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Effect of Urtica Dioica and Camellia Sinensis on Rooster Reproductive and Testicular Traits

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ABSTRACT

This study aimed to investigate the effects of varying dosages of *Urtica dioica* (nettle) leaf powder and *Camellia sinensis* (white tea) powder on the reproductive and histological characteristics of rooster testes. Conducted at the College of Agriculture, Al-Qasim Green University, over a 42-day period, the experiment involved 21 roosters at 45 weeks of age, which were randomly assigned to seven treatment groups with three replicates each. The treatment groups included: a standard diet without any additives as the control; a standard diet supplemented with 100 mg/kg or 150 mg/kg of white tea powder; a standard diet supplemented with 100 mg/kg, 150 mg/kg, or 200 mg/kg of nettle leaf powder. The results demonstrated significant improvements in sperm concentration, osmotic resistance, ejaculate volume, and individual sperm motility in certain groups receiving white tea and nettle leaf powders.

Key words: Andrology, Antioxidants, Endocrinology, Fertility, Testosterone.

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INTRODUCTION

Histological changes during certain seasons because many wild bird species to undergo testicular regression, leading to a complete cessation of sperm production (Cīrule et al., 2017). In contrast, domestic birds have been selectively bred for traits such as meat production, and their testicular development is limited primarily by factors such as age and illness, rather than environmental influences (Wang & Ho, 2009). Since the number of fertilized eggs directly impacts the profitability of laying hens, the primary objective in poultry breeding is the production of fertilized eggs. Reduced fertility in broiler breeders, particularly after 50 weeks of age, results in significant economic losses in poultry production (Romero-Sanchez et al., 2008).Studies on aging domestic male birds have revealed a substantial decline in gonadotropic secretions and a reduction in the anterior pituitary gland's production and release of follicle-stimulating hormone (FSH) and luteinizing hormone (LH) (Scanes et al., 2020; Vizcarra et al., 2010).The utilization of naturally occurring plants rich in bioactive compounds has garnered interest for improving reproductive traits in poultry. Among these, nettle (*Urtica dioica*), a member of the Urticaceae family, is particularly noteworthy due to its diverse phytochemical profile, including polysaccharides, terpenoids, coumarins, and phenylpropanoids (Abed & Ali, 2022). Nettle has been shown to stimulate T lymphocytes, protect liver tissue from damage (Yener et al., 2009), and act as a potent antioxidant (Costa et al., 2002). Studies have also confirmed its ability to inhibit the conversion of testosterone into estrogen (Amills et al., 2003). Nettle and its extracts are considered among the safest natural remedies, with a wide range of therapeutic applications and no significant adverse effects (Chrubasik et al., 2007). Additionally, nettle roots contain bioactive compounds such as lectins (potent antivirals), scopoline, sterols, fatty acids,

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polysaccharides, and isolectins (Hajhashemi & Klooshani, 2013).White tea, derived from the youngest leaves of the *Camellia sinensis* plant before they fully mature, is a rare and valuable type of tea. The leaves are carefully harvested and allowed to dry naturally, preserving their bioactive compounds. White tea has been recognized for its ability to cool the body, stimulate mental alertness, and provide various health benefits due to its rich composition of flavonoids, particularly catechins. It also contains fluoride and several potent antioxidants, including polyphenols, caffeine, methylxanthine, theobromine, and tannic acid, along with vitamins E and C (Ekayanti et al., 2017; Koch, 2001). Furthermore, white tea is a source of manganese, which plays a critical role in protein digestion (Abbas et al., 2019; Botsoglou et al., 2004; Hamid et al., 2020).The aim of this study was to evaluate the effects of administering nettle (*Urtica dioica*) and white tea (*Camellia sinensis*) leaves on specific reproductive and histological characteristics of rooster testes. These plants were utilized to enhance the reproductive traits of roosters and broiler breeders, particularly to improve fertility (Duncan, 1955; El Sabry et al., 2021).

MATERIALS AND METHODS

This study was conducted at the College of Agriculture, Al-Qasim Green University, from April 10 to May 22, 2018, for a duration of 42 days. The experiment aimed to evaluate the effects of *Camellia sinensis* (white tea) powder and *Urtica dioica* (nettle) leaf powder on specific reproductive and histological characteristics of the testes in 21 roosters aged 45 weeks. The birds were randomly assigned to seven treatments, with each treatment consisting of three replicates, and one rooster per replicate.The treatment groups were as follows: the control group received a standard diet without any supplementation, while Treatment 2 was supplemented with 100 mg of white tea powder per kilogram of feed, Treatment 3 with 150 mg of white tea powder per kilogram of feed, and Treatment 4 with 200 mg of white tea powder per kilogram of feed. Similarly, Treatment 5 was supplemented with 100 mg of nettle leaf powder per kilogram of feed, Treatment 6 with 150 mg of nettle leaf powder per kilogram of feed, and Treatment 7 with 200 mg of nettle leaf powder per kilogram of feed. The feed composition was formulated according to the nutritional guidelines provided in the broiler breeder manual (Khan et al., 2012).The study focused on several reproductive and testicular characteristics, including ejaculate volume, sperm concentration, sperm motility, sperm resistance to salt, the percentage of dead sperm, and histological traits of the testes. Tables 1 and 2 show detailed information on the active compounds found in white tea and nettle. Throughout the study, the birds were exposed to a photoperiod of 14 hours of light per day.

Semen Collection and Analysis

Semen was collected from the roosters weekly over six weeks using the method described by Yener et al. (2009). Microtubes were used for semen collection. Sperm motility was assessed by diluting a 10-microliter semen sample in sodium citrate solution (1:20 dilution). The sample was incubated at 37 °C, placed on a glass slide, covered with a slide cover, and examined under a light microscope equipped with a camera. Individual sperm motility was evaluated at 40× magnification, while collective sperm motility was assessed at 10× magnification (AAK Al-Salhi, 2020; El-Katcha et al., 2014).

Dead Sperm Estimation: A 10-microliter drop of eosin dye was mixed with an equal volume of semen. The mixture was smeared on a glass slide using another slide at a 45-degree angle. Dead and live sperm were differentiated under a microscope, and 200 sperm were counted per sample in duplicate (Jagadeeswaran, 2014).

Sperm Concentration: Sperm concentration was determined using a hemocytometer according to standard procedures.

Histological Examination: Testicular tissues were processed and sectioned for histological examination following the methods described in the literature (Ekayanti et al., 2017; Kuhn et al., 2004; Türkdoğan et al., 2003).

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Table 1. Assessment of Biochemical Components of White Tea (Chrubasik et al., 2007)

Biochemical Components	White tea (Methanolic)	White tea (Aqueous)
Total Polyphenols (%)	35±.01	29±.01
Catechins (%)	19±.01	13±.01
Total Flavonoids (gm/100gm)	5±.001	1±.001
Caffeine (gm/100gm)	4.8±.01	3.9±.01
Tannins (%w/w)	11±.001	9±.001

Table 2. Assessment of Biochemical Components of Urtica dioica (SPSS Inc., 2008)

Biochemical Components	ml/Mg
Flavonoids	0.2993
Saponins	3.826
Phenols	.8160
Tannins	0.773
Steroids	0.5415
Turbines	0.7891

The effect of various treatments on the traits under investigation was analyzed using a completely randomized design (CRD). Significant differences among the means were determined using Duncan's multiple range test (Duncan, 1955). All experimental data were statistically analyzed using the SPSS software package, as outlined in the user's guide (SPSS Inc., 2008).

RESULTS AND DISCUSSION

Table 3 presents the effects of varying dosages of white tea powder and nettle leaves on selected reproductive traits of broiler breeder roosters. The findings indicate that the fourth, fifth, sixth, and seventh treatments significantly outperformed the other experimental groups in terms of individual sperm motility, with highly significant differences observed (P <0.01). However, there was no significant difference in individual sperm motility between the sixth treatment and the fourth, fifth, or seventh treatments. Additionally, no discernible difference was observed between the third and sixth treatments (SPSS Inc., 2008). Table 3 also shows that there was no significant difference in collective sperm motility between the fourth and fifth treatments or between the sixth and seventh treatments. Moreover, the third treatment did not differ significantly from the other experimental treatments. Notably, the fourth and fifth treatments demonstrated significant superiority (P <0.01) over the other treatments in terms of collective sperm motility. Regarding sperm mass migration, the sixth and seventh treatments were particularly noteworthy, demonstrating significantly better results compared to the control group and other treatments.In contrast, the control and second treatments showed significantly higher percentages of sperm death compared to the other experimental treatments (P <0.01). However, all experimental treatments exhibited significant improvements in reducing sperm death rates compared to the control group (P <0.01). For sperm resistance to salt, the third, fourth, fifth, and seventh treatments significantly outperformed the control group (P <0.01). Meanwhile, the second and sixth treatments did not exhibit significant differences from each other. Regarding sperm concentration, the fourth treatment demonstrated significant superiority over the control group (P <0.01), while it did not differ significantly from the second, fifth, sixth, or seventh treatments (Saffari & Sadrzadeh, 2004; Spinaci et al., 2018).The superiority of nettle leaf and white tea treatments in most semen characteristics can be attributed to their biologically active compounds with potent antioxidant properties, particularly flavonoids. These compounds prevent the formation of free radicals, thereby preserving the properties of semen and protecting sperm from damage and death. Consequently, these treatments significantly reduce the percentage of dead sperm and enhance overall semen quality (Mostafa et al., 2019; Saffari & Sadrzadeh, 2004; Spinaci et al., 2018).In the second treatment, only 25% of the seminiferous tubules reached the stage of completion in the sperm biosynthesis process, as observed in the histological section presented in the figure. The diameter of the seminiferous tubules was relatively smaller compared to the other treatments. The tubule walls exhibited normal integrity, without any signs of thickening or damage, and both

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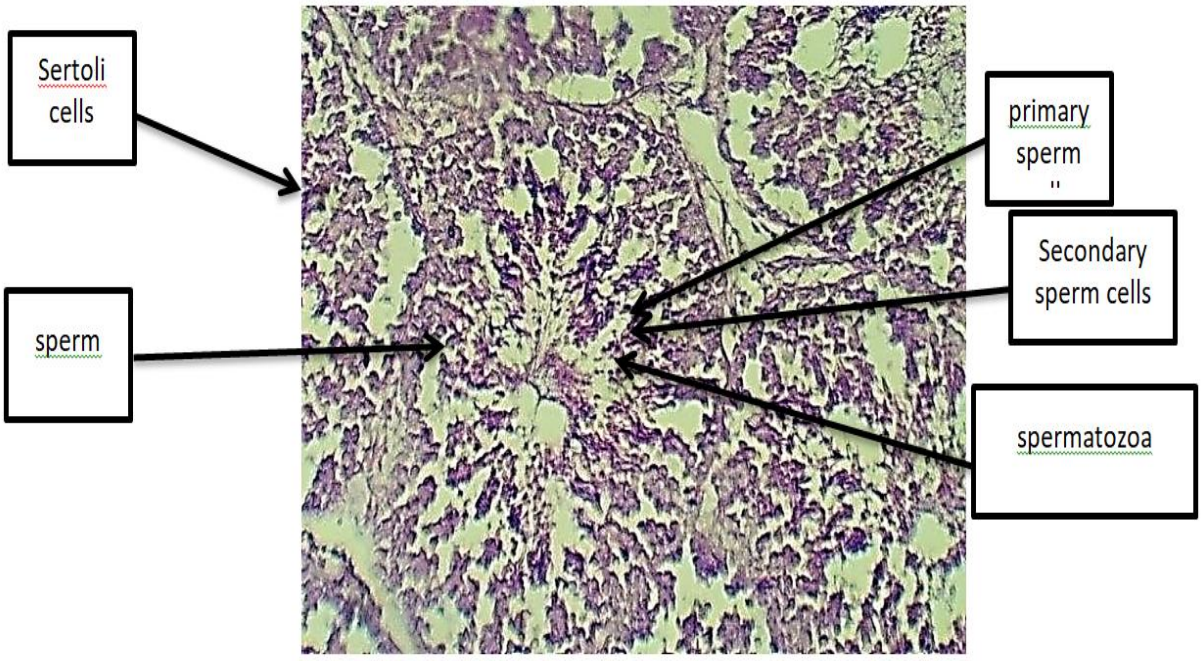
Sertoli cells and spermatogenic cells appeared normal. The process of spermatogenesis, which involves the formation of primary and secondary sperm cells, proceeded without abnormalities in this treatment (Gargi et al., 2017; Giannenas et al., 2003).

Table 3. The effect of adding different levels of white tea powder and nettle leaf on the semen characteristics of broiler mother's roosters.

Treatments	Sperms Conc. (× 10⁹)	Salt of Resistance (%)	Live Sperms (%)	Death Sperms (%)	Collective Movement (%)	Individual Movement (%)
t1	3.050 ± 0.39 B	73.025 ± 1.80 B	81.615 ± 1.29 C	18.380 ± 1.28 A	77.180 ± 0.52 C	74.970 ± 0.47 C
t2	3.435 ± 0.15 AB	76.915 ± 0.47 AB	85.220 ± 0.78 B	14.780 ± 0.77 B	78.165 ± 0.28 C	76.770 ± 1.10 C
t3	3.720 ± 0.39 AB	78.780 ± 0.46 A	90.210 ± 1.67 A	9.785 ± 1.66 C	80.045 ± 0.28 BC	77.045 ± 0.71 BC
t4	4.215 ± 0.22 A	80.075 ± 0.42 A	91.720 ± 0.62 A	8.280 ± 0.62 C	88.320 ± 0.44 A	81.655 ± 0.89 A
t5	3.550 ± 0.19 AB	79.020 ± 1.31 A	90.910 ± 1.02 A	9.090 ± 1.02 C	87.315 ± 0.32 A	80.270 ± 0.29 A
t6	2.945 ± 0.06 B	76.335 ± 1.78 AB	89.540 ± 0.90 A	10.460 ± 0.90 C	84.570 ± 3.83 AB	79.940 ± 1.61 AB
t7	3.530 ± 0.03 AB	79.275 ± 0.94 A	90.175 ± 0.62 A	9.825 ± 0.62 C	85.220 ± 0.34 AB	81.270 ± 0.40 A

NS : Nonsignificant. *P≤0.05 ** P≤0.01



Slide 1 . shows a histological slice of the testis treated with T2.

The slides reveals that 60% of the seminiferous tubules reached an advanced stage in the sperm synthesis process. The tubule diameter was larger compared to the second treatment, and the tubule walls remained intact, showing no signs of thickening or damage. Additionally, both Sertoli cells and Leydig cells appeared normal, indicating proper functioning and structural integrity (Jaiswal & Lee, 2022; National Research Council, 1994) .

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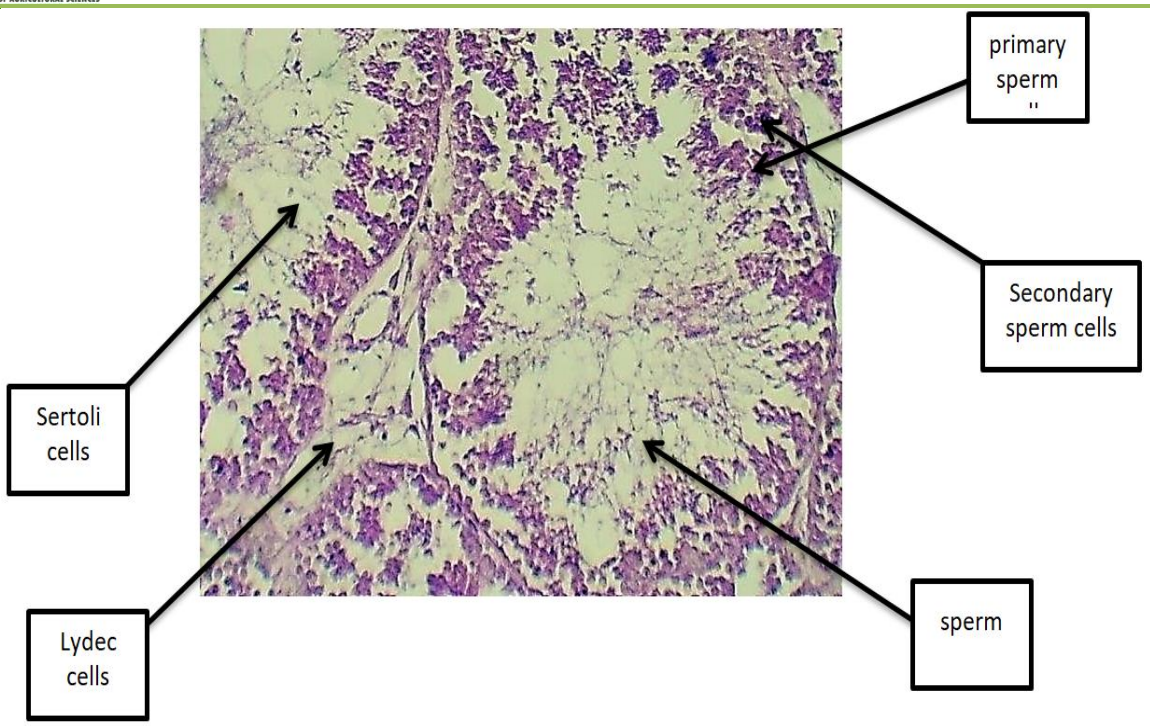
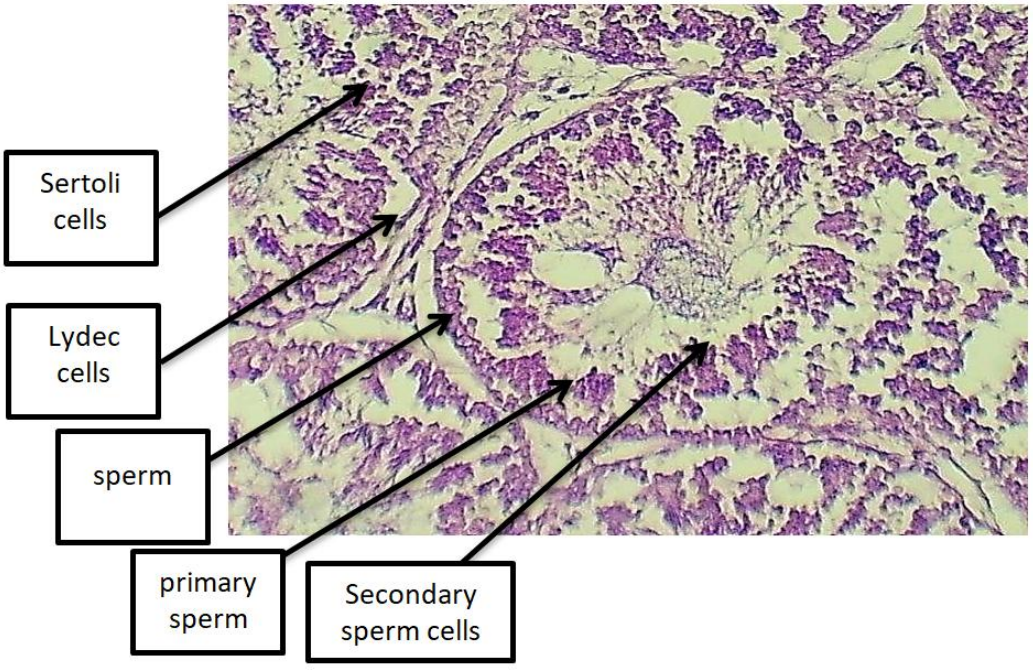


Slide 2. Histological section of the T3-treated testicle

The histological section demonstrates that 60% of the seminiferous tubules have progressed to the stages of sperm production, with their diameters matching those observed in the control treatment (Chen et al., 2022; National Research Council, 1994)



Slide 3. Histological analysis of the testicle treated with T4

The histological section shows that approximately 65% of the seminiferous tubules have reached the stage of complete sperm synthesis. The tubule diameter is comparable to that observed in the fourth treatment and the control group. The tubule walls exhibit no thickening or damage, and both Sertoli cells and Leydig cells appear normal (Cabrera et al., 2006; Scanes et al., 2020; Yesilbag & Colpan, 2006).

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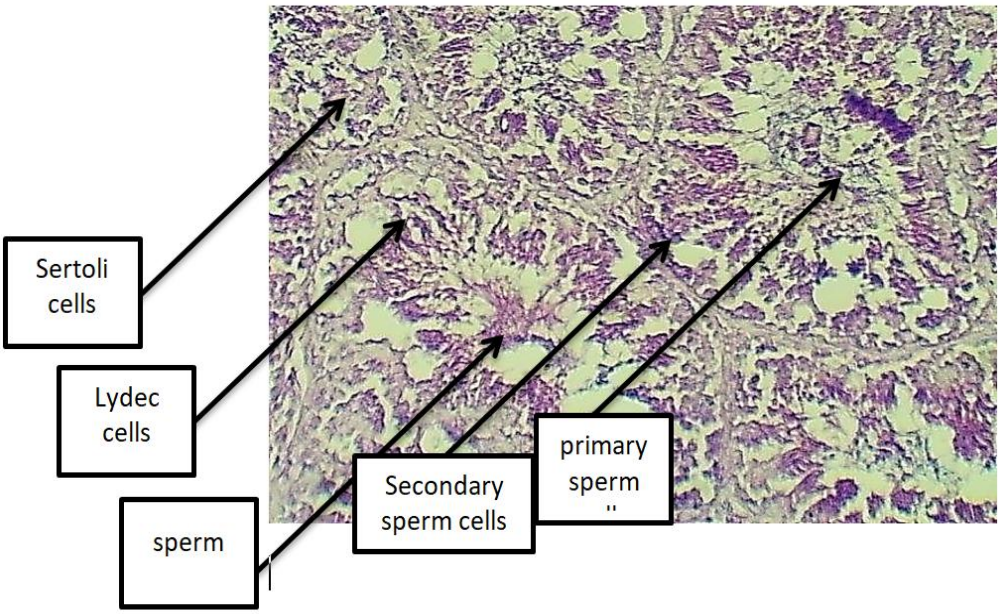
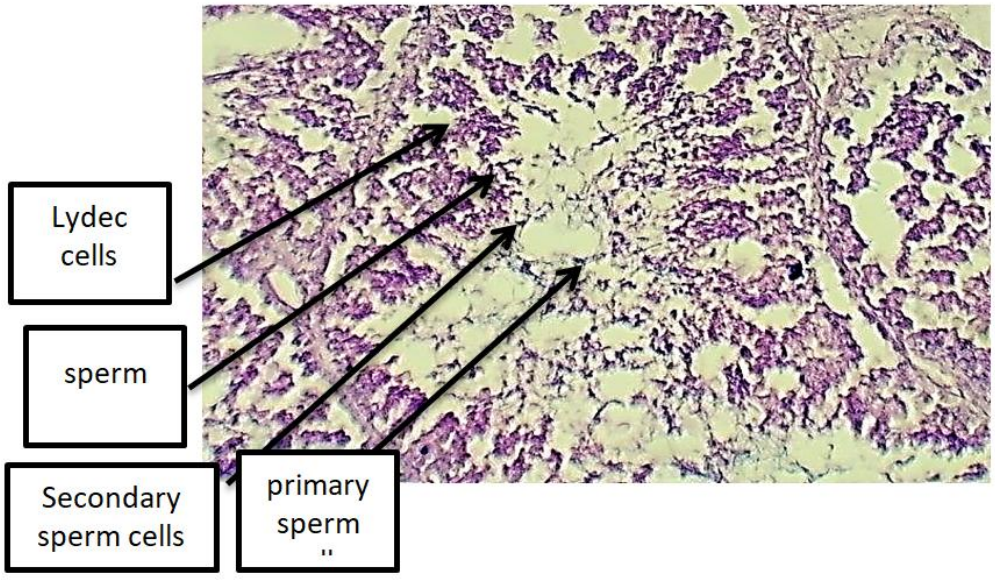


Slide 4. Histological section of the T5-treated testicle

The histological section indicates that approximately 75% of the seminiferous tubules have reached the stage of complete sperm synthesis. The diameter of the seminiferous tubules is larger in the fourth and fifth treatments compared to the control group. Additionally, both Sertoli cells and Leydig cells appear normal (Cabrera et al., 2006; Capcarova et al., 2014; Friedman, 2007).



Slide 5. Histological section of the T6 treated testicle

The histological section indicates that approximately 75% of the seminiferous tubules have reached the stage of complete sperm synthesis. The diameter of the seminiferous tubules is larger in the fourth and fifth treatments compared to the control group. Additionally, both Sertoli cells and Leydig cells appear normal (Cabrera et al., 2006; Capcarova et al., 2014; Friedman, 2007).

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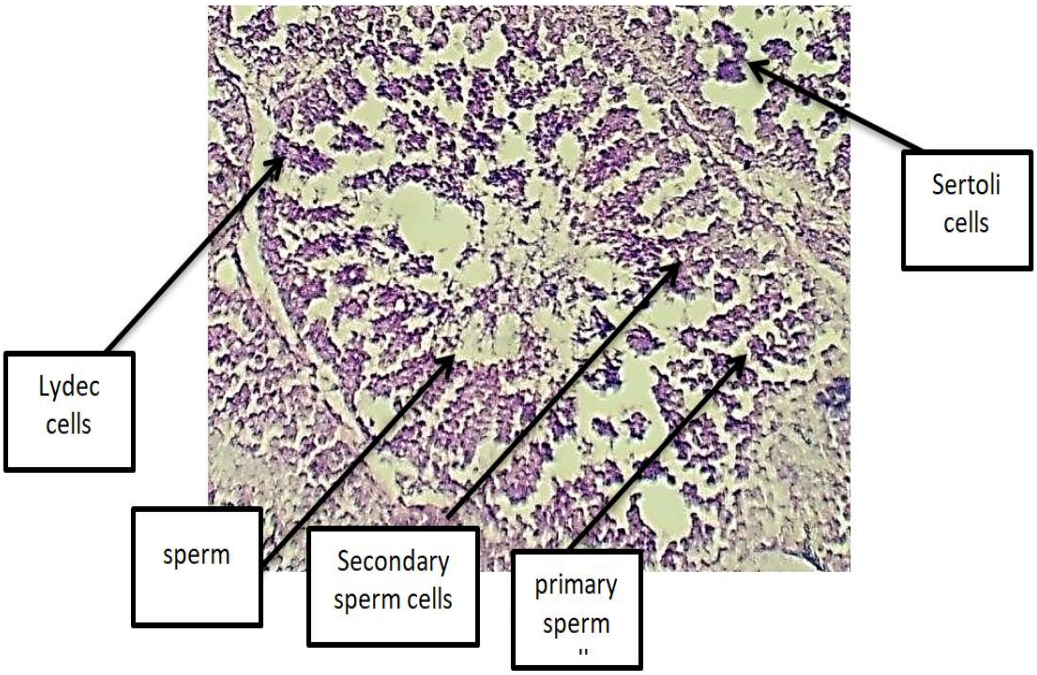

Slide 6. Histological section of the testis treated as control

The addition of nettle leaves and white tea, which contain active ingredients that enhance sperm production, resulted in significant improvements in testicular tissue in the treated groups (National Research Council, 1994; Rahim et al., 2013; Romero-Sanchez et al., 2008).The findings further demonstrated that the observed enhancements in seminiferous tubule tissue characteristics and daily sperm production can be attributed to elevated testosterone levels and improved efficiency of Sertoli cells (Adnan et al., 2013; Akdemir et al., 2012; Al-Salhie et al., 2021).

CONCLUSION

In conclusion, dietary supplementation with nettle leaf (*Urtica dioica*) or white tea (*Camellia sinensis*) powder significantly improves semen quality and testicular histology in broiler breeder roosters. These natural additives effectively enhance sperm motility, concentration, and viability while stimulating advanced stages of spermatogenesis. Driven by their rich bioactive and antioxidant compounds, these plants protect sperm from oxidative damage and support the functional integrity of Sertoli and Leydig cells. Therefore, introducing nettle or white tea into poultry diets serves as a safe and efficient nutritional strategy to sustain high fertility rates in breeder flocks.

CONFLICT OF INTEREST

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

REFERENCES

AAK Al-Salhi. (2020). Effect of using water extract of nettle leaf (Urtica dioica) on some microbial characteristics of broiler chickens. University of Thi-Qar Journal of Agriculture Research, 9(1), 13–23. https://doi.org/10.54174/UTJagr.Vo9.N1/02

Abbas, F. R., Ali, N. A. L., Abdul-Jabar, I., & Al-Nassry, A. S. (2019). Effect of adding white tea powder (Camellia sinensis) to the Japanese quail (Coturnix coturnix japonica) birds rations in some traits of blood biochemical and liver enzymes. Advances in Animal and Veterinary Sciences, 7(3), 205–209. https://dx.doi.org/10.17582/journal.aavs/2019/7.3.205.209

Abed, R. J., & Ali, N. A. (2022). Effect of supplementation of different levels of Urtica dioica seeds to the diet on the immune response and microbial composition of the gastrointestinal tract of broiler chickens. Animal Research International, 19(2), 4522–4531. https://doi.org/10.22092/ari.2022.358133.2159

Adnan, M., Ahmad, A., & Ahmed, A. (2013). Chemical composition and sensory evaluation of tea (Camellia sinensis) commercialized in Pakistan. Pakistan Journal of Botany, 45(3), 901–907. https://hdl.handle.net/10536/DRO/DU:30086072

Aggrey, S. E., Yao, J., Sabour, M. P., Lin, C. Y., Zadworny, D., Hayes, J. F., & Kuhnlein, U. (2004). Markers within the insulin-like growth factor I and II genes and their association with growth and carcass traits in chickens. Poultry Science, 83(12), 1944–1948. https://doi.org/10.1093/ps/83.12.1944

Akdemir, F., Sahin, N., Orhan, C., Tuzcu, M., Sahin, K., & Hayirli, A. (2012). Genistein supplementation improves reproductive performance and serum hormone profiles in Japanese quail. Poultry Science, 91(10), 2629–2634. https://doi.org/10.3382/ps.2012-02404

Al-Obaidi, F. A., & Al-Rubaiey, M. G. (2010). Effect of experimentally infecting layers with Listeria monocytogenes on some blood features. The Iraqi Journal of Veterinary Medicine, 34(1), 1–8. https://doi.org/10.30539/iraqijvm.v34i1.653

Al-Salhie, K. C. K., Al-Hummod, S. K. M., & Al-Saadi, A. H. J. (2021). Effects of eggshell characteristics and egg weight on hatchability and chick quality traits in Japanese quail (Coturnix coturnix japonica). Archives of Razi Institute, 76(5), 1327–1335. https://doi.org/10.22092/ARI.2021.355852.1846

Alvarado, C. Z., & Sams, A. R. (2004). Early postmortem injection and aging effects on broiler breast meat tenderness. Poultry Science, 83(6), 1035–1038. https://doi.org/10.1093/ps/83.6.1035

Amills, M., Jiménez, N., Villalba, D., Tor, M., Molina, E., Cubiló, D., Marcos, C., Francesch, A., Sánchez, A., & Estany, J. (2003). Identification of three single nucleotide polymorphisms in the chicken insulin-like growth factor 1 and 2 genes and their associations with growth and feeding traits. Poultry Science, 82(10), 1485–1493. https://doi.org/10.1093/ps/82.10.1485

Botsoglou, N. A., Christaki, E., Florou-Paneri, P., Giannenas, I., Papageorgiou, G., & Spais, A. B. (2004). The effect of a mixture of herbal essential oils on performance characteristics and oxidative stability of Japanese quail. Poultry Science, 83(4), 618–624. https://doi.org/10.1093/ps/83.4.618

Bursill, C., Roach, P. D., Bottema, C. D., & Pal, S. (2001). Green tea upregulates the low-density lipoprotein receptor through the sterol-regulated element binding protein in HepG2 liver cells. Journal of Agricultural and Food Chemistry, 49(11), 5639–5645. https://doi.org/10.1021/jf010275d

Cabrera, C., Reyes, R., & Olmedo, F. (2006). Beneficial effects of green tea—A review. Journal of the American College of Nutrition, 25(2), 79–99. https://doi.org/10.1080/07315724.2006.10719518

Capcarova, M., Kalafova, A., Hrncar, C., Kopecky, J., & Weis, J. (2014). Comparative analysis of acetic and citric acid on internal milieu of broiler chickens. Potravinarstvo Slovak Journal of Food Sciences, 8(1), 190–195. https://doi.org/10.5219/379

Chen, H., Yu, C., Wu, H., Li, G., Li, C., Hong, W., Yang, X., Wang, H., & You, X. (2022). Recent advances in histidine kinase-targeted antimicrobial agents. Frontiers in Chemistry, 10, Article 866392. https://doi.org/10.3389/fchem.2022.866392

Chrubasik, J. E., Roufogalis, B. D., Wagner, H., & Chrubasik, S. (2007). A comprehensive review on the stinging nettle effect and efficacy profiles. Part II: Urticae radix. Phytomedicine, 14(7–8), 568–579. https://doi.org/10.1016/j.phymed.2007.03.014

Cīrule, D., Krama, T., Krams, R., Elferts, D., Kaasik, A., Rantala, M. J., Mierauskas, P., Luoto, S., & Krams, I. A. (2017). Habitat quality affects stress responses and survival in a bird wintering under extremely low ambient temperatures. The Science of Nature, 104(11–12), Article 99. https://doi.org/10.1007/s00114-017-1519-8

Costa, L. M., Gouveia, S. T., & Nóbrega, J. A. (2002). Comparison of heating extraction procedures for Al, Ca, Mg, and Mn in tea samples. Analytical Sciences, 18(3), 313–318. https://doi.org/10.2116/analsci.18.313

Duncan, D. B. (1955). Multiple range and multiple F tests. Biometrics, 11(1), 1–42. https://doi.org/10.2307/3001478

Ekayanti, M., Ardiana, L., Najib, S. Z., Sauriasari, R., & Elya, B. (2017). Pharmacognostic and phytochemical standardization of white tea leaf (*Camellia sinensis* L. Kuntze) ethanolic extracts. Pharmacognosy Journal, 9(2), 221–226. https://doi.org/10.5530/pj.2017.2.37

El Sabry, M. I., Yalçın, S., & Turgay-Izzetoğlu, G. (2021). Effect of drinking water quality on growth performance, blood parameters and intestinal microbiota of Japanese quail. Animals, 11(5), Article 1327. https://doi.org/10.3390/ani11051327

El-Katcha, M. I., Soltan, M. A., El-Naggar, K., & Karwarie, E. R. (2014). Growth performance, blood biochemical changes, immune response and carcass traits of broiler chicks fed on graded levels of fenugreek seeds. Alexandria Journal of Veterinary Sciences, 41(1), 28–37. https://doi.org/10.5455/ajvs.155355

Friedman, M. (2007). Overview of antibacterial, antitoxin, antiviral, and antifungal activities of tea flavonoids and teas. Molecular Nutrition & Food Research, 51(1), 116–134. https://doi.org/10.1002/mnfr.200600173

Gargi, S., Sudeshna, S. C., Biswajit, B., & Mohan Kumar, P. (2017). Biochemical and microbiological characterization of white tea. IOSR Journal of Environmental Science, Toxicology and Food Technology, 11(5), 74–80. https://doi.org/10.9790/2402-1105037480

Giannenas, I., Florou-Paneri, P., Papazahariadou, M., Christaki, E., Botsoglou, N. A., & Spais, A. B. (2003). Effect of dietary supplementation with oregano essential oil on performance of broilers after experimental infection with Eimeria tenella. Archives of Animal Nutrition, 57(2), 99–106. https://doi.org/10.1080/0003942031000107299

Gulcin, I., Küfrevioglu, Ö. I., Oktay, M., & Buyukokuroglu, M. E. (2004). Antioxidant, antimicrobial, antiulcer, and analgesic activities of nettle (Urtica dioica L.). Journal of Ethnopharmacology, 90(2–3), 205–215. https://doi.org/10.1016/j.jep.2003.09.028

Hajhashemi, V., & Klooshani, V. (2013). Antinociceptive and anti-inflammatory effects of Urtica dioica leaf extract in animal models. Avicenna Journal of Phytomedicine, 3(2), 193–200.

Hamid, A. F., El-Gendi, G. M., Nihad, A. A., & El-Garhy, O. H. (2020). Effect of adding white tea leaves powder (Camellia sinensis) to broiler chicken diets on some biochemical blood parameters. Annals of Agricultural Science, Moshtohor, 58(4), 941–948. https://doi.org/10.21608/assjm.2020.147930

Hosseini-Vashan, S. J., Golian, A., Yaghobfar, A., Zarban, A., Afzali, N., & Esmaeilinasab, P. (2012). Antioxidant status, immune system, blood metabolites and carcass characteristics of broiler chickens fed turmeric rhizome powder under heat stress. African Journal of Biotechnology, 11(94), 16118–16125. https://doi.org/10.5897/AJB12.2196

Jagadeeswaran, A. (2014). Growth promoting potentials of indigenous drugs in broiler chicken. International Journal of Advanced Veterinary Science and Technology, 3(1), 93–98. https://doi.org/10.23953/cloud.ijavst.191

Jaiswal, V., & Lee, H. J. (2022). Antioxidant activity of Urtica dioica: An important property contributing to multiple biological activities. Antioxidants, 11(12), Article 2494. https://doi.org/10.3390/antiox11122494

Khan, R. U., Naz, S., Nikousefat, Z., Tufarelli, V., & Laudadio, V. (2012). Potential applications of ginger, turmeric and chamomile in poultry diets: A review. World's Poultry Science Journal, 68(2), 245–252. https://doi.org/10.1017/S0043933912000288

Koch, E. (2001). Extracts from fruits of saw palmetto (Sabal serrulata) and roots of stinging nettle (Urtica dioica): Viable alternatives in the medical treatment of benign prostatic hyperplasia and associated lower urinary tract symptoms. Planta Medica, 67(6), 489–500. https://doi.org/10.1055/s-2001-16496

Kuhn, D. J., Burns, A. C., Kazin, A., & Dou, Q. P. (2004). Direct inhibition of the ubiquitin-proteasome pathway by ester bond-containing green tea polyphenols is associated with increased expression of sterol regulatory element-binding protein 2 and LDL receptor. Biochimica et Biophysica Acta (BBA) - Molecular and Cell Biology of Lipids,

1682(1–3), 1–10. https://doi.org/10.1016/j.bbalip.2003.12.006

Mostafa, S. A., Elsyed, I. E., Hassan, A., & Hassan, A. M. (2019). Effect of vitamin E-selenium supplementation on some semen quality traits of Muscovy drakes. Arab Universities Journal of Agricultural Sciences, 27(2), 1627–1636. https://doi.org/10.21608/ajs.2019.12254.1022

National Research Council. (1994). Nutrient requirements of poultry (9th rev. ed.). National Academy Press. Rahim, S. M., Taha, E. M., Mubarak, Z. M., Aziz, S. S., Simon, D. K., & Mazlan, A. G. (2013). Protective effect of Cymbopogon citratus on hydrogen peroxide-induced oxidative stress in the reproductive system of male rats. Systems Biology in Reproductive Medicine, 59(6), 329–336. https://doi.org/10.3109/19396368.2013.827268

Romero-Sanchez, H., Plumstead, P. W., Leksrisompong, N., Brannan, K. E., & Brake, J. (2008). Feeding broiler breeder males: 4. Deficient feed allocation reduces fertility and broiler progeny body weight. Poultry Science, 87(4), 805–811. https://doi.org/10.3382/ps.2007-00285

Saffari, Y., & Sadrzadeh, S. M. (2004). Green tea metabolite EGCG protects membranes against oxidative damage in vitro. Life Sciences, 74(12), 1513–1518. https://doi.org/10.1016/j.lfs.2003.08.019

Scanes, C. G., Butler, L. D., & Kidd, M. T. (2020). Reproductive management of poultry. In Animal Agriculture (pp. 349–366). Academic Press. https://doi.org/10.1016/B978-0-12-817052-6.00020-3

Spinaci, M., Muccilli, V., Bucci, D., Cardullo, N., Gadani, B., Tringali, C., Tamanini, C., & Galeati, G. (2018). Biological effects of polyphenol-rich extract and fractions from an oenological oak-derived tannin on in vitro swine sperm capacitation and fertilizing ability. Theriogenology, 108, 284–290. https://doi.org/10.1016/j.theriogenology.2017.12.015

SPSS Inc. (2008). SPSS statistics base 17.0 user's guide. SPSS Inc.

Türkdoğan, M. K., Ozbek, H., Yener, Z., Tuncer, I., Uygan, I., & Ceylan, E. (2003). The role of Urtica dioica and Nigella sativa in the prevention of carbon tetrachloride-induced hepatotoxicity in rats. Phytotherapy Research, 17(8), 942–946. https://doi.org/10.1002/ptr.1266

Unachukwu, U. J., Ahmed, S., Kavalier, A., Lyles, J. T., & Kennelly, E. J. (2010). White and green teas (Camellia sinensis var. sinensis): Variation in phenolic, methylxanthine, and antioxidant profiles. Journal of Food Science, 75(6), C541–C548. https://doi.org/10.1111/j.1750-3841.2010.01705.x

Vizcarra, J. A., Kirby, J. D., & Kreider, D. L. (2010). Testis development and gonadotropin secretion in broiler breeder males. Poultry Science, 89(2), 328–334. https://doi.org/10.3382/ps.2009-00286

Wang, H., Provan, G. J., & Helliwell, K. (2000). Tea flavonoids: Their functions, utilization and analysis. Trends in Food Science & Technology, 11(4–5), 152–160. https://doi.org/10.1016/S0924-2244(00)00061-3

Wang, Y., & Ho, C. T. (2009). Polyphenolic chemistry of tea and coffee: A century of progress. Journal of Agricultural and Food Chemistry, 57(18), 8109–8114. https://doi.org/10.1021/jf804025c

Yener, Z., Celik, I., Ilhan, F., & Bal, R. (2009). Effects of Urtica dioica L. seed on lipid peroxidation, antioxidants, and liver pathology in aflatoxin-induced tissue injury in rats. Food and Chemical Toxicology, 47(2), 418–424. https://doi.org/10.1016/j.fct.2008.11.031

Yesilbag, D., & Colpan, I. (2006). Effects of organic acid supplemented diets on growth performance, egg production and quality, and on serum parameters in laying hens. Revue de Médecine Vétérinaire, 157(5), 280–284. https://www.revmedvet.com/2006/RMV157_280_284.pdf

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تأثير نبات القراص والشاي الأبيض على الصفات التناسلية والنسيجية لخصى الديوك

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المستخلص

هدفت الدراسة إلى التحقيق في تأثير الجرعات المختلفة من مسحوق أوراق نبات القراص (*Urtica dioica*) ومسحوق شاي الكاميليا الأبيض (*Camellia sinensis*) على الخصائص الإنجابية والهستولوجية في خصى الديوك. أُجريت التجربة في كلية الزراعة بجامعة القاسم الخضراء على مدى 42 يومًا، حيث شملت 21 ديكًا بعمر 45 أسبوعًا تم توزيعها عشوائيًا على سبع مجموعات علاجية، مع ثلاث مكررات لكل مجموعة. شملت المعالجات نظامًا غذائيًا قياسيًا بدون إضافات (مجموعة السيطرة)، ونظامًا غذائيًا قياسيًا مضافًا إليه 100 ملغم/كغم أو 150 ملغم/كغم من مسحوق شاي الكاميليا الأبيض، ونظامًا غذائيًا قياسيًا مضافًا إليه 100 ملغم/كغم، 150 ملغم/كغم، أو 200 ملغم/كغم من مسحوق أوراق نبات القراص. أظهرت النتائج تحسنًا ملحوظًا في تركيز الحيوانات المنوية، مقاومة الإجهاد الأسموزي، حجم السائل المنوي، والحركة الفردية للحيوانات المنوية في بعض المعالجات التي تضمنت مسحوق شاي الكاميليا الأبيض ومسحوق نبات القراص. خلصت الدراسة إلى أن إدخال أوراق نبات القراص وشاي الكاميليا الأبيض المطحونة ضمن النظام الغذائي يعزز بعض الخصائص الهستولوجية لخصى الديوك ويحسن جودة السائل المنوي.

الكلمات المفتاحية: علم الذكورة، مضادات الأكسدة، علم الغدد الصماء، الخصوبة، التستوستيرون.