

**Indian Farmer**

Volume 10, Issue 08, 2023, Pp. 383-384
 Available online at: www.indianfarmer.net
 ISSN: 2394-1227 (Online)

Original Article**Herbal enriched eggs****Dr. P. Radhika***PhD scholar, Poultry science, College of Veterinary Science, Hyderabad, Telangana.**Corresponding author email: radhikapappula9@gmail.com**Received: 02/08/2023**Published: 13/08/2023***Introduction**

Poultry industry is the fastest growing sector in India among other agro-based industries due to increasing demand for egg and poultry meat. Not only because they provide high quality protein but also are less expensive when compared to other animal protein sources. In the past decade, enrichment of food products is gaining importance among health-conscious consumers to promote their health. Further, research priority in poultry nutrition has been diversified into the field of enriching or fortifying eggs with certain nutrients of consumer's choice at pre-oviposition and pre-slaughter stage itself based on the basic concept that eggs accumulate nutrients if hens are subject to dietary and nutritional manipulations (Sujatha and Narahari, 2011). Consumers are always in search of newer products and are driving the market for a new category of food with potential health benefits well beyond those traditionally recognized.

"Designer eggs" are those in which the content has been modified from the standard egg (Bhat *et al.*, 2013). Eggs are the most excellent vehicles to incorporate several health-promoting components in it (Singh and Neelam, 2010). Eggs can be modified for: Cholesterol content, Fatty acid profile: n-3 fatty acids, Vit. E, Vit. D, Folic acid, Minerals – Fe, Zn, Se, I & Cr, Carotenoids, lutein and Herbal enrichment. Recent trend in fortification of poultry products is enrichment with natural antioxidants through herbal feed additives since consumer's preferences for natural organic products in their food are increasing.

Herbal enriched eggs:

Herbal enriched eggs can be produced by the incorporation of herbal active principles like, allicin, betaine, eugenol, lumiflavin, lutein, sulforaphane, taurine and many more active principles of the herbs, depending upon the herbs fed to the hens. Herbs are being considered as an essential part of traditional medicine due to their phyto-constituent substances. The performance of poultry species could be improved by the use of products of herbal plants as additives in their rations. And among consumers, as safe and natural feed additives, herbal and phyto-genic products are more reliable and acceptable. Also, herbs, fruits and vegetables are becoming popular due to their low toxicity, fewer side effects and other beneficial advantages for safeguarding the health (Table 1).

Table 1: Active ingredients present in herbal enriched eggs and their beneficial effects on human health (Narahari *et al.*, 2004)

Herbs	Principle active ingredients	Benefits relation to human health
Garlic, onion & their leaves	Allicin, allylic sulfide	Lower LDL cholesterol & anticarcinogenic
Spirulina, marigold petals, alfalfa, red pepper	Carotenoid pigments	Antioxidant and anticarcinogenic
Basil leaves	Eugenol, eugenic acid	Immunomodulator
Turmeric powder	Flavonoid compounds	Antimicrobial and antioxidant
Bay leaves	Lutein	Antioxidants improve vision
Fenugreek	Quercetin, luteolin, diogenin, citogenin	Induces insulin, antimicrobial & tonic activity
Tomato pomace, grape pulp	Lycopene	Decreases LDL (bad) cholesterol, antioxidant, anticarcinogenic
Citrus pulp	Nirangenin	Diminish LDL cholesterol

Studies showed that active ingredients of some plants have strong antioxidative effects including neutralization of superoxide, hydrogen peroxide and nitric oxide either by scavenging for radicals or by increasing the production of superoxide dismutase (SOD) and glutathione peroxidase (GPx). Marigold petal meal and its residue are good sources of xanthophylls to be used in layer diets as egg yolk pigmenting agents (Navya *et al.*, 2020). Similarly, Basil leaf meal appeared to be a good feed supplement for increasing the yolk α -linolenic acid level by reducing the yolk saturated fatty acid levels proportionately (Kirubakaran *et al.*, 2011). Narahari *et al.* (2003) also concluded that a combination of oil-rich fish and flaxseed, spirulina, and basil leaf meal enhanced the yolk n-3 fatty acid levels considerably. Also, supplementation of garlic, fenugreek seed and bay leaves in layer feed has subsequently reduced the yolk cholesterol and increased the levels of carotenoids, vitamin E and selenium in the yolk (Raj *et al.*, 2013). Accordingly, various studies were conducted to enrich eggs with herbs including turmeric, hemp seed, ginger, moringa leaves and mint leaves and observed increased omega 3 and 6 levels in yolk and increased antioxidant enzymes in the egg yolk (Raza *et al.*, 2016, Daramola *et al.*, 2018 and Devi *et al.*, 2018). Concluding that these super eggs exhibit lower LDL cholesterol, immunomodulatory action, antioxidant, anticarcinogenic properties, higher omega-3 fatty acids etc. (Muduli *et al.*, 2018).

Functional foods can improve the general condition of the body, decrease the risk of certain diseases, and even cure certain illnesses. Instead of synthetic compounds, use of these herbals is more beneficial and acceptable by the consumers. All these indicated that the overall health promotion in hens as well as in humans is possible by popularizing and improvising herbal enriched eggs.

References

- Kirubakaran, A., Narahari, D., Ezhil Valavan, T. and Sathish Kumar, A. (2011). Effects of flaxseed, sardines, pearl millet, and holy basil leaves on production traits of layers and fatty acid composition of egg yolks. *Poultry Science*, 90(1), 147-156.
- Bhat, Z. F., Kumar, S. and Kumar, P. (2013). Production of designer eggs. In: *Animal Products Technology*. Studium press (India) Pvt. Ltd., p. 543-568.
- Daramola, O., Jimoh, A., Oloruntola, O., and Ayodele, S. (2018). Effect of herbal supplement on the laying performance and antioxidant status of serum and egg yolk of laying birds. *Biotechnology Journal International*, 21(3), 1-9.
- Devi, K. M., Palod, J., Dar, A. H. and Shekhar, S. (2018). Effect of Feeding Graded Levels of Pudina (*Mentha arvensis* L.) leaf powder on egg quality Traits in Laying Hen. *International Journal of Current Microbiology and Applied Sciences*, 7(03), 756-761.
- Muduli, S., Champati, A. and Popalghat, H. K. (2018). Designer egg: A new approach in modern health care. *The Pharma Innovation Journal*, 7(5), 320-326.
- Narahari, D. (2003). Health-promoting and therapeutic uses of egg. *Poultry International*, 42(10), 45-47.
- Narahari, D., Kirubakaran, A. and Kumararaj, R. (2004). Influence of herbal enriched functional eggs consumption on serum lipid profile in humans. Proceedings of the 22nd World Poultry Congress, June 8-13, Istanbul, Turkey.
- Navya, V. G., Hemla Naik, B., Thirumalesh, T., Thippesh, D., Umesh, B. U., Kanthraj, Y. and Jyothi M. Rathod. (2020). Influence of Marigold Petal Meal Rich in Xanthophyll as a Component of Commercial Layer Diets on Egg Quality Parameters. *International Journal of Current Microbiology and Applied Sciences*, 9(09), 2178-2185.
- Raza, T., Chand, N., Khan, R. U., Shahid, M. S., and Abudabos, A. M. (2016). Improving the fatty acid profile in egg yolk through the use of hempseed (*Cannabis sativa*), ginger (*Zingiber officinale*), and turmeric (*Curcuma longa*) in the diet of Hy-Line White Leghorns, *Archives Animal Breeding*, 59, 183-190.
- Raj, P. M., Narahari, D. and Balaji, N. S. (2013). Production of eggs with enriched nutritional value (Designer Eggs) using feeds containing herbal supplements. *International Journal of Veterinary Science*, 2(3), 99-102.
- Singh, V. P. and Neelam, S. (2010). Speciality Egg. *Hind Poultry*, 9, 20-22.
- Sujatha, T. and Narahari, D. (2011). Effect of designer diets on egg yolk composition of 'white leghorn' hens. *Journal Food Science Technology*, 48(4), 494-497.