

USA lucerne study tour

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This study tour examined lucerne and forage production in the USA. A travel grant from the Grassland Society of NSW enabled me to attend the North American Alfalfa Improvement Conference (NAAIC) in Madison, Wisconsin. The trip also included the Australian Fodder Industry Association's Forage Study Tour and visits to the Universities of California (Davis) and Wisconsin (Madison).

Observations

- Lucerne hay is the main protein source in feedlot rations for the US dairy and beef industries. Quality is the major focus and feed testing plays an integral role. Hay is cut at the mid to late bud stage (earlier than Australia) to ensure maximum protein and digestibility. Moisture testing is a routine procedure both before and after baling. Timeliness is critical to achieve good quality, so there is no shortage of haymaking equipment. Large or medium square bales are preferred where hay is transported. Bale handling and stacking attachments for balers, tractors or trucks are utilised.
- Lucerne silage and greenchop are also important to utilise poorer quality or weedy forage, or where weather conditions are unfavourable for haymaking.
- Grazing accounts for only 10% of the USA's lucerne, but interest is growing in the Midwest to reduce production costs. Grazing management was a major topic at the NAAIC, however Australia's experience was not recognised.
- Plant breeding uses mainly conventional techniques (crossing and selection) to increase yield, pest and disease resistance, winter-hardiness, persistence and quality. There are currently 280 certified varieties. Dormancies range from extremely dormant (1) to highly winter active (11). Three to four cuts per year are possible in northern California, with up to 10 cuts (31 t/ha) in the desert areas of the south.
- Biotechnology is being used to speed up the breeding progress and to breed for new characters such as leaf retention and improved digestibility. Roundup Ready (herbicide resistant) lucerne will be commercially available in 2004.
- Alternative uses for lucerne are being developed. Food additives (carotenoids, protein concentrates, antioxidants, enzymes) can be made from the juice fraction, while the fibre fraction can be used for cattle feed, filter mats, building materials, textiles or biodegradable plastics. Lucerne can also be used as fuel, or as a bio-remediation system to remove leached nitrates and pollution spills. None of these alternatives are currently economically viable.
- The Internet is widely used to disseminate agronomic information. There are some extremely useful extension and grower networks, agronomic websites and interactive CD ROMS, and many farmers access information through this medium. Current work is investigating the potential for interactive television.

Problems facing US lucerne producers

- Agronomic problems eg. insects, diseases, soil salinity and acidity
- Increasing production costs and lack of alternative crops
- Increasing urbanisation (less land, increased costs)
- Increased environmental pressures to limit farming
- A wealth of regulations (eg. marketing enforcement, water quantity and quality, air quality, food safety, pesticides)

Summary

Lucerne is the most important forage crop in the USA – the backbone of the huge dairy and beef feedlot industries. Australian lucerne producers should put more emphasis on feed quality, to improve their efficiency and profitability, but feed testing standards, such as those being developed by AFIA, are needed to



make it worthwhile. New opportunities for export and value adding lucerne hay should be sought out. Grower organisations and networks, such as the Grassland Society and AFIA, could be used more to improve the information flow within and raise the profile of the forage industry. There are many opportunities for improving agricultural extension technology via the Internet. We also need to be aware of production limitations such as insects and diseases not yet in Australia and ensure that quarantine restrictions are enforced to maintain a healthy industry and retain any marketing advantages.

(A full report on the study tour is available from the author upon request.)

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