

TEST TUBE KIDS PRODUCED AT C.I.R.G.

Scientists of Central Institute for Research on Goats, Makhdoom have successfully produced two *in vitro* fertilized (IVF) male and female goat kids. CIRG is a premier research Institute under the aegis of Indian Council of Agricultural Research which works at the interface of scientific livestock rearing and alleviation of poverty using modern goat production technologies and animal husbandry practices. Dr. Devendra Swarup, Director, CIRG Makhdoom named the IVF kids so produced as “Ajat and “Ajati”. The credit of this research success goes to a team of scientists comprising Dr. S.D. Kharche, Dr. A.K. Goel & Dr. S.K. Jindal who achieved success to establish pregnancy in goats using IVF technique under the guidance of Dr. Devendra Swarup, Director of the Institute. Team was working under a World Bank Assisted NAIP on “Developmental Potency of Parthenogenetic Goat Embryos”. This is the second success in producing IVF kids at this



Institute. The project is aimed at investigating the developmental potency of parthenogenetic (embryos produced without the involvement of male), *in vivo* and *in vitro* produced embryos. Goat oocytes used in this technique were collected by follicle puncture method from the ovaries brought from an abattoir located at Agra. Recovered oocytes were subsequently cultured in a special defined medium in a CO₂ incubator. Matured oocytes were then co-incubated and fertilized *in vitro*. Fertilized oocytes were further allowed to grow in defined culture medium with oviductal epithelial cells in a CO₂ incubator and then finally transferred into surrogate goat of Sirohi breed through surgical technique.

Following transfer, pregnancy was initially confirmed at day 35 and subsequently at day 65 by ultrasonography. **On 3rd November, 2010**, this surrogate goat of Sirohi breed normally kidded two kids (male weighing 2.4 kg; female weighting 2.6 kg) a 142 days post transfers. The weight of surrogate goat after parturition was 30 kg. Both the kids were healthy. IVF technique will go a long way for improvement & conservation of goat breeds of India and has opened new vistas for application of biotechnological tools for production of biopharmaceuticals through transgenic technology. The technique has applications in faster propagation of the genetic merit of the elite females and also to use non-descript goats as foster mothers for production of kids of superior genetic merit. This particular achievement is a step towards the high quality research output of the Institute in the area of Reproductive Biotechnology. The IVF technology came into being in the 1950s, however, not much success in India was achieved in this technology in India until mid 90's and the technology could be successfully implemented in goats by this Institute in 2006. This success of CIRG in the area of IVF will go a long way in formulating strategies to conserve endangered indigenous breeds as well as elite germplasm of goats available in the country. CIRG is contributing to high quality research output in the area of caprine ethology, genetics, health, production and reproduction. It is committed to enhance the economic status of small farmers and to ensure their livelihood and food security. The emphasis has been on the use of multidisciplinary and interdisciplinary approaches to improve eco-efficient rearing of goats and

making goat farming a vibrant and viable Enterprise, besides popularizing goat produce by value addition and making them attractive for industrial applications. The work has been possible due to the support and guidance of Dr. S.Ayyappan, Director General and Secretary DARE, Dr. K.M.L.Pathak, DDG (Animal Science) and Dr. Bengali Babu, National Coordinator, NAIP and authorities of SMD and NAIP of Indian Council of Agricultural Research, Ministry of Agriculture, Government of India. Dr. Devendra Swarup, Director of the Institute congratulated the team of scientists and assured all possible assistance to the scientists in their future endeavors and expressed hope that such achievements will go a long way in furthering of the objectives of the Institute and in improving the sustainability of goat production system.