



Dairy Cattle Performance Consuming Diets with Distillers Dried Grains with Solubles

Rancho “el Bambú”
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Introduction

Ethanol production in the U.S. has been growing continuously. Ethanol plants aside from producing ethanol also produce CO₂ and DDGS (Distillers Dried Grains with Solubles). DDGS are produced from the wet-milling process of corn. At present, new ethanol plants have modified their production process and are producing a new type of DDGS. Since ethanol production will continue to grow, it is of our interest to carry out feed demonstration trials to evaluate the performance of dairy grazing cows in the state of Veracruz.

Protocol

The trial was carried out at “El Bambú” Ranch, property of Fuente Lozada family. Effects on the use of Distillers Dried Grains with Solubles on dairy cows production was evaluated, as well as production costs. This operation uses 2 levels of crude protein in their concentrate, 18% CP and 22% CP. Half of the animals milked where fed the usual concentrate, while the other half was fed a concentrate with DDGS. Feeding practices where the same for all the cows and the same happened with the milking and management practices.

Equipment and facilities:

- Mechanic milking 2X
- Confinement and exercise corrals
- Rotational grazing
- Feeding out of the milking parlor

Animals:

At the beginning of the trial, the cows where randomly separated, taking in consideration the Days in Milk (DIM), the amount of complete lactations and milk production. At the beginning of the demonstration the 36 dairy cows where divided according to the following table:

Assignment criteria for treatments With and Without DDGS

Treatment	Animals	Lactations	Days in Milk	Kg of milk
With DDGS	18	3.3	204	17.9
Without DDGS	18	3.3	204	18.0

Concentrates:

Concentrates were formulated at 18% CP and 22% CP with and without DDGS (NO DDGS), the 4 rations were prepared at the Xico's Livestock Association's feed mill.

The formulations for the concentrates are presented in the following table:

Ingredients	22% With DDGS	22% NO DDGS	18% with DDGS	18% NO DDGS
Molasses %	14.72	14.84	14.20	14.78
Soybean hulls %	5.70	6.53	6.65	10.00
Citric %	13.40	15.33	15.61	13.98
Grinded Sorghum %	16.27	18.67	18.50	22.42
Rice Polish %	14.53	16.67	16.50	21.75
Soybean meal %	17.13	13.6	7.50	12.63
DDGS %	14.27		16.62	
Urea %	1.45	1.36	1.38	1.41
Minerals %	1.40	1.67	1.69	1.69
Salt %	1.13	1.33	1.35	1.35
Total	100	100	100	100

Results:

When comparing the production averages of the cows consuming the concentrate with DDGS and without DDGS, a numeric difference was observed in cows with less than 50 days in milk (DIM), and with cows with less than 100 days in milk (DIM), differences of 0.80 kg and 0.95 kg respectively were observed.

Milk Production (kg) average

Days in Milk (DIM)	With DDGS	Without DDGS
0 - 50	26.10	25.3
51 - 100	25.55	24.6

Liter of milk: Production cost per feeding concept

Days in Milk (DIM)	With DDGS	Without DDGS
0 - 50	\$ 1.10	\$ 1.26
51 - 100	\$ 1.59	\$ 1.84

Conclusions:

- Even though favorable differences when using DDGS were detected at this ranch, these differences are only numeric.
- The animals consumed between 1.3 and 1.8 kg of DDGS per cow per day.
- No harmful effects with the use of DDGS were detected in the animals along the trial.
- An economic analysis should be performed (cost: benefit) to make a decision concerning inclusion of DDGS in a higher or lower proportion.