

ARTIFICIAL INSEMINATION TECHNOLOGY IN BACKYARD POULTRY REARED UNDER COASTAL CLIMATE

Technology developed by : Dr. Gokuldas PP, Senior Scientist (Animal Reproduction)
Dr. Nibedita Nayak, Scientist (Poultry Science)
Dr. Amiya R Sahu, Scientist (Animal Genetics Breeding)

PROBLEM AND RESEARCH GAP

Under the changing climatic scenario, high ambient temperature coupled with humidity can impair reproductive performance and fertility in poultry. Lowered fertility can result from poor libido and unsuccessful mating especially in improved poultry varieties and broiler breeds. Incompatibility also arises when roosters are heavier than females and this may result to injury of the female birds under natural mating. In some cases, poultry farmers also face challenges when their better birds fail to mate and reproduce because of shyness, infections, physical limitations or social incompatibility.

PARTICULARS AND SALIENT FINDINGS

Breeding using Artificial Insemination (AI) in poultry, albeit not widely adopted, is an important technology especially for broiler breeding stock and improved backyard poultry varieties, where fertility is low. AI technology allows for incompatible birds to mate and also minimizes venereal diseases. Institute has standardized AI technology in backyard poultry varieties exclusively reared under hot and humid coastal climatic conditions. Developed technology comprises of procedures for rooster training, semen collection and subsequent insemination of quality tested and processed semen. Procedure for semen collection is accomplished through dorso-abdominal massage method. Tested samples are extended with modified Ringer's diluent and 1 part of semen can be diluted with 2 to 8 parts of extender depending on the requirement. Insemination of semen doses is performed using intra-cloacal method. A volume of 0.3 ml of extended semen is used for insemination in each female bird.

IMPACT

AI in poultry can have multi-fold effects on reproductive performance and overall productivity. Technique aids in faster dissemination and extensive use of semen from genetically superior male birds particularly for medium-scale and commercial farms. AI has been successfully practiced in selected flocks in the Institute poultry units. Under standard rearing conditions, average fertility of 89.43% and hatchability of 84.31% have been recorded for the developed method in comparison to 82.19% fertility and 78.70% hatchability in natural mating. This AI method can also become cost-effective especially in broiler breeder management. Also, semen diluent used for AI minimize the number of males necessary for breeding, resulting in lower feed costs, as well as reduced space, maintenance, and operating costs. Under medium-scale poultry farming with 2000 birds, technology can generate a net income of rupees 1.8 lakhs with B:C ratio of 1.75 and having an employment generation potential of 220 man days. Institute has also popularized this technology as part of various trainings and demonstration to farmers in the region.



Accessories for AI in poultry



Poultry semen evaluation



AI in backyard poultry birds