



Water Usage at Australian Feedlots

Water is both the most important nutrient for cattle and the most valuable natural resource (after land) in Australia. Hence, it is of critical importance to lot feeders. There is a perception in the popular press that red meat production requires large quantities of fresh water. For example, it is often stated that it takes 50,000 L of water to produce 1 kg of beef. However, in Australia, there are few facts to back up these claims.

Little work has been undertaken to evaluate total water consumption by feedlots. The amount of drinking water used at feedlots has been studied in North America in the 1980's. To date, only a limited amount of research into drinking water requirements has been undertaken in Australia.

Factual information on the quantity of volume of clean water used at Australian cattle feedlots under a range of climatic, size and management conditions was obtained as part of a recently completed MLA project (FLOT.328 – Environmentally sustainable Assessment of the Australian Feedlot Industry).

Factual information data on clean water use was obtained via a detailed on-line survey of feedlot inputs and outputs including cattle numbers, intake and sale weights, dressing percentages. Annual water usage was estimated on the basis of one kilogram of dressed hot standard carcass weight gain (kg HSCW gain).

Results show that total annual water use ranged from 34 L/kg hot standard carcass weight (HSCW) gain to 89 L/

kg HSCW gain for the 2002 survey year, and ranged from 37-90L/kg HSCW gain in the 2004 year.

Variation between feedlots may be explained by management operations including frequency of trough cleaning, cattle washing, dust control and feed processing. The main influence on the total annual water use is the quantity of water used for dilution of effluent for irrigation. In feedlots with a capacity or need for using clean water for irrigation, a substantial increase in annual water use per kg/ HSCW gain was found/. In this case, annual water use ranged from 38 to 381 L/kg HSCW for the 2002 and 2004 survey year, respectively.



While the data collected is not sufficient to evaluate different water uses and improve water-use management and efficiency, it will allow the feedlot industry to develop a better understanding of the total annual water usage relativity and contributions that various feedlot sector operations have on annual clean water usage. This information is invaluable for future design and management considerations.

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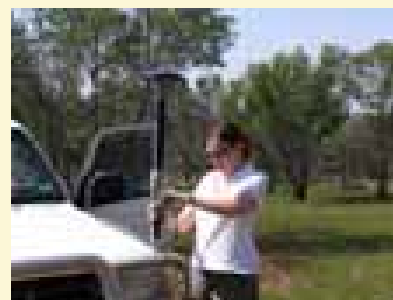
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Farm Mapping

FSA Consulting has highly accurate GPS equipment that allows us to undertake detailed farm mapping. This includes

- property boundaries
- irrigation layouts
- farm infrastructure and detailed contours.

For further information or a quote contact Nathan, Simon or Ainsley in our Toowoomba office.



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Off To Africa



South Africa has a significant lot feeding industry with about 420,00 head on feed producing about 75% of all beef in the country. Unlike Australia, they feed almost exclusively for the domestic market with, by Australian standards, quite small cattle at turn-off. Also unlike Australia, they feed very little sorghum or barley. Most rations are based on processed corn – hominy.

However, like Australia, feedlots can lead to environmental problems. Environmental agencies are now taking a closer look at feedlots in South Africa and regulations are getting tougher. New feedlot guidelines are being prepared. With this in mind, the South Africa Feedlot Association (SAFA - www.safeedlot.co.za) decided to address environmental issues at their annual conference.

Dr Peter Watts from FSA Consulting was invited to deliver a keynote address at the SAFA Conference. Drawing on 15 years of research and consulting in feedlot environmental issues, Peter explained the similarities and differences between Australia and South Africa. Australian research was also discussed.

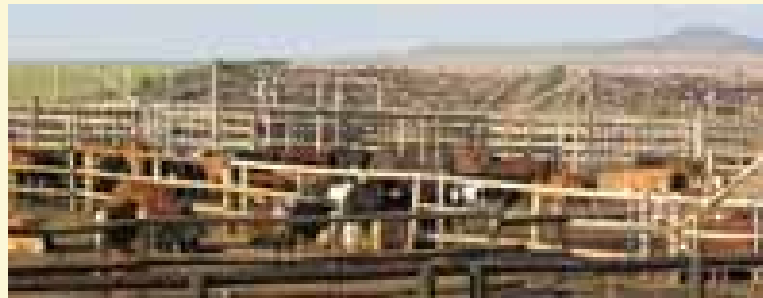


Peter was also able to visit a number of feedlots in South Africa and Botswana and to provide some consulting services for special issues. Mr Lou van Reenen from Sparta Beef asked Peter to meet with environmental regulators from the Free State to explain what can be



achieved with best practice environmental performance. FSA Consulting has since provided pen layout plans for an 8000 head expansion at Sparta.

Peter also was engaged to visit Botswana to assist Jan de Jager in the



design of a new feedlot there. Botswana is looking at new opportunities to export beef to the EU and to achieve this, they need more pen capacity. With the prospect of a trip to the edge of the Kalahari Desert, Peter was keen to assist.

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Consulting is
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Recycled Organics

FSA Consulting has been engaged by Condamine Alliance to help improve the sustainable management practices for recycled organic reuse in the Condamine Catchment. This project follows on from the successful 'Enhancing Markets for Recycled Organics' project, which was undertaken last year.

The project will be delivered through four main focus points to facilitate sustainability and a change in on ground practices including -

- Development of extension material based on current recommended practice and delivery of on-farm workshops for sustainable management practices for recycled organic reuse for end-use farmers.
- Development of extension material based on current recommended practice and delivery of workshops for sustainable management practices for recycled organic reuse for intensive industries.
- Demonstrate alternative methods for effluent utilisation for piggery and abattoir industries.

Facilitate the implementation of an incentives program for on-ground changes or improvements to current recycled organic reuse practices. This may include monitoring equipment, irrigation infrastructure or solids handling/spreading equipment.

The project will be completed by 30 September 2007.

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Guidelines Developed for Piggery Bedding Management

FSA Consulting has recently completed a project for Australian Pork Limited on the management of piggery spent bedding. The project included the development of best practice guidelines for spent bedding management. The project was a jointly conducted with the Department and Primary Industries and Fisheries intensive livestock environmental research group in Toowoomba.

The project included:

- A review of current industry practices - presented as a series of case study findings and literature review.
- Collection and analysis of spent bedding samples from a range of farms to determine chemical characteristics.
- Completion of an incubation trial to assess the nutrient availability of spent bedding and composted spent bedding relative to commercial inorganic fertilisers and a greenhouse pot trial was undertaken to compare the influence on plant yield of fertilising with inorganic fertilisers, spent bedding or composted spent bedding.



Compost turning at the Victorian site

- Evaluation of alternative bedding management methods through published information and on-farm trials. On-farm trials compared three management methods – stockpiling, partial composting and full composting. Trial site 1 (located in south-east Queensland) used straw-based spent bedding while trial site 2 (located in western Victoria) used rice hull based spent bedding. Odour emissions were determined from on-farm trials.

Development of guidelines for the management and application of spent bedding, including an analysis of costs and benefits of different management and technical and practical information regarding selection of site, materials and machinery and site preparation required.



FSA Consulting engineer Nathan Heinrich collecting odour samples from a deep bedding window.

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FSA Consulting Wins Three Piggery R & D Contracts

APL has recently awarded FSA Consulting research and development contracts for the following projects:

- Review National Environmental Guidelines for Piggeries
- Assessment of Nutrient Balance Calculators
- Odour emissions from composting of piggery manure and mortalities and best practice guidelines.

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Integrated Info Systems for Irrigation Water Management



FSA Consulting is in the final stages of research to develop an Integrated Information System for Irrigation Water Management in South-East Queensland (the IISIWM). The project involved extensive consultation with a variety of stakeholders involved in irrigation across SEQ in order to determine their information needs for improving rural water use efficiency. The research, which was conducted in conjunction with Agtrix consultants and the NCEA, will be the basis for establishing an information system in the region that will address five main information needs identified during consultation, including; general irrigation extension information, a database for collecting irrigation system audits and benchmarking data, basic mapping information for Land and Water Management Plans, and regional water and land usage statistics. The project identified

the need for a system that would capture data across industries and provide a central information hub where industry members and farmers can access valuable, reviewed information relevant to their situation. The project is endorsed by the South-East Queensland Irrigation Futures and funded by NRM&W

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Staff Profile

Daniella May is the FSA Consulting receptionist. She commenced work in February this year working part time in our Toowoomba Office. She works two days per week and performs numerous tasks including filing, mailing, telephone communications and helping out with anything that might need doing.

Daniella has worked in administration for 6 years before stopping to raise a family. She holds a certificate in Office Administration and enjoys working with people.

In her spare time Daniella enjoys camping, spending time with family and friends, cooking, water skiing, shopping and four-wheel driving with her husband.



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Delivering the EMS Message to Egg Producers Around Australia

Throughout June, July and August Eugene McGahan presented a series of workshops around the country for the Australian Egg Corporation Limited (AECL) to more than 100 egg producers and industry auditors.

The workshop was titled Environmental Principles for the Egg Industry. The workshops were developed with the support of Australian Government funding through the Natural Heritage Trust "Pathways to Environmental Management Systems (EMS) Program" and were designed to:

assess the potential environmental threats of their enterprise

implement measures to minimise the risk of adverse environmental threats from their enterprise

continually improve the environmental performance of their enterprise.

In addition, the workshops provided the skills for members of the industry to:

follow environmental workplace practices by improving their knowledge of environmental issues

recognise and report on potential environmental threats.

contribute to improved environmental work practices

maintain environmental records

demonstrate that they are able to meet the competency - RTC27802A – Observe Environmental Work Practices under the Australian Vocational, Education and Training (VET) system.

AECL recognises the increasing government demand and public awareness with regard to environmental issues and the importance of the egg industry remaining abreast of these to ensure long term viability.



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