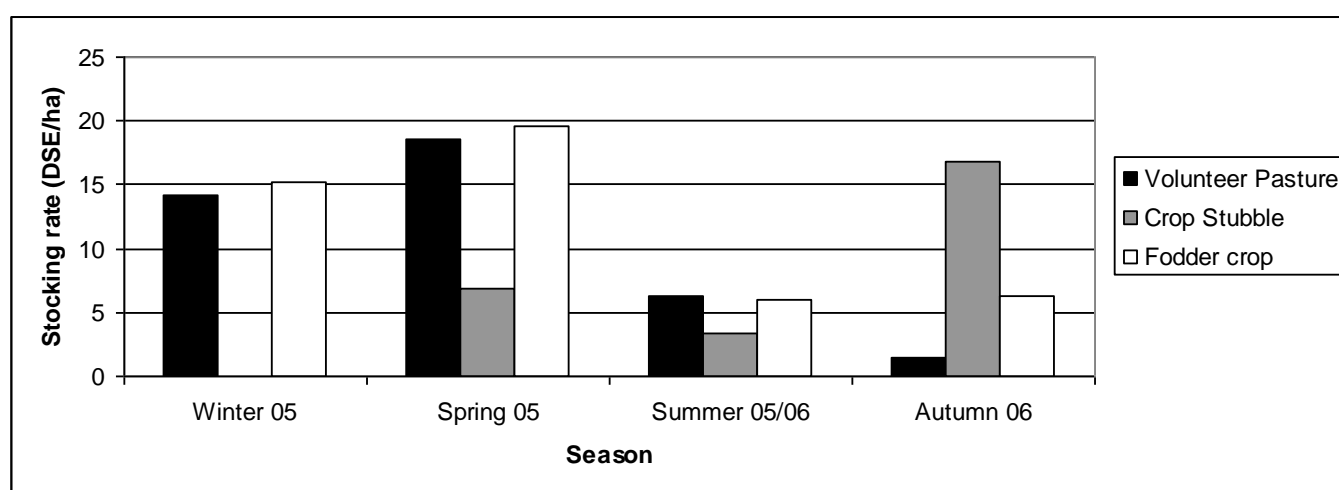


Figure 8: DSE/ha per season per feed type from June 2005 to May 2006.

Comments

- Cattle are brought onto the property from stations from June to September at an average weight of about 140 kg/ha and then leave from mid-October to mid-February at approximately 300 kg/ha.
- This enables the grower to utilise feed when it is at its peak growth and to de-stock when there is little feed in summer and autumn.
- The grower sows a relatively low cost fodder crop for feed which is either grazed standing, cut for hay or harvested for grain. If the cattle are not of the desired weight to leave the property they are finished in a feedlot where they are fed hay and the harvested grain mix
- Figures 7 and 8 show that this system allows the grower to run an exceptionally high number of stock at high stocking rates through winter and spring

Acknowledgements

- The NAR Grain and Graze project is funded by Meat and Livestock Australia, Australian Wool Innovation Ltd, Grains Research and Development Corporation, Land & Water Australia and locally supported by the Northern Agricultural Catchments Council and the Department of Agriculture and Food.

PAPER REVIEWED BY: PHIL BARRETT-LENNARD