SS2-06

# COMPARISON OF CONCEPTION RATES OF GOAT DOES WITH NATURAL SERVICE AND CERVICAL INSEMINATION USING FRESH-DILUTED OR FROZEN SEMEN ON AN ORGANIZED GOAT FARM IN MAHARASHTRA STATE OF INDIA

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This study presents the conception rates on natural service or cervical artificial insemination (AI) of 1658 does from 2012 to 2016 on a goat farm belonging to Nimbkar Seeds Pvt. Ltd. in Maharashtra State of India. Does were either naturally mated or inseminated twice (immediately after detection of oestrus and 8- 10 hours later) on natural oestrus detected by vasectomized bucks. Pregnancy was diagnosed by ultrasonography on 45 to 60 days after insemination. Conception result was analyzed as a binomial variable (whether the doe conceived or not) by fitting year-season of breeding and kind of breeding (five classes - (i) natural service (681 records) (ii) AI with fresh-diluted semen (414 records) (iii) AI with semen frozen at NARI, Phaltan in pellets (112 records) (iv) AI with semen frozen at NARI, Phaltan in straws (403 records) (v) AI with frozen semen straws imported from Cyprus (48 records) as fixed effects and breed proportion of the doe and age of the doe at AI as covariables. Year-season of breeding, kind of breeding and age of the doe at AI were highly significant $(P < 0.001)$ while breed proportion of the doe was not significant. The regression coefficient of age at AI was very small but negative indicating a slight trend towards lower conception rate as age of the doe increased. The retransformed least squares mean conception rate for AI with frozen semen pellets was the highest at 0.70±0.05 followed by AI with frozen semen straws at 0.63±0.03, then by AI with fresh-diluted semen 0.62±0.03, then by natural service 0.60±0.02 and lastly by AI with frozen semen of Damascus breed imported from Cyprus (0.56±0.08). The reason for a lower conception rate for natural service could be that many of the does that were naturally mated, were problematic does that did not conceive after AI. It was concluded that artificial insemination can be used efficiently in goat breeding with acceptable conception rates.