

## **Efficacy of egg-yolk citrate extender fortified with aqueous garlic extract on rooster semen for artificial insemination**

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### **Abstract**

An experiment was designed to harness the potential of aqueous fresh and dried garlic extracts supplement in egg yolk extender for rooster semen to improve fertility and hatchability of egg. Aqueous extract of fresh and dry garlic were obtained and supplemented into egg yolk-citrate buffer at 0, 1, 2, 3, 4, 5, 6 and 7% for treatments 2, 3, 4, 5, 6, 7 and 8, respectively and unextended semen as control (T1). A total of 20 Marshal roosters and 160 hens of 40 weeks old were used for the experiment. The ejaculate pool of the marshal roosters was collected and pooled, divided into eight equal parts and randomly allotted to the treatment groups, the extenders were diluted with the semen in ratio 2:1 and evaluated for semen quality parameters. The hens were inseminated with the constituted extenders for three weeks and eggs were collected for the period of two weeks. The eggs were assessed for fertility and hatchability. The results obtained showed that livability of sperm cells and semen pH were not adversely affected by the treatments. The percentage sperm motility was high and within 80% to 100% in all aqueous dry garlic inclusive extended semen compare to aqueous fresh garlic extended semen which recorded 60% at 5% and 6% fresh garlic inclusion in egg yolk extender. The result of fertility of hens inseminated with egg yolk-aqueous dry garlic extracts extended semen showed that treatments 7 (5%) compare favourably with treatment 1 (unextended) with highest fertility percentage value of 80.0%. Aqueous fresh garlic extract inclusions of 2% and 6% had apparently better percentage values compare to unextended treatment. Inclusion of aqueous fresh garlic extracts at 6% in egg-yolk extenders, and 5% inclusion of aqueous dry garlic extract to egg yolk extender are recommended as an extender in roosters' semen extension.

**Keywords:** Egg-yolk citrate extender, aqueous garlic extract, rooster semen, artificial insemination

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**Target audience:** Reproductive Physiologist, Poultry breeders, farmers

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