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User specific breeding goals in dairy goat breeding

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Outline

1. Introduction
2. Objectives of the project and of the study
3. Material and Methods
4. Results and Discussion
5. Conclusions

Introduction

- **In Germany:**
- Goat breeding de-central structured: different breeding programs from state to state $\Rightarrow$ small fragmented populations (Zumbach & Peters, 2007)
- Different breeding goals
- No-breeding value estimation
- Little to no artificial insemination
- High cost sensitivity of performance recording (Zumbach & Peters, 2007)

Introduction

- **In Baden-Wuerttemberg:**
- In total 2,400 goats in the herdbook, three “main” breeds:
 - Boer goat (38%),
 - **German Fawn** (37%),
 - Walliser Schwarzhals goat (8%)(Ziegenzuchtverband Baden-Wuerttemberg, 2009)
- 190 active breeders in breeding organisation
- Total population 40,000 goats (estimation)
(Ziegenzuchtverband Baden-Wuerttemberg, 2009)

Objectives

Overall study:

Evaluation and optimisation of organisation and planning of goat breeding in Baden-Wuerttemberg

Stakeholders: Breeding organisation, Ministry of Agriculture, University

- Forecast of future production conditions, identification of markets for goat products
- Development and evaluation of alternative breeding programs and organisational structures
- Decision and realization of most promising alternative in cooperation with goat breeders and all institutions involved in goat breeding in Baden-Wuerttemberg
- Scientific assistance during implementation of breeding programs (considering the necessary adaptation in organisational setup)

Particular study:

Evaluation of user-specific and sustainable breeding goals in different user groups of dairy goats (German Fawn)

Materials and Methods

Goat farmer survey:

- In 2008, addresses of goat farmers were obtained from the goat breeders association
- Out of 35 farms, 19 agreed to a visit and finally 17 were willing to take part in the survey. Main argument for not taking part: lack of time, fear of “stealing ideas”
- All farmers were interviewed by one person based on standardised questionnaire

Goat breeder survey:

- In 2008, all goat shows in Baden-Wuerttemberg were visited (n=5) and all breeders showing goats (n=30) were interviewed
- All breeders were interviewed by one person based on standardised questionnaire

Materials and Methods

- For the breeders group, data sets of German Fawn breeders (n=19) were used for evaluation. For farmers, all data sets were used for evaluation
- In the questionnaire, farmers and breeders had to evaluate different traits for dairy goats with points (range 1 to 7, 7 points = most important, 1 point = least important)
- Mean ranks for all traits were calculated

Results and Discussion

Table 1: Basic information on goat farmers and breeders in Baden-Wuerttemberg

	Farmers	Breeders
N	17	19
<u>Type of business:</u>		
Regular basis	13	0
Sideline basis	4	2
Hobby	0	17
Organic farming	14	0
Average number of goats	122	10
Milk recording (%)	24%	100%
Member of breeding organisation	9	19

Results and Discussion

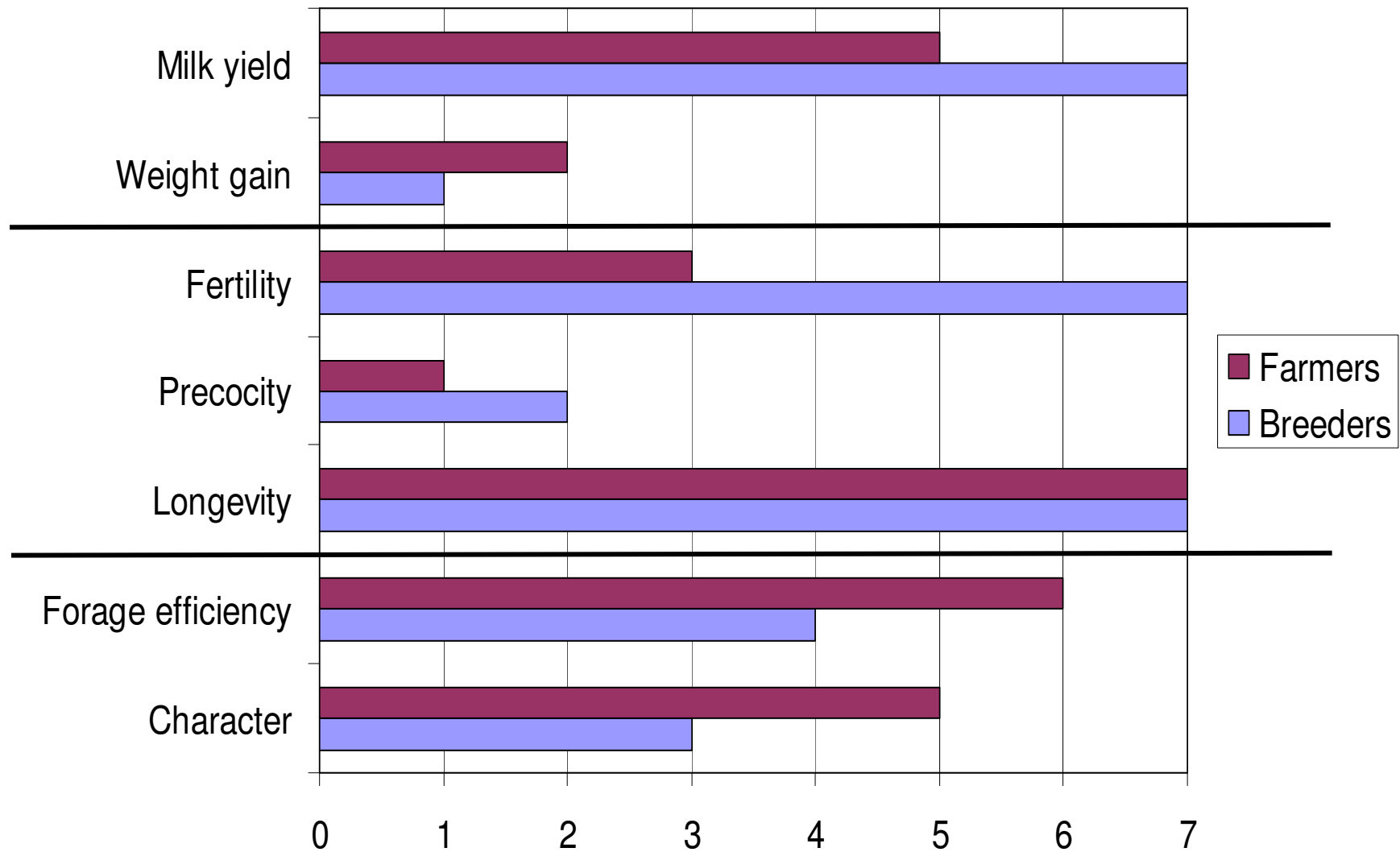


Figure 2: Ranking of farmers' and breeders' trait preferences

Conclusions

- Very inhomogeneous structure within goat breeding and keeping in Baden-Wuerttemberg: 190 “breeders” – 35 “farmers”
- Large differences in production conditions:
 - for 76% of “farmers” dairy goats are main income, for “breeders” it is mainly hobby
 - high share of organic production amongst “farmers” (82%)
 - average goat number of “farmers” 12 times higher than for “breeders”
- Divergent opinions about importance of different traits between the user groups:
 - “Farmers”: high importance of sustainability traits (longevity, forage feed efficiency)
 - “Breeders”: adopted breeding organisations guidelines as their breeding objectives (milk yield, fertility, longevity)

References

Zumbach, B., Peters, K.J. 2007. Zuchtprogrammgestaltung bei der Bunten Deutschen Edelziege (Breeding program formation for the German Fawn dairy goat). Züchtungskunde 79, 3, 184-197

Ziegenzuchtverband Baden-Wuerttemberg 2009. Internal statistics.

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