



BLACK WHEAT FARMING

Ajay Kumar Gour

Assistant Professor
Institute of Agricultural Sciences
Malwanchal University, Indore, India

Email: agrimalwauni@gmail.com

Introduction:

Wheat is one of the major cultivated crops around the globe. This grass (Poaceae) family cereal plays a pivotal role in the human diet, as it is taken as the staple food. According to Food and Agriculture Organization report the amount of wheat production in the world is about 765.7 million tonnes in 2019. Black wheat is a type of pigmented wheat variety which shows the dark colour on its outer cover (Pericarp). Aside this black wheat there is also red wheat, blue wheat, purple wheat. All those colours are due the presence of anthocyanins. This black colour wheat is now making headlines for its nutritive value. Different studies proves that the health benefits of this is way much better than the conventional yellow wheat variety in aspect of protein content, essential amino acids availability gluten index of its flour etc.

Black Wheat Farming in India:

The farming strategy of black wheat is almost same to the normal

wheat. The first produced black grain variety is named as 'Black 76'. At the early stage of growing black wheat, it also appears with green stem and grain but in grain maturity stage it shows the blackish appearance in it. The grain matured fully in 131-135 days in the Indian climatic condition when it requires harvesting. It gives lower yield and small grain size as compared to the normal wheat. Its seed is still not available that much in the seed stores for local farmers, but it available in NABI. It is still not that much popular among the farmers probably because of its low yield. Though the cultivation of it is started in some areas of Madhya Pradesh, Punjab, Haryana and Gujarat.



Where it Differs from the Yellow Wheat:

Black grained wheat differs from the conventional wheat not only

in the outer appearance but in the inner layers like aleurone layer, pericarp and also in the essential nutrient availability. The wheat caryopsis is made up of two main parts pericarp and seed. The Pericarp is the outer most layer of the grain and seed is the inner one. In case of structural difference, the black wheat differs in layers like the outer endosperm layer (aleurone layer) which is the only living part of the grain, contains blue pigment and the pericarp contains purple pigment but the testa of both type of wheat doesn't contain any amount of anthocyanins so both shows the same colour. Anthocyanins content of normal wheat grain is 5 ppm where in case of black wheat it is around 100-200 ppm.

Advantages and Health Benefits:

75% of the total carbohydrate content is present only in the endosperm of the black wheat and the protein content of black grain wheat is 10-15% higher than the normal wheat. It contains carbohydrate 62.10%, crude protein 20.50%, crude fiber 2.40%, lipid 1.60% and ash 1.90% in it. It also contains arabinoxylan which is a non starch polysaccharides, dietary fiber, sugar, structural polymers like lignin, cellulose. Some essential amino acids, vitamins (vitamin E, vitamin B3 and B5, vitamin K) and minerals (ZN, FE, CU, CA and P) are also present among that zinc and iron concentration

needs special mention. Black wheat grain helps in body building and maintaining the water balance of the body. The presence of unsaturated fatty acid helps in release the cardiovascular problem by improving the heart health. Relieving the problem of constipation, fecal bulking and large bowel protection.



Drawbacks and Future Needs:

The major constraint of black wheat production is its low productivity in compare to conventional wheat varieties it lowers almost 10 quintal per hectare. It needs selection of proper traits for better production. Adaptability in different climatic region is also a very important factor for becoming popular in India because India possesses different climatic zones. In case of disease and pest resistivity black wheat also need some good research support for better performance in terms of yield. Aside that black wheat also needs good extension work and initiative from government to become popularize among the farmers.