

РН	5,5 - 5,7	5,6	6,0
Билирубин	-	-	-
Реакция на кровь и гемоглобин	-	-	-
Эпителий	-	-	-
Лейкоциты	/ 0 - 5	1	4
эритроциты	-	-	-
Цилиндры	-	-	-

Таким образом, изучение ветеринарной литературы позволяет оценить сложность ситуации по долгосрочным рискам и преимуществам кастрации и стерилизации, которые зависят от породы, возраста, пола и других факторов, которые необходимо учитывать. Следует отметить, что перед проведением данной операции необходимо назначить биохимическое исследование (ОАК, ОАМ) для подтверждения сопутствующих заболеваний. После операции не стоит забывать о профилактических мероприятиях и возможных рисках.

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### DOES THE USE OF MEDICINAL PLANTS IMPACT THE REPRODUCTIVE PERFORMANCE OF QUAIL?

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**Abstract:** *Fertility is one of the most important features in quail that needs to be improved, especially under stress. Stress damages the testicles in male quail,*

*affecting semen volume, sperm concentrations, and motility. Stress causes oxidative damage to the oviduct, and ovary in female quail. This review aims to include the most common medicinal plants that have been effectively utilized to promote quail fertility.*

**Keywords:** *Quail- Reproductive performance- Medicinal plants.*

**Introduction:** Around 60–80 % of people in modern countries are more concerned about their health, which leads them to seek natural-based products to replace the functions of various synthetic items on the market and to use traditional medicine to treat various disorders. On the other hand, using medicinal plants as a feed component in animal nutrition can help traditional livestock producers maintain their health. As a result, herbs, medicinal plants, and their oils are gaining popularity as potential sources of improved health. Quail is an economically important household bird for egg and meat production. The birds are disease-resistant, and require less room and equipment. They are mostly raised for meat in European countries, although they are considered dual-purpose in Asian countries. Quails are farmed for meat production in some countries, such as Turkey, and sold per animal. As a result, producers strive to obtain the greatest number of chicks possible in order to attain a particular level of overall income. Fertility, hatchability, and embryonic mortality are essential reproductive qualities that influence the number of chicks that may be acquired from a breeding flock. The quantity of viable eggs produced per chicken is determined by both genetic and environmental factors such as genetic structure, mating ratio, parental age, and climatic circumstances. The impacts of several management strategies on quail fertility, such as stocking density, mating ratio, and rearing type, were studied. Putting a single male in a colony cage with two to five females produces excellent fertility. However, increasing the group size may have an impact on bird wellbeing. Aggressive behaviors are the most common concern in colony cages, where a large number of male birds causes stress and aggressive pecking. In the quail industry, farmers frequently use medicinal plants to alleviate stress and boost fertility. The purpose of this research is to identify the most effective medicinal plants for improving quail fertility [Narinc et al., 2013].

**Effect of medicinal plants on the reproductive performance parameters:** Several medicinal plants have been evaluated to improve the reproductive performance of quail. Al-Shammari et al. [2019] studied how plant extracts including ginger, garlic, oregano, and cinnamon can affect the time it takes for Japanese quail to reach sexual maturity and the quality of their first eggs. The garlic-treated group produced considerably more eggs than the other groups over the first 2 weeks. Garlic and ginger were responsible for the heaviest eggs. Garlic eggs had the strongest shells. The use of medicinal herbs administered in-ovo has the potential to significantly alter both the time to sexual maturity and the quality of quail eggs. Another study investigated the effects of lead on quail reproduction and the role of *Yucca schidigera* extract (YSE) in lowering these effects. Lead reduced fertility and hatchability percentages, but YSE at both doses (100 and 200) enhanced fertility and

hatchability percentages to levels equivalent to controls [Alagawany et al., 2018]. The fertility of quail fed a 0.50 g/kg chamomile flower diet was greater than control group, this could be due to sperm concentration, motility, total motile sperm, live spermatozoa, and semen quality supplementation improving. Furthermore, the maximum hatchability level was 0.50 g/kg [El-Galil et al., 2010].

Herve et al. [2018] created a study to see how ginger (*Zingiber officinale*) essential oil can affect the histological structure of the testes and reproductive qualities in quail. In comparison to the control, the weight of the left testis increased significantly after the use of essential oil. In treated quail, the histological alterations in the testis were less noticeable. The essential oil of ginger rhizomes can be utilized in quail to lower lipid peroxidation in reproductive tissues and boost fertility. Mustafa & Abdullah [2020] investigated the effects of bay leaf powder and oil on male sperm characteristics, female reproductive attributes, plasma hormonal changes, and quail hatchability. Higher testis relative weight, gonadosomatic index, size area of cloaca gland, ejaculate volume, sperm concentration, mass motility, individual motility, live & normal morphology sperm, semen quality factor, seminal plasma testosterone, and LH hormones were found in quail males fed different levels of bay leaf (*Laurel nobilis L.*) and its oil as feed additives in quail diets. Egg production, egg weight, egg mass, eggshell strength, normal eggs for hatching, fertility, hatching of fertile and total eggs, weight of hatched chicks, and blood plasma estrogen, LH, and FSH hormone concentrations all improved in females. Ibrahim et al. [2018] looked at how adding Panax ginseng to the diets of laying quail can affect reproductive features. Panax ginseng dramatically boosted egg fertility and hatchability, as well as sperm motility and sperm-cell concentration, while dead spermatozoa, sperm abnormalities, and acrosomal damage in quails treated with Panax ginseng were significantly reduced. The effect of medicinal plants on the reproductive performance of quail is shown in **table**.

*Table*

**The effect of medicinal plants on the reproductive performance of quail**

Plant	Administration	Effect	Ref
<i>Yucca schidigera</i>	YSE (100-200 mg/kg) was added to the diet for 8 weeks.	The fertility and hatchability percentages were enhanced with YSE.	[ Alagawany et al., 2018]
<i>Matricaria chamomilla L.</i>	The powdered chamomile investigation lasted 22 weeks and employed at 0.25, 0.50, or 0.75 g/kg diet.	Sperm concentration, motility, live spermatozoa, and semen quality all improved at 0.50 g/kg.	[ El-Galil et al., 2010]
<i>Zingiber officinale</i>	Quail were intubated with 50, 100, and 150 µl/kg bw of ginger essential oil until they were 12 weeks old.	Ginger essential oil enhanced fertility by reducing lipid peroxidation in reproductive tissues.	[ Herve et al., 2018]

Ginger, Garlic, Oregano and Cinnamon	In ovo injection of 0.1mL each of aqueous extracts of ginger, garlic, oregano, and cinnamon.	In ovo injection influenced both the time of sexual maturity and the quality of the initial eggs of Japanese quail.	[ Al-Shammari et al., 2019]
<i>Laurel nobilis L.</i>	Quails were fed 1% and 2% bay leaf powder or 0.1 and 0.2 %bay leaf oil for eight weeks.	Bay leaf oil was more successful than bay leaf powder in improving male and female reproductive parameter.	[ Mustafa & Abdullah, 2020]
Panax Ginseng	From 7 to 22 weeks of age, the basal diet was supplemented with 0.5 g Panax ginseng /kg.	Quail reproductive performance improved considerably when given Panax ginseng (0.5 g/kg diet).	[ Ibrahim et al., 2018]

### Conclusion:

- Medicinal plants can be utilized successfully to boost quail fertility and reproductive performance.
- Ginger, garlic, oregano, cinnamon, chamomile, and Panax ginseng can all be used to help quail reproduce more effectively.

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## THE IMPACT OF MEDICINAL PLANTS ON THE PRODUCTIVITY OF QUAIL

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**Abstract:** Medicinal plants have a massive impact on poultry industry, enhancing performance, immunity, and lowering harmful microorganism proliferation. Research has shown that medicinal plants could be used as a future alternative to antibiotic growth promoters. The benefits of medicinal plants in quail feeding are discussed in this review.

**Keywords:** Quail- Productive performance- Medicinal plants.

**Introduction:** The poultry industry produces high-quality proteins for human nutrition as well as plays a significant role in economic growth. As a result, intense brooding systems are becoming more common in many countries. Eggs are regarded as one of the most important daily foods. Quail eggs can be used instead of chicken eggs to meet this demand, and despite their small size, they have significant nutritional advantages over chicken eggs since they are higher in protein, fat, vitamins, and minerals (iron, potassium, and zinc). Furthermore, it has been suggested that quail eggs are high in protein and low in fat and cholesterol. As a result, many people ingest quail eggs, particularly in Asian nations, because they are a good source of nutrients for human health and aid in the treatment of tuberculosis, bronchial asthma, and diabetes [Abou-Elkhair et al., 2020].

Unfortunately, the intensive brooding system puts quail under a lot of stress, lowering their livability and genetic performance. Some feed additives are thought to be able to reduce stress, enhance feed efficiency, and improve economic indicators in intensive systems. Antibiotics and other feed additives work through a variety of processes, one of which is the regulation of gut microbiota. However, using antibiotics as a feed supplement has significant drawbacks. Flavomycin intake, for example, caused DNA damage and elevated oxidative stress in quails. Antibiotics in quail feed can also increase the abdominal fat and raise the risk of heart disease in consumers. However, because the use of antibiotics in poultry feeding increases the