

# Effect of a combination of plant extracts on milk persistency and milk somatic cell counts of dairy cows

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## Introduction

For dairy cows, total milk production per lactation is largely dependent on the shape of the lactation curve, which can be described through 2 main parameters: peak yield and milk persistency after the peak. These two parameters are mostly negatively correlated. Hence, finding nutritional strategies improving milk persistency could be a way to enhance productivity of dairy herds. A patented combination of plant extracts has been tested to evaluate its impact on milk productivity and milk persistency. Moreover, as these plant extracts were selected for their antioxidant and anti-inflammatory properties, their impact on somatic cell counts (SCC) was also investigated in this study.

## Materials and methods

**Animals:** 2 x 24 Holstein dairy cows, with an average of 101 days in milk, 30 kg of milk production/day.

**Feeding:** Common diet composed by 48 % corn silage, 35 % pasture, 17 % complete feed.

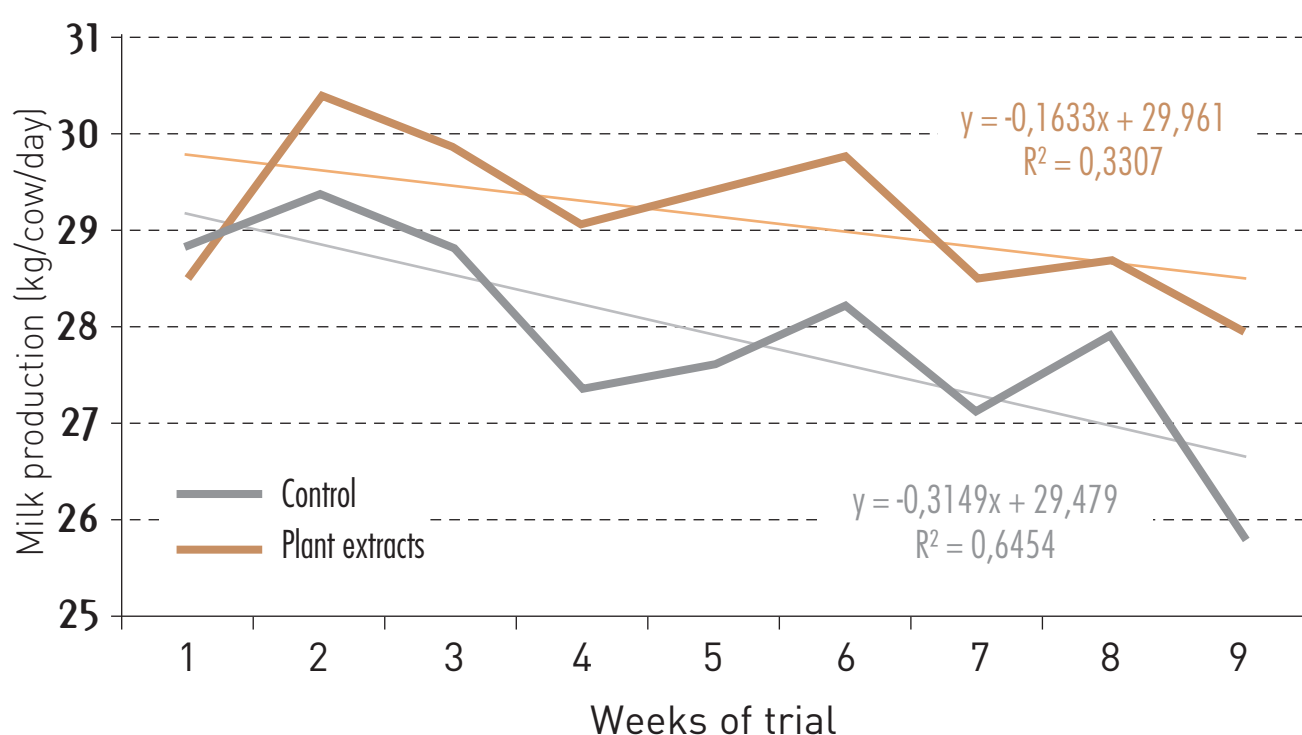
- **“Control” group:** no supplement,
- **“Plant extract” group:** supply of around 300 mg/cow/day of the tested plant extracts combination.

**Trial duration:** 9 weeks for the test period + 3 pre experimental weeks to collect milk production data used for cow allocation in the 2 experimental groups.

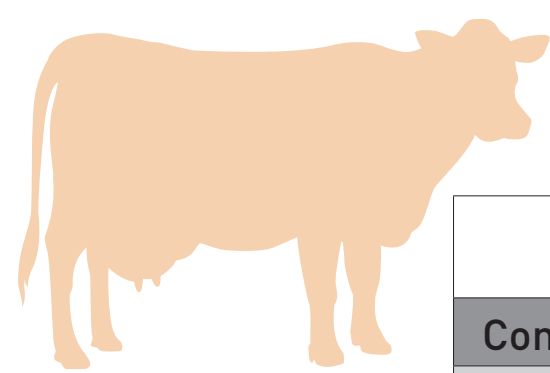
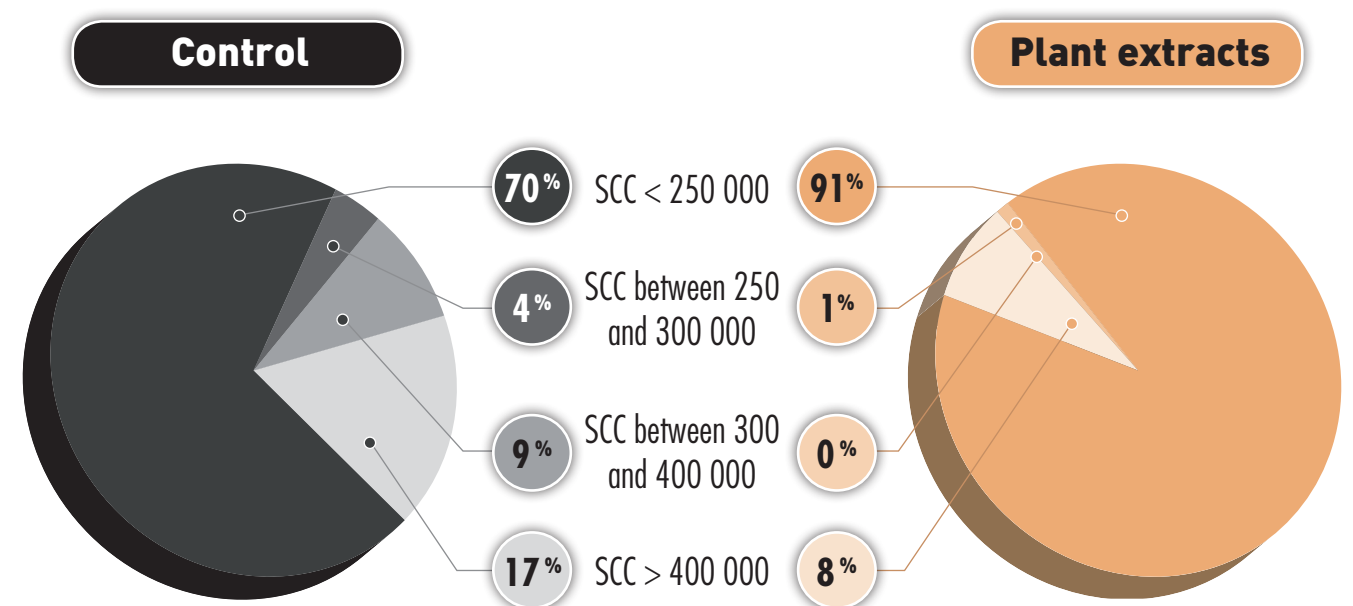
**Statistical analysis:** ANOVA for milk production parameters analysis, Chi<sup>2</sup> test for SCC data analysis.

## Results

### Impact of plant extracts on milk production evolution during the trial period



### Distribution of the somatic cell counts (SCC) levels in the milk samples from the control and the plant extracts supplemented groups



### Impact of plant extracts on milk parameters

Whole herd

Cows > 30kg/day

	Milk production			Protein exportation			Fat exportation		
	Control	Plant extracts	Difference	Control	Plant extracts	Difference	Control	Plant extracts	Difference
Whole herd	28.1 kg	28.7 kg	+ 0.6 kg/day, <b>p&lt;0.05</b>	882 g/day	898 g/day	+ 1.8 % NS	1051 g/day	1048 g/day	- 0.3 % NS
Cows > 30kg/day	28.4 kg	30.7 kg	+ 2.3kg/day, <b>p&lt;0.005</b>	892 g/day	942 g/day	+ 5.7 % NS	1071 g/day	1114 g/day	+ 4 % NS

## Conclusion

This trial showed that the use of specific plant extracts could improve milk production by maintaining a better milk persistency after the peak (loss of an average of - 0.31 kg of milk/week for the control group, only - 0.16 kg of milk/week for the supplemented group observed in this trial), especially for high producing cows and could have beneficial effects on milk SCC levels, by reducing the number of milk samples analysis showing high SCC levels.

Milk persistency enhancement and decrease in SCC are 2 major levers enabling to improve profitability of the farms. Based on this trial results, the tested combination of plant extracts could provide a return on investment up to 12.

