

## 4.9 Impact of Energy Prices on Milk Production



Embrapa

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### Introduction

Concentrated feed plays an important role in dairy production. The variability of the price of its ingredients has a significant impact on the cost of milk production. Due to the variety of the Brazilian dairy production systems the increase of costs is felt in different ways and with different intensity. Feed prices will be affected by world energy issues, especially in relation to the competition for land use.

### Procedure

First a short review is presented regarding agro-energy and the recent proposals of ethanol and biodiesel production. Secondly, different information about supply and demand has been combined with information about final stocks of grains. Moreover, the use of grains for agroenergy production has been considered, as well as a comparison of historical prices of feed and milk. Finally, a typical cost structure of the different production systems in Brazil is shown, comparing the share of feed items in the total cost of milk production.

### Ethanol production

In 2006, the USA produced about 18.5 billion litres of ethanol, out of a real capacity of about 22 billion. There are three goals of production which are important to take into account. First, the Renewable Fuel Association expects to produce 28.4 billion litres in 2012. Second, the proposal of the Governors' Ethanol Coalition (2007) indicates a production of 45.4 billion litres in 2010. Finally, the proposal of President Bush, aims at a total of 132.5 billion litres in 2017. To reach the first goal, only with corn, 31 % more land would be necessary at the present productivity rate per hectare. For the second goal, 50 % more land would be necessary; and, for the third goal, about 146 % more. Whichever goal is to be reached, it will put considerable pressure on the corn market. At present, the production of ethanol is based mainly on sugar cane, corn and wheat. It is competing, therefore, with other cultures for land, and there has already been an increase in the price of corn and wheat as concentrated feed. In the case of biodiesel, soybean meal is a sub product of the oil extraction. Thus, a rise in the production of biodiesel will also mean an increase in the supply of soybean meal (and protein), which may have a positive impact on the dairy production.

### Explanations

Farm codes: Example RJ3(50) = 50 cow farm in the state of Rio de Janeiro; 3 litres per cow per day. BRL = Brazilian Real.  
Sources: National Corn Growers Association (2006); USDA, Embrapa Dairy Cattle National Research Center, own calculations.

### Grain: Stock, prices and area

Grain prices are increasing due to the restriction of land and competition with other crops. For 2007/2008, the Department of Agriculture of the United States has estimated an increase in the country's area for corn, of about 6 million hectares; and, for soybean, a decrease of about 4.6 million, compared to 2006/2007.

The production of corn in the USA in 2007/2008 is estimated at about 326 million tons compared to the 267 million tons of the previous harvest. In the case of soybean, a harvest of 71.4 million of tons is expected instead of the 86.8 million tons in 2006/2007. The final stock for corn is currently low while the demand is increasing. The combination of these facts may increase the world price for soybean and corn in 2007.

Regarding soybean, there will be pressure, in the short term, to increase the prices, due to competition for land use. In the long term, the prices of the soybean meal are not expected to rise significantly, as the soybean meal is also a residue of the oil product. This point should be taken carefully into consideration.

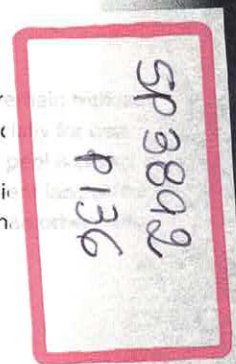
### Feeding cost

The cost of animal feeding will affect the dairy producer in Brazil, especially in the farms with higher productivity which are more dependent on concentrated feed. A typical structure of cost of milk production for six different types of Brazilian farms is illustrated, showing the importance of the feed costs in the total costs. The structure of the feeding cost is also shown and the significance of the share of the concentrated feed in the total feed costs is evident. This indicates that grain prices will have a high impact on the cost of production, especially for the farm types with higher yields. The harvest of 2006/2007 in Brazil was very good and the average prices will be maintained. Moreover the milk prices are increasing, and the cost of animal feeding will remain high during the next few years thus forcing producers to search for alternative sources of feeding and technology, especially considering the need for a substitute source for corn.

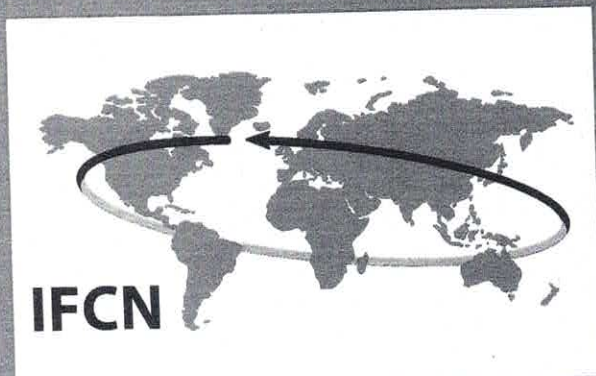
### Conclusion

The cost of animal feeding is expected to remain high. Producers must look for alternatives, especially in Brazil the use of citric pulp and soybean meal is considered. Moreover, Brazil still has sufficient land and will be less affected by this problem than producing countries.

SP 3892  
P. 136







# Dairy Report 2007

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