

# The impact of organic farming on milk production and composition in German improved and Saanen goats

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## AIM

Goat breeding in the Republic of Croatia has been intensively carried out in accordance with the "Program of goat breeding" (Karađole et al.) from year 1996th, and the new "Goat breeding program" (Mioč et al.) from year 2012th. The main aim of these is to increase milk production and fertility of goats. Due to the lower prices of milk produced in the conventional system, many breeders are interested in the transition to ecological production system, but it is difficult for them to make a decision because they do not know how it will affect the quantity and quality of milk produced. To help farmers in that decision the objective of this study was to evaluate the effect of farming system (conventional and organic) on the milk production and composition (fat and protein content) for Saanen and German improved goats in Croatia.

## MATERIAL AND METHOD

- The study included 1,129 lactations taken from the central database of the Croatian Agricultural Agency.
- In Saanen breed, 861 lactations were recorded for 23 breeders, among which 47 lactations belong to 2 breeders who are registered in the organic farming registry.
- In German improved goats, 268 lactations were recorded for 8 farmers, while organic farming was used for 2 breeders and 85 lactations were recorded.
- GLM procedure in SAS / STAT

## RESULTS

### Saanen goats

Figure 1. Herd structure

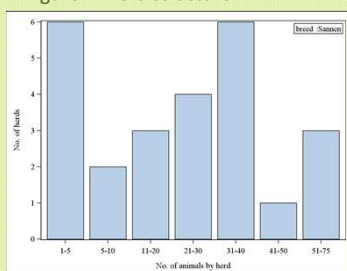


Figure 2. Lactation milk yield.

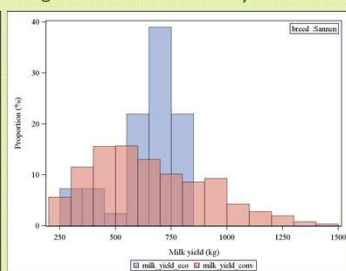


Figure 3. Fat content

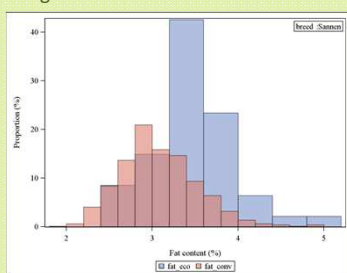
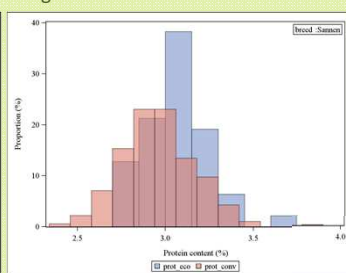


Figure 4. Protein content



### German improved goats

Figure 5. Herd structure

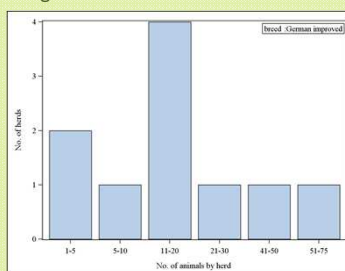


Figure 6. Lactation milk yield

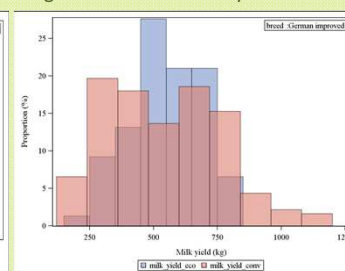


Figure 7. Fat content

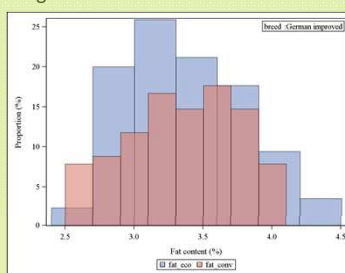
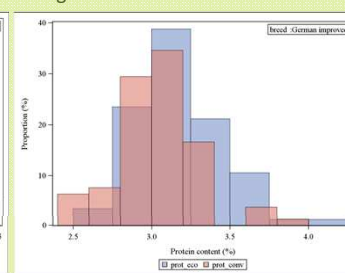


Figure 8. Protein content



## CONCLUSIONS

**Saanen breed:** Farming system had significant effect ( $P < 0.05$ ) on milk production and protein content ( $P < 0.01$ ). Differences between farming system were not observed for fat content. Saanen goats produced in conventional farming during the lactation of 280 days had average milk production of 746 kg and an average protein content of 2.97%. Lower average milk production (669 kg) and a higher average protein content (3.00%) was observed for goats in

organic farming system. **German improved goats:** Differences in milk production were observed ( $P < 0.05$ ) between farming system. In conventional system, average milk production was 524 kg milk, while average protein content was 3.16% during the lactation of 274 days. In organic farming, the average milk production was 438 kg and average protein content was 3.28%.

**These results confirm the importance of the higher economic value of milk produced in organic farming.**

