

Role of Sorghum Seed Towards Food Security

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Introduction

Seed is the main physical input in agricultural production, as well as the key source of most foods, at least those of plant origin, and thus has the highest socioeconomic benefit to human welfare. The development of seed production and the use of high-yielding seed varieties have played a chief role in the success of the green revolution. Seed availability is vital for increasing food production, developing farmer income, fighting scarcity, and ensuring food security.

Sorghum is one of the world's most popular and important crops. It is scientifically known as *Sorghum bicolor* L. and is commonly referred to as 'Jowar' in India. Among other millets, a large size is referred to as a 'Great millet'. Sorghum is a major and important food grain in our country. Sorghum grain, which is grown by marginal and small groups of farmers in semi-arid parts of the country, ranks fifth in cereals for global production after crops like wheat, rice, maize, and pearl millet. It is regarded as the world's most important staple food crop for the poor and food-insecure people in Asian and African countries.

Sorghum (*Sorghum bicolor*) is a drought-resistant cereal grain that plays a vital role in food security, particularly in arid and semi-arid regions. This analysis examines the economic implications of sorghum seed production and its impact on food security.

Importance of Sorghum

Nutritional Value: Sorghum is rich in nutrients, including protein, fiber, and essential vitamins. It serves as a staple food for millions, especially in Africa and Asia.



Sorghum grain is also known as nutrient-dense grain because it contains a variety of nutrients. As a result of its high carbohydrate and calcium content, it is a staple food for half of the world's population. Sorghum is an important component of the Indian diet. Half a cup of uncooked sorghum (96 grams) provides, Calories (316 Calories) Carbohydrate (69 grams), Proteins (10 grams), Fat (3 grams), Fiber (6 gram), Iron (18% of the DV), Thiamine (26% of DV), Pantothenic acid (7% of DV), Vitamin B6 (25% of DV) and Riboflavin (7% of DV) are all found in sorghum.

Adaptability: Sorghum comes from Ethiopia, which is in East Central Africa. In the first millennium, sorghum was brought from East Africa to India. Sorghum (*Sorghum bicolor* L.) belongs to family Poaceae. The height of the plants ranges from 0.6 to 4.0 meters. White, yellow, or brownish yellow seed. Glumes usually cover the inflorescence. Due to its high drought resistance, sorghum is also known as camel crop.

Its resilience to drought and poor soil conditions makes sorghum a suitable crop for areas susceptible to climate change.

Economic Contributions

Cost-Effectiveness: Sorghum requires less water and inputs compared to other cereals, reducing production costs. This makes it an economically viable option for smallholder farmers.

Market Demand: Increasing global interest in gluten-free products has spurred demand for sorghum, offering farmers new market opportunities.

Seed Quality and Innovation

Investments in research and development for high-yield, pest-resistant sorghum seeds are crucial. Improved seed varieties can enhance productivity, making cultivation more profitable and ensuring a stable food supply.

Challenges

Access to Quality Seeds: Many farmers lack access to improved sorghum seeds, which can



limit productivity. Extension services and seed distribution programs are essential to overcome this barrier.

Market Fluctuations: Price volatility in sorghum markets can impact farmers' income stability. Strategies to stabilize prices and enhance market access are needed.

Policy Recommendations

Support for Research: Governments and organizations should invest in agricultural research to develop resilient sorghum varieties.

Certified Seed production of rabi sorghum is more profitable compared to grain production. Therefore, to increase their income, more and more number of farmers should take up seed production in areas where sorghum is grown predominantly, provided with the procedures and other formalities in registering the seed farms.

Financial Incentives: Providing subsidies or microloans for seed purchase can encourage farmers to adopt better seed varieties, enhancing productivity.

Education and Training: Agricultural education programs can help farmers understand best practices for sorghum cultivation, improving yields and profitability.

Conclusion

Sorghum has adaptable attributes in a variety of environments, allowing it to thrive in places where other cereal crops aren't. Sorghum seed plays a crucial role in enhancing food security through its economic viability and adaptability to challenging growing conditions. By addressing challenges related to seed access, market stability, and agricultural innovation, stakeholders can leverage sorghum as a key component in food security strategies.