

# ON OCCURRENCE OF MONOECIOUS TREE OF *DIOSPYROS MELANOXYLON* ROXB.

*Diospyros melanoxylon* Roxb. (family Ebenaceae) is a common tree of tropical dry mixed deciduous forests, specially in central India. Several workers<sup>1-5</sup> reported it as a dioecious species (Plates A and B). During a visit to Naryaoli Forest, District Sagar, M.P., India, a tree was found which is monoecious (reported first time, Plate C). Normally the differences between monoecious and dioecious trees are strong in flowering and fruiting stages (Table I).



PLATE A. A twig dioecious plant with female flowers only.



PLATE B. A twig of dioecious plant with male flowers only.



PLATE C. A twig of monoecious plant with male flowers and a fruit together.

TABLE I

Character	Dioecious Plant	Monoecious Plant
1. Fruit	Globose length 27 mm breadth 27 mm	Long and narrow length 17 mm breadth 14 mm
Pedicel	Short, stout and thick length 5 mm breadth 3 mm	Long and narrow length 10 mm breadth 1 mm
Calyx	Persistent, fleshy green, thick and grooved length 9 mm breadth 7 mm	Persistent, dry, scaly thin and simple length 9 mm breadth 3 mm
2. Seeds		
number	Max. 5 normal 4	Max. 4 normal 2
Size	Maximum: length 19 mm breadth 12 mm Minimum: length 10 mm breadth 6 mm Normal: length 16 mm breadth 10 mm	Maximum: length 10 mm breadth 5 mm Minimum: length 7 mm breadth 4 mm Normal: length 10 mm breadth 4 mm
Weight	910 mg (Average of one seed)	156 mg (average of one seed)

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June 15, 1979.

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### SUCCESS IN EMBRYO TRANSFER IN INDIGENOUS GOATS

THE success in transplantation of embryo from one rabbit to another was first reported by Heape<sup>3</sup>. As a result of intensive research in the last three decades, the transplantation technology has found its place in the rapid multiplication of exceptionally high yielding livestock in developed countries. The feasibility of application of this technology in indigenous goats has been reported in this communication.

The oestrus in sixteen she-goats (Barbari nannies) was synchronized with Melengestrol Acetate (MGA), fed with concentrate mixture @ 0.15 mg/animal for 16 days. Eight goats (donors) were given 400 i.u. PMSG (No. G. 4877, Sigma) intramuscularly on the last day of MGA feeding to enhance ovulation rate and they were artificially inseminated during oestrus. The other eight goats in oestrus were left empty and employed as recipients.

The eggs from the fallopian tubes of donors were collected at 72 hrs post-onset of heat and those exhibiting normal cleavage were transferred to the fallopian tubes of recipients whose luteal stage was coinciding with the age of the eggs at the time of transfer. The collection and transfer of embryos were made by the transfer application of conventional surgical techniques described by Agrawal *et al.*<sup>1</sup>.

Observations on ovulation rate, % recovery, cell stage of eggs, % conception, proportions of eggs surviving to term, gestation length, number of kids born and birth weight of kids were recorded.

The ovulation rate in PMSG treated donors and untreated recipient females were  $2.62 \pm 0.37$  and  $1.37 \pm 0.17$  respectively. Sixty-two percent of the eggs were recovered from the fallopian tubes of which 84.6% exhibited normal cleavage. The eggs

belonged to 4 to 8 cell stage and  $11.66 \pm 0.14 \mu$  in diameter. Seventy-five per cent of the recipient goats conceived and carried 54.5% of embryos to full term (gestation length— $146.1 \pm 0.3$  days). The average birth weight of the kids was  $2.03 \pm 0.12$  kg.

The donor goats responded to PMSG as evidenced by two-fold increase in ovulation rate. The ovulation rate in recipient goats was similar to the normal values in Barbari breed as reported by Prasad *et al.*<sup>6</sup>. The egg recovery rate from donors, conception rate of recipients and survival rate of transplanted embryos to full term in the present study are encouraging and resemble the values on cattle<sup>5</sup> and sheep<sup>2,4</sup>.

The exhibition of normal gestation length and normal birth weight of the kids born out of transplantation indicates the feasibility of application of the technology in indigenous goats.

The authors are grateful to Dr. C. M. Singh Director, Indian Veterinary Research Institute Izatnagar, for providing the facilities.

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### A SIMPLE AREA CALCULATING DEVICE (ACD) FOR BIOLOGICAL SYSTEMS

Size relations of tissue play important role in solving some of the problems of comparative and developmental anatomy and embryology. The optic illusion has led a number of authors to misinterpret the size of the cells or tissues. Sivaramakrishna<sup>1</sup> measured a number of published illustrations of two-celled embryos and pointed out that the cell which appeared and interpreted to be larger than the other need not be so in actual area. This is a single example out of many noticed and unnoticed instances, to show the importance of area calculation. Area of tissue, in a sectional view can be measured by the point counting using