Effect of semen batch on fertility of Austrian dual purpose Fleckvieh cattle

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Background and aim

- Semen batch (i.e. day of semen collection) was recorded at inseminations in 2004 – 2006 by the AI Centre in Lower Austria
- Combination of semen characteristics with insemination data
- Aim was to analyse the effect of semen batch on paternal non return rate 56 (NR56) and 90 (NR90)

Photo: Oberösterreichische Besamungsstation GmbH Hohenzell

Data

- 31,476 artificial inseminations of dual purpose Fleckvieh cows carried out with 60 service sires
- semen batch characteristics: number of viable sperm in the straw, the age of bull at time of semen collection, dilution factor, sperm motility, percentage of viable sperm before freezing and after thawing, service sire

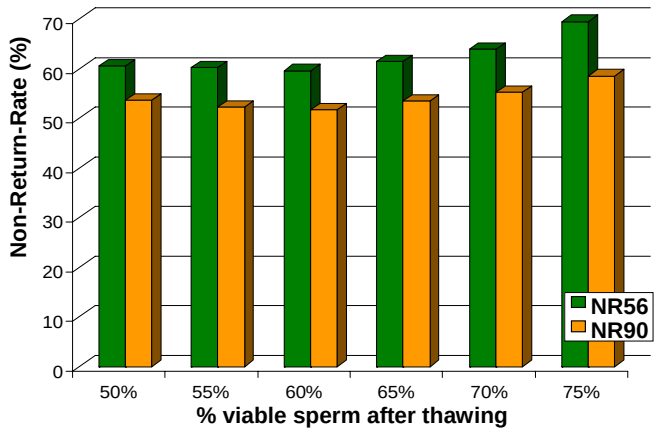
Model

- SAS PROC MIXED, 8 models including one semen batch characteristic at a time
- Effects: herd(inseminator), days to 1st service, lactation number, month and year of insemination, semen batch characteristics

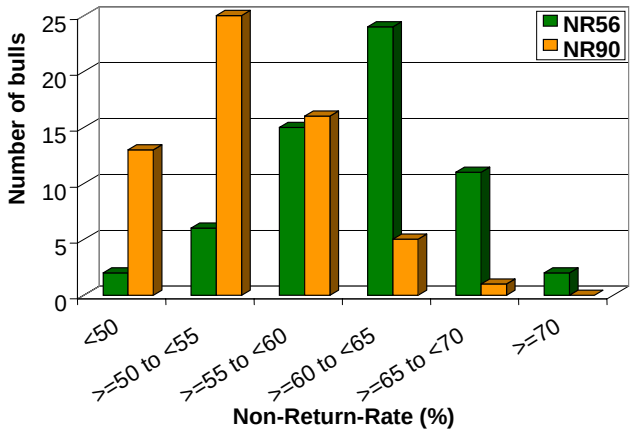
Results

Effect	P-value NR56	P-value NR90
Herd (inseminator), days to first service, lactation, year and month of insemination	< 0.0001	< 0.0001
Service sire	0.0001	0.0001
No. of viable sperm in the straw	0.037	0.053
Age of bull	0.57	0.35
Dilution factor	0.89	0.64
Sperm motility	0.71	0.76
% viable sperm before freezing	0.53	0.70
% viable sperm after thawing	0.003	0.051

LS-Means of % viable sperm after thawing for NR



Number of bulls in Non-Return-Rate frequency classes



Conclusions

- **Significant effect of no. of viable sperm in the straw, % of viable sperm after thawing and service sire**
- **NR slightly increases with increasing % viable sperm after thawing**
- **Service sires differ in NR**
- **Additional information on fertility can be obtained by taking semen batch into account**