

Vidya Bhawan Balika Vidyapeeth Lakhisarai

Arun Kumar Gupta

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Subject Biology

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Methods of improving foods:

i). Inbreeding :- Breeding between same breed for 4-6 generations. Eg.- cows, buffaloes, poultry . (Advantage: Increases homozygosity and develops pure line, removes less desirable genes)

In breeding depression :- continued in breeding reduces fertility even productivity. A single outcross often helps to overcome inbreeding depression

ii) Outbreeding :- breeding between unrelated animals. It is of two types –

1.) Out crossing :- mating within the same breed but not having ancestors.

2.) Crossbreeding :- superior males of one breed are mated with superior females of another breed to get better progeny.e.g.- cows of inferior breed with superior bull.

Hisardale :- is a new breed of sheep developed in Punjab by crossing Bikaneri Ewes and Marino Rams.

3) Interspecific hybridization :- male and female animals of two different species are mated. E.g.- mule is crossbreed of male donkey and female horse.

4.) Control breeding :- it is done by artificial insemination and multiple ovulation embryo transfer technology (MOET)

(a) Artificial insemination :- semen of superior male is collected and injected into the reproductive tract of the selected female. The spread of certain diseases can be controlled by this method.

(b) MOET :- Technique for herd improvement by successful production of hybrids.

i) Hormone(FSH) are administered to the cow for inducing follicular maturation and super ovulation.

ii) Cow produces 6-8 eggs instead of one egg & is either mated with elite bull or artificially inseminated.

iii) Fertilised egg at 8-32 cell stage are recovered non-surgically & transferred to surrogate mother.

iv) Done in cattle, sheep, rabbits etc.