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Kodo Millet: The Neglected and Underutilized Crop for Food Security

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Abstract

Kodo millet (*Paspalum scrobiculatum*) is a small-seeded cereal grain that is one of India's oldest cultivated crops. In the recent, Kodo millet, like other millet species, has witnessed a severe decline in production and is due to the promotion of alternative staple grains (mainly rice and wheat). Millets have been overlooked in R&D, and as a result lack the production benefits of rice and wheat, such as enhanced variety availability and understanding of growth strategies to optimize yields. However, because of its rich nutritional profile, low input needs, and resilience to marginal soils and varying climatic conditions, Kodo millet has sparked fresh study interest as risk management and climate change adaptation strategy for farmers.

Introduction

Climate change is posing substantial problems to staple foods, which will continue in the foreseeable future. Diversification of crops, even neglected crops, is critical in this regard if the world is to accomplish its aim of food security. Neglected crops are species that have traditionally been grown by local populations and have a lot of potential to help with food security and vitamin A insufficiency (Mabhaudhi, 2009). Tolerant to drought, heat, pest and disease resistant, adapted to semiarid and arid conditions, neglected crops could help poor rural communities diversify their diets and treat nutritional shortages. Kodo millet is one such crop that has been identified to be neglected yet loaded with advantages for the farming communities.

Role of Neglected and Underutilized Crop on Food Security

Several underutilized crops have the ability to improve food security on a regional and local level. In an increasingly globalized society, eliminating malnutrition is a criterion for attaining peace and global security. If we are to feed 9,000 million people in a sustainable manner by 2050 while also saving the environment, ensuring healthy and nutritious food for all, and enhancing farmers' livelihoods, we will need more diverse agricultural and food systems (Padulosi *et al.*, 2013). Crop diversification is one of the most effective ways to ensure long-term agricultural production systems, therefore neglected and underused species (NUS) are important in food security and resilient food systems. As a result, more trustworthy seed systems are required, allowing farmers to take use of the abiotic resistance qualities inherent in certain NUS crops like Kodomillet (Figure 1).

The crop's importance in tribal agriculture stems from the fact that it produces modest yields on marginal/ poor soils with low inputs. Kodo millet has lower yields than other

staple crops, but they compensate by being more resistant to biotic issues and generating reliable harvests in a wide range of climatic conditions and on difficult soils. One of the most crucial characteristics is adaptability. It is typically grown in poor areas with difficult agro-ecological conditions and when smallholder farmers do not have the financial resources to pursue high-input farming systems aimed at major staple crops. Farmers are preserving traditional variety and are frequently most adapted to marginal ecosystems and varied surroundings, as well as resistant to local pests and diseases (Padulosi *et al.*, 2013). The Millet, in addition to its nutritional value, has numerous therapeutic characteristics and can be utilized as a nutraceutical.

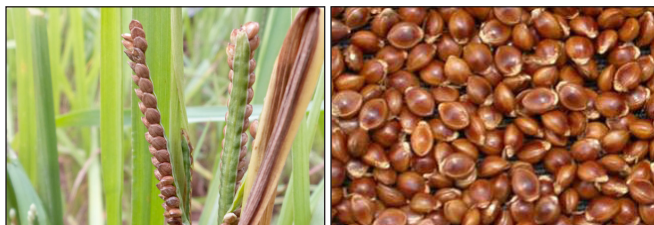


Figure 1: Panicle and whole grains of Kodo millet (*Paspalum scrobiculatum*)

Nutritional Importance of Kodo Millet

Due to the sheer emphasis given to other cereals, the area and production of Kodo millet in India have been dropping since the green revolution. Nevertheless, in recent years, consumers' health concerns have switched their attention to millet crops such as Kodo millet. This millet's nutritional supremacy has boosted breeding efforts in this crop. Kodo millet is a significant food and fodder crop that is served as rice in Africa and India. It is used to prepare lime rice, coconut rice, and other dishes similar to rice since the seed does not lose its integrity when boiled. Its flour is also used to produce pudding, and other bakery products are manufactured in the same way as rice is. Kodo millet, being healthy, may be used in favor of rice, as all rice-based items can be made from it.

Kodo millet is high in key nutritional components. In addition to these, Kodo millet has bioactive molecules due to its high levels of vitamin B (niacin), folic acid, phenolics, and flavonoids. A notable feature of Kodo is that it contains more lecithin, which helps to enhance neuro-receptors in the neurological system. The nutritional efficiency of this millet has strengthened the breeding efforts in this crop. Exploiting the existing genetic resources can lead to an improvement in production. Kodo millet is a great source of dietary fiber (9%), which is lower than in main grains such as rice (0.2%) and wheat (1.2%). Glutalin is a major component of

protein that is gluten-free. Kodo millet leaves are used as an antiseptic, and pastes made from its leaves are used topically to treat dermatological ailments. According to ethnobotanical records, Kodo millet is used to cure diabetes, narcotics, ulcers, carbuncles, ophthalmia, and parturition. The anti-oxidant activity of Kodo is fairly strong when compared to other grains, and it has the highest potential for scavenging free radicals in cells.

Smart Climate and Resilient Future Crop

Kodo millet is a resilient crop with wild weedy characteristics that can withstand unfavorable conditions. This paper discusses its distinct characteristics for climate resistance. This millet has a greater average yield in a rainfed environment and could potentially be cultivated in rocky and infertile areas. In these cases, Kodo millet would be a miracle crop to overhaul agricultural techniques in un-arable areas as urbanization continues to disrupt cropping patterns among farmers. Kodo millet is a low-demand crop that might yield well with more irrigation and fertilizer input.

This crop has a low probability of insect and disease infection. The wild characteristics of this millet have the potential to serve as a non-preferential host for developing strains. As a result, we may safeguard the environment even more by eliminating inputs such as agrochemicals. Together, this may be called a clever crop by farmers, and it is a good alternative to rice. Several rice-based recipes could be made with Kodo millet as well. Thus Kodo rice dishes are much healthier than calorific rice. Not ignoring the fact the strong old does not wither, we could state that moving towards Kodo millet as a substitute for rice is of course a very smart and effective choice in the future. This crop has already started to capture its demand in the organic platforms and biscuit industries recently.

Conclusion

It's becoming clear that Kodo millet holds a lot of potential for food security and nutrition in the face of rising agricultural expenses, climate change, and a growing global population to feed. It is nutritive, has added health advantages, has lower cultivation input costs, and is naturally resistant to most biotic and abiotic stresses. These characteristics showcase Kodo millet as a crop of choice for the global population as climate change problems mount. These properties of Kodo millet make it a next-generation crop with the potential for research to examine its climate-resilient qualities.

References

Mabhaudhi, T., Chibarabada, T., Chimonyo, V., Murugani, V., Pereira, L., Sobratee, N., Govender, L., Slotow, R., Modi,

A., 2019. Mainstreaming underutilized indigenous and traditional crops into food systems: a South African perspective. *Sustainability* 11(1), 172. DOI: <https://doi.org/10.3390/su11010172>.

Padulosi, S., Thompson, J., Rudebjer, P., 2013. Fighting

poverty, hunger and malnutrition with neglected and underutilized species: needs, challenges and the way forward: neglected and underutilized species. Biodiversity International, Rome. pp. 25-38.