

strength in a stipulated time period. The profit produced in a family from a sale of sheep has been increased from Rs. 30,000 to Rs. 50,000 in a year. Farmers are getting Rs. 20,000 to Rs. 30,000 as additional income from the sale of progenies of distributed Ram which has helped them to be economically stable.

#### SS6-05

### OPTIMUM FLOCK SIZE FOR ECONOMIC SUSTAINABILITY UNDER SMALL HOLDER GOAT PRODUCTION SYSTEM IN KERALA

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The study was conducted with an objective to find out optimum flock size for economic success and livelihood security in small holder goat production system in Kerala. Data were recorded from 403 farmers belonging to Palakkad, Malapuram, Kozhikode and Kannur districts for one year. The variable included were flock size, land holding, education, family size, shelter type, breeding method, feeding practices, income from goat and other sources. Based on flock size, the households were divided into three groups viz., below four, four to eight and above eight and the economics of production were analyzed. Results revealed that majority of farmers (90.80%) were marginal farmer with land holding of below 30 cents. About 91% had school level education and family size was 4.30%. Average goat flock size was 4.20 and 30 % of farmers were maintaining breeding males. About 92% of farmers constructed a shelter with raised wooden platform and tiled roof for housing goats. The net return per goat was Rs.711, Rs.779 and Rs.798 in three groups, respectively. The net return was significantly higher for the households maintaining flock size of four to eight adult goats. Study suggests that an optimum flock size of four to eight adult goats is better for small holder production systems of Kerala.

#### SS6-06

### WELFARE: NEED OF HOUR IN SMALL RUMINANTS

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Animal welfare is an important requirement for good quality and sound farm animal production. How animal behaves is the indicative of its welfare. Behaviour is how animal responds to internal and external stimuli (Passile et al. 1996). Behaviour is combined effect of heritage and environment. Animal is said to have good welfare when it expresses its natural behaviour freely without any restriction. The bad welfare is expressed as the deviation from natural behaviour which is expressed in terms of physical, behavioural, physiological, biochemical, pathological as well as emotional change. The behavioural changes like aggression in sheep are due to alteration in space allowances (Meisfjord Jorgensen et al. 2009). The overall welfare status of individual animal, group of animals or whole flock is reduced by diseases. Any thing that brings about stress in animals results in poor animal welfare due to hormonal changes (Todoni et al. 2006). Space allowances and housing structures are described as the main potential sources of discomfort for sheep and goat. The important animal welfare issues in sheep and goat are castration, tail docking, muleshing, weaning, ear tagging, handling, shearing, clipping, transport, slaughter and transgenesis. It has been reported that the use of an epidural anaesthesia did not reduce the pain caused by rubber ring castration. The electroejaculation method for semen collection in sheep and goat elevates the levels of cortisol. Efforts should be continued for maximum production but at the same time animal welfare should not be compromised.