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different individuals of each breed varied in size, shape and position of centromere. However, it was strongly recommended to performed chromosomal investigation of breeding sires of all Indonesia local specific breed, especially for numbers of ruminant potential for commercial artificial insemination purposes. It is desirable that the germ plasm introduced in the local population of cattle and buffaloes should be screened out for any possible chromosomal abnormality.

Keywords: Karyotyping; Abnormality; Ruminant; Chromosome; Artificial insemination

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Genetic and environmental variation in reproductive performance of pasture-based dairy cows.

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Pasture-based dairy cows rely heavily on the availability of good quality grass and favorable environmental conditions to realize their maximum genetic potential for lactation and reproductive performance. Over one million records of gestation length, calving interval, number of services per conception, interval to first breeding and days open from four hundred and twenty eight pasture-based dairy farms in Tasmania, Australia, were evaluated. The hypothesis tested was that reproductive performance will be driven by multi-faceted genetic and environmental factors. It was evident that Holstein-Friesian and Jersey x Holstein-Friesian cows had similar reproductive performance, but calving intervals were longer in spring (390 days) than winter (362 days) and days open longer in autumn (136 days) than spring (77 days). There was a general decline in cow fertility that was mainly parity-driven because of the increases in interval to first breeding from 469 to 527 days, number of days open from 95 to 111 days and calving interval from 369 to 379 days as cow parity increased from 1 to 3. Our findings suggest that this decline in fertility could be attributable to decades of dairy cow breeding strategy that emphasized selection for high milk yield at the detriment of reproductive performance. In conclusion, there is the need for including reproductive traits in the selection index of pasture-based dairy cows and adjusting for seasonal variation.

Keywords: Interval to first breeding; Services per conception; Calving intervals; Reproductive performance; Pasture-based dairy cows

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Breeding values and genetic trends in growth traits of Lohi sheep in Pakistan.

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The objective of the current study was to paradigm the genetic and phenotypic trends for Lohi sheep maintained at the Livestock

Production Research Institute, Bahadurnager District, Okara, Pakistan. The performance data during a period from 1990-2008 were utilized for the present study. Breeding values of animals for various performance traits were estimated by BLUP procedures using a DFREML set of computer program fitting individual animal model. The least squares solutions of breeding values were drawn against year of birth to depict the genetic trend. Phenotypic values of different performance traits were also plotted against the year of birth to determine phenotypic trends. The overall estimated breeding values ranged from -0.25 to 0.33 kg (birth weight), -0.99 to 1.30 kg (weaning weight), -1.16 to 1.51 kg (yearling weight), -0.71 to 1.03 gm (pre weaning daily gain), -4.59 to 5.53 gm (post weaning daily gain) and -0.22 to 1.16 gm for annual greasy fleece weight. The genetic trends for birth weight showed a decreasing trend and phenotypic trend was static, whereas, the genetic and phenotypic trend for weaning weight showed an increasing trend. No specific genetic and phenotypic trend was observed for yearling weight, pre-weaning daily gain and post-weaning daily gain. The genetic trend and phenotypic trend for greasy fleece yield exhibited little decreasing trend. The results of the present study showed that the selection of animals was not practiced in proper direction and some sort of random mating had been experienced. The study thus suggested that better feeding and management practices and implementation of planned breeding program can improve the overall situation of the performance trait in this Lohi flock.

Keywords: Lohi sheep; Breeding values; Genetic trend; Phenotypic trend; Pakistan