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Improving dairy farm performance

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Western Australian dairy farmers produce more milk per cow and per farm than their eastern States counterparts and the milk is also of higher quality. But there is always room for improvement and as grain prices rise it is crucial that maximum benefit is derived from the cheapest feed source – the pasture. With this in mind, Ruth Dilley looks at the Dairy Farm Performance Program – a comprehensive farm database developed by Agriculture Western Australia.

The Dairy Farm Performance Program is being used in the ‘Profit from Pastures’ project, funded by Agriculture Western Australia and the Dairy Research and Development Corporation (DRDC). Pasture utilisation is one of the items determined by the program and improvements in pasture utilisation resulting from research and extension by Agriculture Western Australia are being monitored.

The physical and financial information provided enables farmers to identify the strengths and weaknesses of their business and provides them with a tool to monitor their farm's progress from one year to the next.

Information provided by the program includes:

Physical information
- stocking rates expressed in lactating cows per hectare;
- milk, milk fat and milk protein;
- grain, hay and silage fed to the milking herd and other dairy animals;
- fertiliser applied to the dairy area;
- amount of water per hectare applied to both permanent and early germinated pasture for irrigated farms;
- percentage of energy fed to the dairy animals which is brought in from off farm;
- pasture utilisation which is presented as the amount of pasture grazed and the amount conserved as hay or silage.

Financial information
- milk income per cow, hectare and litre;
- dairy meat income;
- variable and overhead costs of production per cow, hectare and litre;
- gross margin which is the milk and dairy meat income minus the variable costs;
- cash operating surplus;
- return on capital of their dairy enterprise.

Results from Dairy Farm Performance Program
The Dairy Farm Performance Program has been available to dairy producers for three years. Information collected has provided an insight into where the industry was at the start of the project. DRDC will continue to support data collection in 1995/96 and 1996/97, the final two years of the project to help assess the effectiveness of the ‘Profit From Pastures’ project.

In 1992/93, 85 dairy producers used the program and in 1993/94, 92 farmers participated. These farms are located from Armadale through to Albany and comprise both dryland and irrigated farms. Many farmers are now using the Dairy Farm Performance Program on a yearly basis as an important part of their farm management program.

Pasture growth and utilisation was measured for two years on seven dairy farms. Annual pastures yield
between 7 and 11 tonnes of dry matter per hectare and irrigated perennial pastures yield between 17 and 25 tonnes of dry matter per hectare depending on pasture composition and management. Results from the Dairy Farm Performance Program have shown that, on average less than 4 tonnes of this pasture is being used. This means that there is enormous potential for farmers to increase pasture utilisation.

On average, irrigated farms are only utilising about 1 tonne of dry matter per hectare more than the dryland farms. Dryland farms are feeding 1.6 tonne of grain per calver per year and irrigated farms are feeding 1.2 tonnes per year. Therefore many irrigated farms are not getting a significant return from the extra costs involved in having irrigated pasture.

Analysis of the database has shown that on average, each increase of 1 tonne per hectare of utilised pasture resulted in an increase in gross margin of about $150 per hectare. Therefore for an average farm of 150 hectares, an increase in utilised pasture of 1 tonne of dry matter per hectare would give an increase in farm gross margin of $22,500 (see figure).

Farmers are increasing utilisation by adopting one or more of the following strategies:
- increasing stocking rate;
- conserving more hay or silage;
- feeding less grain.

Data collected through the Dairy Farm Performance Program has revealed that in 1993/94 pasture utilisation increased by 0.3 tonnes of dry matter per hectare compared with 1992/93. This increase in pasture utilisation can be partly attributed to an increase in cattle numbers on the dairy area. In 1993/94, the average stocking rate was 0.9 lactating cow equivalent (LCE) per hectare, 0.1 LCE higher than the previous year. Although stocking rates have increased, fertiliser rates have not significantly increased.

The increase in pasture utilisation was a result of an increase in the amount of pasture that was conserved as hay and silage, rather than what was grazed by the animals. This may be attributed to the late break to the season experienced in 1994 which resulted in a shorter grazing season. A good spring enabled farmers to conserve a large amount of hay and silage that was carried over to summer and autumn when production is dependent on supplementary feeding. Profit margins will be higher if pasture is conserved to fill the autumn feed gap rather than feeding concentrates.

The amount of grain fed per calver increased by 0.2 tonne of dry matter per calver compared with the previous year. Grain costs now represent 44 per cent of the total variable cost of production on a per cow basis.

**Implications for WA dairy farmers**
The gross margin or farm profit is strongly related to the amount of pasture that is utilised. Increasing pasture utilisation will result in an increase in farm profits because it does not require any additional inputs. Farms are already growing the pasture, they just need to adopt management practices that will allow them to maximise their utilisation.

Dairy farmers have been able to take advantage of low grain prices in the past by feeding a large amount of grain per cow. As the price of grain increases, maximising pasture utilisation will be even more essential in achieving high profits per hectare.

Irrigated farms have the most potential for increasing the amount of pasture that they are utilising. With the costs of irrigation increasing and restricted water allocations in the past two years, increasing pasture utilisation will help maintain or increase irrigated farm profitability. Pasture quality is also going to be important so that these farms can reduce the amount of grain they are feeding and still maintain milk production and composition.

The Dairy Farm Performance Program has allowed Agriculture Western Australia to monitor many aspects of the dairy industry. By 1996/97 we would expect to see a further increase in the amount of pasture that is being utilised, with no substantial increase in inputs. On a per cow basis we would expect to see a decrease in the amount of grain fed, and an increase in the amount of hay and silage that is conserved.

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**Relationship between the amount of pasture utilised and the gross margin per hectare for dairy farms. As farmers increase the amount of pasture that is utilised by the cows profits per hectare increase.**