

Effect of Age at mating and silver nanoparticles administration on progeny productive performance and some blood constituents in Japanese quail

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Abstract: A total of 64 males and 192 females from Japanese quail breeders flock (*Coturnix coturnix japonica*) were divided into two equal groups of different ages (old birds; 52 weeks of age (WOA) and young birds; (10 WOA). These subgroups were used in a series of four natural mating groups in a regular and reciprocal manner. In the 1st and 2nd mating groups; old males were paired with old and young females, respectively. While for the 3rd and the 4th groups; young males were paired with old and young females, respectively. The first and the second subgroups of both ages (old and young) were subjected to a treatment of 20 ppm silver nanoparticles (AgNps) in drinking water. The third and fourth ones were used as a control treatment given fresh water with no supplement. The hatchability percentage and some embryonic traits were determined. At the end of the experimental period, birds were weighed and slaughtered, autopsied and body internal organs were weighed. Some blood constituents were determined for quail progeny.

The results showed that Progeny of old females, whether mated with young or old males (M4 and M2) exhibited higher LBW, BWG and FC in comparison with the other mating systems (M1 and M3), and the effect was more pronounced with AgNps administration. It could be concluded from the present study that, it is possible to improve the productive and healthy status of the progeny if the old age breeder is mated with younger ones. The magnitude of this effect could be achieved through the administration of AgNps in the breeder's drinking water.

Key words: Age at mating, silver nanoparticles, productive performance, offspring ,blood constituents, Japanese Quail.