

Developing a fodder shed

Background

A fodder shed is an innovative hydroponic fodder production system that has the capacity to produce green feed all year round.

In the Mallee a feed gap typically exists from late spring through to autumn. This can lead to difficulties in maintaining livestock and land condition.

A fodder shed can help fill this feed gap by growing a continual supply of fresh green fodder when it is not available in the paddock.

The method

Braden Kramer, a farmer from Parrakie, built the fodder shed after seeking advice from a landholder on Kangaroo Island on design and construction.

A 30m long by 5m wide fodder shed was constructed from detailed plans. It was built wide enough so that a vehicle could be driven down the middle.

Iron was cut to make three levels of trays running the 30m width of the construction. Ten bays on each side made 20 bays in total.

Shade cloth was used for the roof.

Hall Irrigation, based in Lameroo, provided advice and products to build the irrigation system for the trays. The biggest challenge was to develop a sprinkler system that would evenly irrigate all of the trays.

Grain was soaked for 12 hours overnight and then spread on trays. The trays were watered automatically for 1 minute every 2 hours over an 8-hour period. The irrigation system was set up with a fine mist spray.



Left - Construction of one bay of trays and (right) a view of the fodder shed with the shade cloth roof.

The results

An optimal rate of 1kg soaked barley seed was used per tray. Barley is commonly used in fodder sheds because of the fast growing nature of the plant. Germination had started after 2 days.

In seven days 1kg of barley seed was able to produce 6kg of fodder, at which point the trays were emptied and the process was repeated in the empty bays.

During fodder production a week of humid weather with no wind was experienced and caused mould to form in the grain. To prevent this happening again bays were all treated with chlorine as common practice prior to use.

Fodder production was staggered and at full production the fodder shed was able to turn out 120 biscuits per day

Fodder production appeared to be very much temperature dependent over light dependent. Best results were achieved in warmer growing conditions and this was evident with better production on the inner rows of trays. The inner rows were warmer than the top rows where heat was able to escape.

Once day temperatures dropped below 20 degrees Celsius, production turn around was also affected and took longer than 7 days to produce the same amount of feed that can be produced in optimal temperature conditions.

Slow fodder growth affects the economic viability of fodder production and has revealed the warmer months are the best time to economically produce green fodder.

The biscuits were feed to 65 cows and calves over summer as a supplement to straw. Even though green fodder should only be fed as a supplement and not as a stand-alone feed, a noticeable positive difference was observed in the health of the cattle.



Soaking grain





Day 4 of fodder production



(Left) - a trailer load of biscuits ready to be fed to cattle, (right) – Cattle eating biscuits of green fodder in the paddock.

Recommendations

More work is required to determine the feed benefits and cost benefit analysis of green fodder over summer, however observations suggest a positive health benefit for livestock.

It is important to do your homework when designing a fodder shed. It is recommended that any one considering a fodder shed speak to others with experience for advice on construction and irrigation design.

Conclusion

The design of the fodder shed at Parrakie worked well and has successfully produced green feed for livestock over summer. Whilst supplementary feeding is still required, cattle have responded well to the flush of green feed and maintained condition over the summer months.

Braden will continue to use the fodder shed and will begin fodder production when pastures start to disappear in late spring.

Acknowledgments

This project was supported through funding from the Australian Government’s National Landcare Programme and the South Australian

Murray-Darling Basin Natural Resources Management Board.

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