

Promotion of Marigold Seed as a Natural Poultry Feed Supplement for Improving Egg Nutritional Quality among Backyard Poultry Farmers in Village

*Megha Kashyap, Dr. Payal Jaiswal and Dr. Subuhi Nishad

Indira Gandhi Krishi Vishwavidyalaya, Raipur, Chhattisgarh, India

*Corresponding Author's email: meeshakashyap31796@gmail.com

Backyard poultry farming is an important source of livelihood, nutrition and supplementary income for rural households. It requires relatively low investment and can be easily managed by small and marginal farmers. Eggs produced from backyard poultry provide an affordable and valuable source of high-quality protein and other essential nutrients for rural families. However, the nutritional quality of eggs is influenced not only by the genetic potential of birds but also by their feeding and management practices. In rural areas, poultry birds are generally maintained under semi-intensive or free-range conditions and are often dependent on locally available feed resources. Therefore, the promotion of locally available, economical and natural feed supplements can play an important role in improving poultry nutrition and egg quality. Marigold (*Tagetes spp.*) is an important ornamental crop belonging to the family Asteraceae. Besides its ornamental value, different parts of the marigold plant contain biologically important compounds. Marigold seeds are also a potential locally available plant-based feed resource and can be explored as a natural supplement in poultry diets. The use of such plant-based resources can provide an additional opportunity for rural poultry farmers to improve the nutritional value of poultry products in an economical and sustainable manner.



Awareness Programme in Village

An awareness programme was conducted among backyard poultry farmers in Pirda village, Chhattisgarh, with the objective of creating awareness about the potential use of marigold seed as a natural poultry feed supplement and its possible role in improving the nutritional quality of eggs. During the programme, farmers were introduced to the importance of balanced feeding in backyard poultry production. Special emphasis was given to the use of locally available and natural resources that can supplement the regular poultry diet. The farmers were made aware of marigold seeds as a potential plant-based feed supplement and were encouraged to understand the importance of proper feeding practices for maintaining healthy poultry birds and obtaining better-quality eggs. The interaction with the farmers was carried out in a simple and practical manner so that the information could be easily understood and adopted at the household level. Discussions were also held regarding the importance of eggs as a nutritious food source, particularly for children, women and other members of rural households.

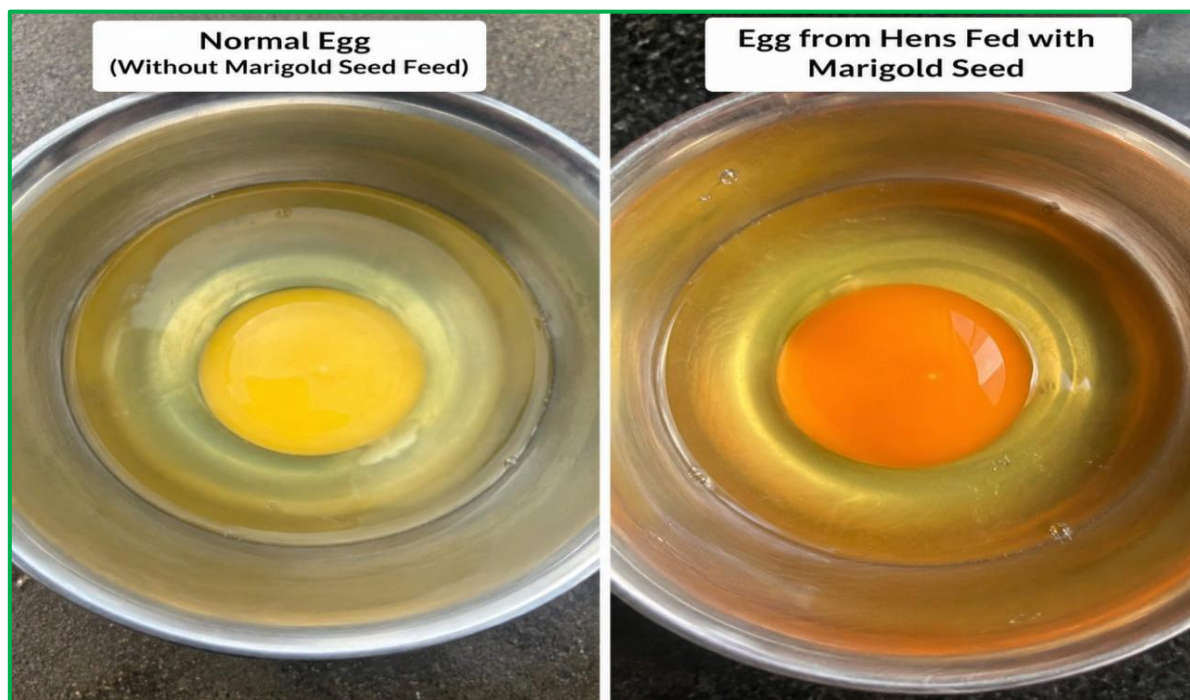
Why Marigold Seed?

Marigold is commonly cultivated for its attractive flowers and has considerable importance in floriculture. However, the utilization of marigold can be extended beyond its ornamental purpose. Marigold seeds contain various bioactive and nutritional components that make them an interesting plant-based resource for exploring their potential in poultry feeding. Plant-derived feed supplements are receiving increasing attention because of their potential to provide natural bioactive compounds while reducing dependence on synthetic additives. Marigold-derived products, particularly those rich in carotenoid compounds, have also attracted interest in poultry nutrition because of their potential influence on egg quality and pigmentation. The promotion of marigold seed as a natural feed supplement therefore represents an interesting link between floriculture, poultry production and rural livelihood improvement. It also creates awareness about the diversified utilization of an ornamental crop.



Importance of Nutritional Quality of Eggs

Eggs are considered one of the most complete and affordable sources of animal protein. They contain high-quality proteins, essential amino acids, lipids, vitamins and minerals. Improving the nutritional quality of eggs can therefore contribute significantly to household nutrition and food security. For backyard poultry farmers, producing nutritious eggs can have a dual benefit. Eggs can be consumed by the family to improve dietary nutrition, while surplus eggs can be sold in local markets to generate additional income. The use of natural and locally accessible feed supplements may provide an opportunity to improve the value of backyard poultry products while maintaining a low-input production system.



Interaction with Rural Poultry Farmers

The interaction with farmers provided an opportunity to understand their existing poultry production practices, feeding habits and awareness regarding nutritional management. Farmers were encouraged to make better use of locally available resources and to focus on the nutritional requirements of their birds. The programme also emphasized that poultry health and egg quality depend on several factors, including balanced nutrition, clean drinking water, proper housing, hygiene, disease prevention and regular care. A feed supplement should therefore be considered as a component of an overall poultry management programme rather than as a replacement for a balanced diet. The farmers showed interest in learning about alternative natural feed resources and their possible applications in backyard poultry production. Such direct interaction is important for transferring scientific knowledge from agricultural institutions to rural communities.

Floriculture and Poultry: An Opportunity for Diversification

The concept of utilizing marigold seeds for poultry feeding demonstrates the potential for interdisciplinary approaches in agriculture. Floriculture is traditionally associated with flowers, landscaping and ornamental value, but several flower crops and their by-products may have additional agricultural applications. Marigold, in particular, has diverse potential because of its bioactive compounds and widespread cultivation. Exploring its seed and other plant-derived resources for value-added applications can contribute to the broader concept of agricultural diversification and sustainable resource utilization. For rural communities, such approaches can encourage farmers to explore multiple sources of income and nutrition rather than depending on a single agricultural activity.

Role of Awareness and Knowledge Transfer

Scientific technologies and agricultural innovations can have a meaningful impact only when farmers are aware of their benefits and know how they can be practically utilized. Village-level awareness programmes provide an effective platform for communicating agricultural information directly to farmers. The programme at Pirda village demonstrated the importance of farmer interaction, practical communication and knowledge sharing. Such initiatives can help bridge the gap between scientific research and field-level agricultural practices. Awareness regarding natural feed supplements, balanced poultry nutrition and improved egg quality can ultimately contribute to better household nutrition, improved poultry management and additional income opportunities for rural families.

Conclusion

The promotion of marigold seed as a natural poultry feed supplement provides an innovative approach that connects floriculture with backyard poultry production. The awareness programme conducted in Pirda village highlighted the potential of utilizing locally available plant-based resources for improving poultry nutrition and the nutritional value of eggs. Such initiatives can play an important role in promoting sustainable agricultural practices, strengthening rural livelihoods and improving household nutrition. Greater research and field-level evaluation are required to establish the optimum inclusion level of marigold seed and its specific effects on egg nutritional composition, egg quality and poultry performance. The integration of floriculture-based resources with backyard poultry farming represents a promising area for future research and agricultural extension, particularly for rural communities seeking low-cost, natural and sustainable approaches to improve their food and nutritional security.

References

1. Lokaewmanee, K., Yamauchi, K., Komori, T., & Saito, K. (2011). Enhancement of yolk color in raw and boiled egg yolk with lutein from marigold flower meal and marigold flower extract. *The Journal of Poultry Science*, 48(1), 25–32. <https://doi.org/10.2141/jpsa.010059>
2. Breithaupt, D. E. (2007). Modern application of xanthophylls in animal feeding – A review. *Trends in Food Science & Technology*, 18(10), 501–506. <https://doi.org/10.1016/j.tifs.2007.04.009>
3. Tyczkowski, J., & Hamilton, P. B. (1986). Evidence for differential absorption of zeaxanthin and lutein by laying hens. *Poultry Science*.
4. Karunajeewa, H., Hughes, R. J., McDonald, M. W., & Shenstone, F. S. (1984). A review of factors influencing pigmentation of egg yolks. *World's Poultry Science Journal*.
5. Quackenbush, F. W., & Miller, S. L. (1972). Composition and analysis of the carotenoids in marigold petals. *Journal of the Association of Official Analytical Chemists*.