

Economic Analysis of Hybrid Rice Seed Production in Balaghat District of Madhya Pradesh

Nirmal Choudhary
College of Agriculture, Balaghat
Jawaharlal Nehru Krishi Vishwavidyalaya, Jabalpur

ARTICLE ID: 74

Introduction:

Rice (*Oryza sativa* L.) is the world's most important cereal crop that is consumed by a large part of the world's population after wheat. In India, Paddy Production accounts for approximately 44 % of total food grain production. In the year 2018-19, paddy production in India was 116.42 million tonnes in the cultivated area of 43.79 million hectares. To meet the domestic demand of the increasing population the present-day production of 116.42 million tonnes (2018-19) of paddy have to be increased to 186.56 million tonnes by the year 2030. In India, the productivity of paddy is 2.65 t/ha. it is low as compared to the world's productivity, it is. Productivity of paddy needs to be increased in India. Since the yield of high yielding varieties (HYVs) of rice is plateauing, therefore, to sustain the self-sufficiency in rice, adoption of Hybrid Rice is a must, because it gives 15-20 % more yield than commercial high yielding varieties.

In the country, commercial hybrid rice seed production was started in Karimnagar and the Warangal District of Andhra Pradesh. In Dhamtari (Chhattisgarh) and Balaghat (Madhya Pradesh) also hybrid rice seed programs were taken by private companies. In present days, mostly seed production is being taken in the coastal area of Orissa.

Scope of Hybrid Rice Seed Production in Balaghat:

Balaghat district of Madhya Pradesh, which comes under the Chhattisgarh Plains Agro-climatic zone is the major producer of Paddy in the State. In Kharif 2019-20, Paddy was grown in 3, 21,002 hectare area of Balaghat district. Favorable climatic conditions and availability of a large market for Hybrid Rice Seed make Balaghat district suitable for Hybrid Seed Production of Rice. In Balaghat also the productivity of the Paddy crop is 2.1



tonnes/hectare. Hybrid Rice production can increase the productivity and net income of farmers in the district.

Summer Paddy crop is taken by farmers who have their irrigation sources. In Rabi (2019-20) summer paddy crop is being taken in 13,288-hectare area of Balaghat. Farmers can take more economic benefit by adopting Hybrid Rice Seed Production in this irrigated area instead of growing conventional paddy crop.

Economic Analysis of Hybrid Rice Seed Production:

Hybrid Rice Seed Production is a complex and expensive technique but it is a more profitable enterprise as compared to the commercial summer paddy crop. If proper management is done then farmers can get a yield of 20 quintals per hectare and a Net Income of 1,25,000 Rs. per hectare. Contrary to these in Commercial Cultivation of paddy in summer, Net Income is approximately 40,000-45,000 Rs. per Hectare. Additional Employment of 100-105 days is created in the Hybrid Rice Seed Production. Hence, it very clear that farmers should adopt Hybrid Rice Seed Production Programme in summer rather than commercial grain production.

Cost of Production Hybrid Rice Seed is more than Commercial Grain due to the following factors:

- Expensive seed of parental Lines
- 3-4 times staggered sowing seed in Nursery
- Line Transplanting
- Labour wages of Roguing & Gap Filling
- Labour wages of Supplementary Pollination
- Expensive Gibberellic Acid
- Separate A & R line Harvesting and threshing.

Following table contains approximate per hectare Cost & Income in the Hybrid Rice Seed Production:

Particulars	Quantity/ No. (per hectare)	Cost / Income (Rs. /ha)
Seed Cost		
a. Male -	5 kg @ 50 Rs./ Kg	250
b. Female-	15 kg @ 200 Rs/Kg	3,000
Labor Cost	250 Man days @ 150 Rs./day	37,500
Fertilizers	N:P:K (100:60:40)	5400
Irrigation Cost	18-20 Irrigation @ 650 Rs per irrigation	13,000
Gibberellic Acid	50-100 gm/hectare	2,000
Other Expenses		15,000
• Plant Protection		
• Miscellaneous		
Total Cost		76,150 Rs/ha.
Estimated YIELD		20 Quintal/ha. (SEED) + 15 Quintal/ha (R-line)
Gross Income	9000 Rs/Quintal (Hybrid Seed) + 1400 Rs/ Quintal (R-line)	1,80,000 Rs/ha (SEED) + 21,000 Rs/ha (R-line) = 2,01,000 Rs
Net Income	2,01,000 - 76,150 = 1,24,850 Rs/ha	1,24,850 Rs/ha
Cost of Production	76,150 ÷ (20 +15) = 2175.71 Rs/Quintal	2175.71 Rs/Quintal

(Rs/Quintal)		
Benefit Cost Ratio (B:C)	$2,01,000 \div 76,150 = 2.63$	2.63

Comparison between Profitability of Commercial Grain Production and Hybrid Rice Seed Production in summer:

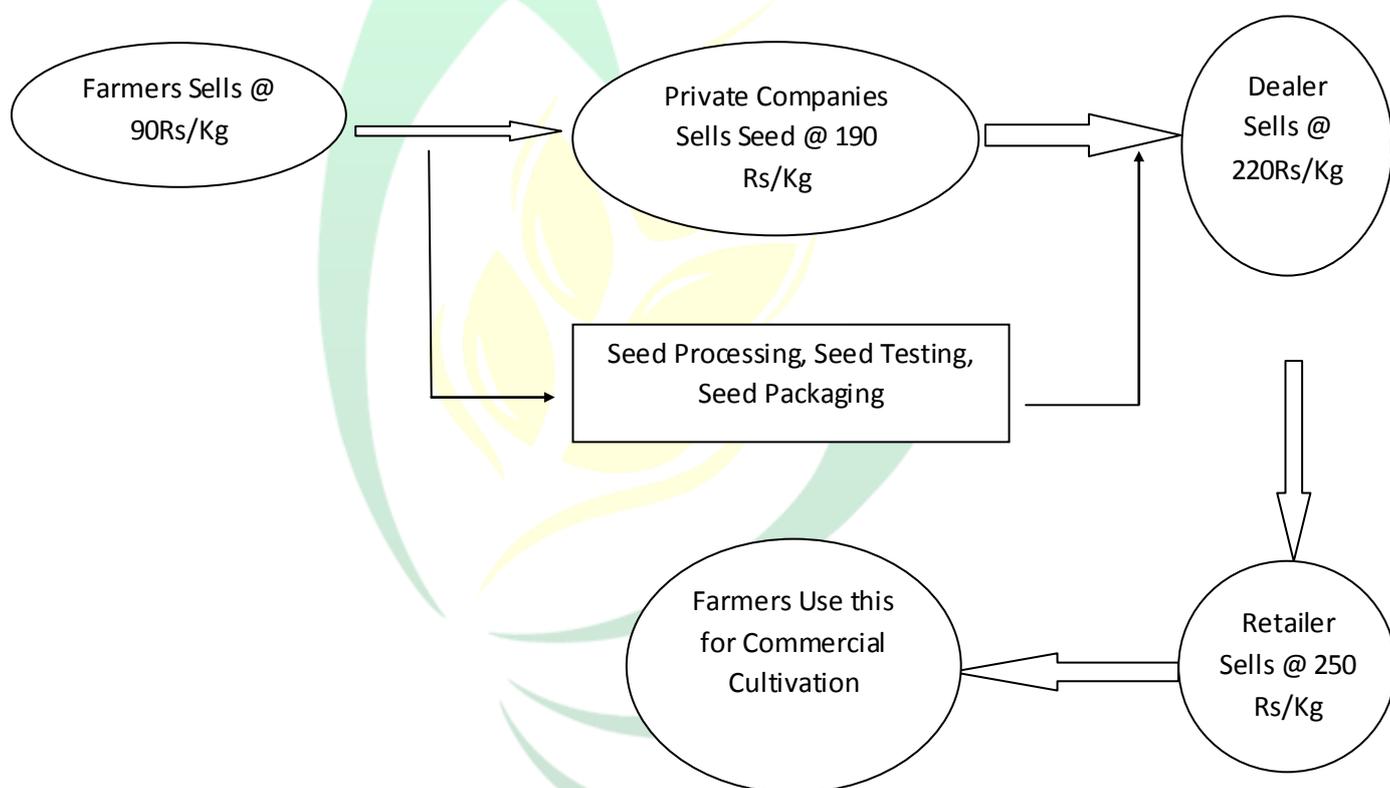
Particulars	Commercial Rice Grain Production	Hybrid Rice Seed Production
Estimated Yield	60 Quintal/ Hectare	<ul style="list-style-type: none"> • 20 Quintal/Hectare- Seed • 15 Quintal/Hectare- R line
Cost of Production per hectare	40,000 Rs/ha.	76,150 Rs/ha.
Price per Quintal	1400 Rs./ Quintal (Summer Rice Without MSP)	<ul style="list-style-type: none"> • 9000 Rs/Quintal- Seed • 1400 Rs/Quintal-R line
Gross Income	84,000 Rs/Hectare	$1,80,000 + 21,000 = 2,01,000$ Rs/Hectare
Net Income	44,000	1,24,850 Rs/Hectare
B:C	2.1	2.63

Marketing of Hybrid Rice Seed:

Four main aspects are kept in mind while seed marketing.



Marketing Channel of Hybrid Rice Seed:



- Seed Marketing is done through the above Supply Channel.
- After Buying the Hybrid seed from farmers it is processed, tested, and packed for further marketing.
- A Distributor with a broad network in the area for the selling of seed to the retailer.
- In the end, retailers which in direct contact with the farmers sells seed to them.



- Marketing of seed can be done through the Institutions like Krishi Vigyan Kendras, Farmer's Cooperative Society, and Research Stations.
- Publicity of Seed can be done by Demonstration in the field, In Exhibitions, and Village to Village Campaigning.

References:

Koutu GK., Gautam DS., Bisen UK., (2010) “Manual for Hybrid Rice Seed Production”

Verma R., Katara JL., Samantaray S., Patra B., Sahu RK., Patnaik SSC., Poonam A., Hembram B., Rao RN., Singh ON., Mahopatra T. (2016) “A Practical Guide for Successful Hybrid Seed Production in Rice – A Profitable Venture”

