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Cultivation Practices of Kalanamak Rice Noth East Plan Zone

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Abstract

Kalanamak rice (Oryza sativa L.) is a traditional aromatic rice variety known for its unique grain characteristics, aroma, and culinary preferences. This study focuses on the cultivation practices of Kalanamak rice within the North East Plain Zone, considering its significance in terms of cultural heritage, biodiversity conservation, and sustainable agriculture. The abstract provides a concise overview of the study's objectives, methods, key findings, and implications. The study found that Kalanamak rice cultivation in the North East Plain Zone is deeply embedded in the cultural practices of local communities.

Key words: Agronomic practices, Sowing, Irrigation, Pest and disease management, Kalanamak rice cultivation.

Introduction

The heritage rice (*Oryza sativa* L.) known as Kalanamak is the pinnacle of the best aromatic rice produced and consumed in the north eastern region of Uttar Pradesh. Since the beginning of time, people have been cultivating it **(Chaudhary and Tran, 2001; Chaudhary, 2002; Chaudhary and Mishra, 2010).** About 3000 years ago, Kalanamak is thought to have been the chosen kind for offerings made to Lord Buddha. High yielding varieties (HYV), which have been neglected by rice research organisations over decades of under cultivation and farmers' improper seed management, have doubled down on their economic assault. Short grain Kalanamak is categorized as a medium slender variety. These have exceptionally high head rice recovery (70%) rates. These have great grain elongation and cook up gently. The most iron and zinc are mixed in the maximum amount in Kalanamak types. This is why the only rice variety from north India to be included in the Nutri Farm project of the Indian Ministry of Agriculture was Kalanamak. Government of Uttar Pradesh had included Kalanamak in the Nutri Farm project also. Kalanamak is the most nutritious of all rice in terms of protein, Iron, Zinc, Vitamin-A (beta carotene) while being sugar free. The catchphrase

"Basmati for your eyes and Kalanamak for your palate" is well-known in eastern Uttar Pradesh. For fine rice, the government sets a Minimum Support Price (MSP) of about Rs. 1750/q. But Kalanamak rice only brings in between Rs. 3500 and Rs. 4500 per quarter. As a result, the revenue of Kalanamak Farmers has tripled.

Time of cultivation

In order to maintain the quality of its grain, Kalanamak should only be grown during the *Kharif* season. The latter week of July is the best time to seed Kalanamak. The seedlings are prepared for transplantation when they have reached the age of roughly 30 days. The Prayagraj condition final week of July to the first week of August is the best period to transplant. Never perform a transplant before the final week of July. This advice is supported by the observation that grain only reaches its highest quality and most aromatic state at temperatures between 25 and 300 C.

Seed rate

About 30 kilograms seed is enough to cultivate one hectare of land due to small grain size and lower 1000 grain weight.

Nursery management

The final week of June through the first week of July is ideal for nursery sowing. For seeding, a nursery area of 1000 square metres, or 0.1 hectare, is adequate. To prepare the seedbed for a field measuring one hectare, plough and bund 1,000 square metres of land. Apply FYM and fertiliser after that, according to the results of the soil test. After thoroughly incorporating the FYM into the soil, add water to the bed, puddle it, and level it such that 2 cm of water stagnate in the seedbed. Put the seeds in water for 12 hours and then prepare a seedbed. After the water is drained, the seed is piled on the ground or put in jute bags. With the heat created by soaking seeds, the seeds sprout within 24 hours if heaped on the floor and covered with damp jute bags. The sprouting seeds are then broadcast on the seedbed that have already been prepared.

Fig. Preparation of nursery field, Application of FYM

Preparation of field

When nursery is ready to transplanting in main field. Before transplanting the nursery

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seedlings to main field, it should be free from weeds. For the purpose of green manure, *Sesbania* (Dhaincha) or *Crotalaria juncea* (sunn hemp) should be sown in the mid may to first week of June. Once these crops have grown for about 45-60 days, these should be ploughed in the field using mould board plough. In case Mung was grown the pod should be handpicked before ploughing in the field. It may be noted the field must be full with 20 cm water to allow proper rotting. This will allow a proper decomposition within week. Such green manuring provides at least 80 kg N/ha. In case FYM 10 tons of FYM or compost should be applied before ploughing. In the fertilizer dose of 30 kg Nitrogen, 30 kg phosphorus and 30 kg potash should be used per hectare. If the soil has history Zinc deficiency, 25 kg Zinc sulphate should be applied per ha before transplanting. Final land preparation should do after fill in the field with 4 to 5 cm of water and puddling with any appropriate tractor or bullock drawn puddler or equipment.

Fig: Preparation of bund, puddling and Transplant in main field

Transplanting

Once seedlings have attained an age of 20-30 days, these are ready for transplanting. A spacing of 20 cm row to 15 cm plant to plant is recommended.

Fertilizer management

There are so many methods and combination to supply major nutrients to the plants. Full fertilizer requirement of Kalanamak may be provided totally by inorganic fertilizers such as Urea, Ammonium Sulphate, DAP and Super Phosphate but grain quality will be affected though not the yield. In case of only inorganic manures are used, 30 kilogram of Nitrogen, 30 kilogram of Phosphorus and 30 kilograms of Potash *i.e.*, half dose of nitrogen and full dose of Phosphorus and Potash must be applied before transplanting. 15 kilograms of nitrogen should be top dressed one month after transplanting. The remaining 15 kilograms of nitrogen should be applied at the time of panicle initiation which may be around mid to last week of September.

Weed control

Since transplanting of Kalanamak is done late, by that time most of the weeds in the rice field germinated already. After that, Kalanamak does not require weeding since it is a tall type that covers

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the soil surface, preventing weed growth. Herbicides, on the other hand, should be used with caution and deliberation if necessary.

Pest and disease management

Kalanamak is cultivated at relatively lower fertility levels. It also possesses a moderate level of resistance to key pests and diseases. But it may be get infested with stem borer and gandhi bug. Against stem borer no simple remedy can be recommended. But to control gandhi bug BHC or Malathion dusts may be used during heading to milk stage.

Harvesting, threshing and storage

Usually crop mature 30 days after full heading. Date of harvesting may be decided once the leaves have almost dried. Husk being black in color does not convert golden or straw color, thus leaves are better indicator of maturity. Threshing should be done immediately after harvesting. Grain should be sun dried to a moisture level of about 12% before it is stored.

Grain quality

Kalanamak Kiran has medium cylinder grain with black husk and white rice. It is highly aromatic and soft cooking type with low amylose content. Kalanamak Kiran has also high protein, Zinc and Iron. The significant point is that it has low Glycemic Index (53.1%) which is suitable even for diabetic people. This heritage rice is full of nutrotive values. **(Chaudhary, 2016 and Chaudhary *et al.*, 2012).**

Tripling the Income

According to the government, the current minimum support price for rice is Rs. 1835/q. The current Kalanamak Kiran selling price ranges from Rs. 3500 to Rs. 4000/q. Farmers can double their revenue and triple the price of product that has received a Kalanamak organic certification because to this pricing difference. **(Mishra and Chaudhary, 2012; Chaudhary, 2013).**

Summary

The best aromatic rice being grown in North-Eastern U.P. is kalanamak kiran. The central variety recommendation and notification committee of the Indian government published Kalanamak Kiran in 2019. It is extremely high in protein, zinc, and iron. It is suitable for intake for diabetics due to its Glycemic Index of 53.1. In conclusion, Kalanamak Kiran can stabilise it from extinction to distinction and has the finest mix of grain quality and production. **(Chaudhary *et al.*, 2012).** Therefore, farmers can not only double but triple their income. It seed are available with PRDF in Gorakpur.

References

Anonymous (2016). Agricultural statistics at a glance, Department of Economics and Statistics, Ministry Agriculture, New Delhi.

Bajpai, A., & Singh, Y. (2010). Study of quality characteristics of some small and medium grained

aromatic rice of Uttar Pradesh and Uttara Khand. *Agricultural Science Digest,* **30**(4): 241-245.

Chaudhary, R. C. (2009). Prospects of promoting traditional scented rice variety of eastern Uttar Pradesh Kalanamak for local consumption and export. *Rice India,* **19**(8): 22-31.

Chaudhary, R. C., & Mishra, S. B. (2011). Improvement of Kalanamak rice variety using EMS and Hybridization. *Int. Rice Res.* News Notes.

Chaudhary, R. C., Mishra, S. B., Singh, S. & Yadav, R., (2022). High Beta Carotene Discovered in Kalanamak of Rice. *Journal of Agriculture,* **8**(4): 379-380.

Chaudhary, R. C., Mishra, S. B., Yadav, S. K., & ALI, J. (2012). Extinction to distinction: Current status of Kalanamak, the heritage rice of eastern Uttar Pradesh and its likely role in farmers' prosperity. *Gene,* 16: 16.

Chaudhary, R. C., Sahani, A., & Mishra, S. B. (2022). Improvement of local Germplasm of Kalanamak Rice to benefit Environment, Health and Wealth. *Scientific Research Journal of Agriculture and Life Science.* **2**(1): 1-7.

Government of India (2012). *Geographical Indications Journal,* (48) Nov 29, / AGRAHAYANA 08, SAKA 1934.

Maity, A., Mukherjee, A., Pramanik, P., & Mukherjee, S. (2013). Shifting towards vegetable cultivation from that of rice in Purba Medinipur district of West Bengal. *BIOINFOLET-A Quarterly Journal of Life Sciences,* **10**(3): 876-878.

Roy, K., Mukherjee, A., Maity, A., Shubha, K., & Nag, A. (2018). Protecting non-basmati indigenous aromatic rice varieties of West Bengal, India under geographical indication: a critical consideration. *In The role of intellectual property rights in agriculture and allied sciences* (295-318).