



Market Demand For Biopesticides In Chhattisgarh State Under Organic Farming

Satyanarayan Soni and Neeraj Jaiswal

Abstract:-

Today is the time to save our environment. For which we all agriculturists need to protect, care for the environment and conserve the natural resources. To achieve this objective, there is an urgent need to do farming through organic farming and sustainable agriculture. Environment and natural resources can be improved by the principle of organic farming under agriculture. In this sequence, my economic analysis on the production and market demand of biopesticides in my state Chhattisgarh revealed that the demand for biopesticides is due to the traditional use of chemical pesticides and the farmers are demanding a lot due to the lack of proper and technical information. Due to which biopesticides are being produced less at some of the places in Chhattisgarh. Through this study, I want to draw attention to organic farming and sustainable agriculture along with increase the production of biopesticides.

The present study was conducted with a view to analyze major constraints of biopesticides production and marketing in Chhattisgarh state of India which is located in central region in India. The object of this research work was to determine/ assess the major problem for establishment of biopesticides production unit and constraints of production and marketing activities during the research area. In study three districts of Chhattisgarh state of India namely Raipur, Bilaspur and Raigarh district and the study was conducted with the selection of four producers. Information was obtained from the four producers and 350 respondent farmers on the problems faced in production, marketing and use of biopesticides. Many problems have been identified in this study, the main problems are as came up were traditional agricultural practices possess a dominant influence concerning the utilization of biopesticides and hence, they promote the use of pesticides that are chemical derivatives rather than biopesticides. Lack of knowledge about the subject was another significant issue the production technology of biopesticides; Producers are not interested in producing biopesticides due to limited marketing channels.

Keywords: Biopesticides; Organic farming; Sustainable agriculture; Demand; Bio-agent.

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Introduction

The problem of insect-pest is one of the major constraints for achieving higher production and better income. Problems are there for all crops and especially acute in case of commercial crops. India loses about 30% of its crops due to pests and diseases each year amount to Rs.60,000 crores annually. The use of pesticides has certainly contributed in crop protection, thus minimizing yield losses. With the introduction of intensive cropping, the use of insecticides and pesticides have increased manifolds to control harmful pests such as insects, nematodes, diseases, weeds etc during the past 3 - 4 decades. Practically pesticide applications don't follow any scientific recommendations and quite often the indiscriminate and unscientific use has adversely affected the ecological balance resulting in pest resurgence, development of resistance in the pest species and environmental pollution. However, excessive use of pesticides not only leave residues in soil, water and air but also have adverse effects on the non-target organisms such as pollinators, parasitoids, predators and wild animals.

Numerous pests, including bacteria, fungi, weeds, and insects, have a negative impact on agriculture, resulting in decreased yield and poor quality of produce. Pest control has been most commonly achieved through the

intensive use of synthetic pesticides since the 1960s. In the 1940s, a pesticide was introduced using dichloro-diphenyl-trichloroethane (DDT) and then followed by other organophosphate and carbamate pesticides. By using intensive inputs, Green Revolution technology of crop production could increase food production in developing countries chemical fertilizers and pesticides are used in various ways. Natural formulations that control pests through non-toxic mechanisms and in an eco-friendly manner are called biopesticides these technologies are not recent. Since human civilization, they have been utilized in various forms. Biopesticides, which are either living organisms (natural enemies) or products of them, pose a lesser risk to the environment and human health. Therefore; it is advantageous for pest control. *Bacillus thuringiensis* is a popular microbial biopesticide, the potential benefits of using biopesticides in agriculture and public health programmes are significant and widely known as Bt. Biopesticides are produced from toxins found in biological organisms that are harmful to the pests that invade plants. They do not affect the plant and in fact, reduce soil pollution and erosion. Hence, organic farming requires biopesticides for good crop production. Though, to raise the production of biopesticides is important for organic farming to encourage sustainable Agriculture.

The main objectives of present study:

1. To analyse the pattern of investment for establishment of production unit.
2. To work out the cost, returns and breakeven point of biopesticides production in the study area.
3. To analyse the marketing of biopesticides in the study area.

4. To identify the major constraints of biopesticides production in the study area.

Conclusion

Four producers were selected as major producer from selected districts of Chhattisgarh. Out of four producer, two producers from Raipur district, one producer

Table 1 District-wise list of selected respondents as producers

S.No.	District Name	Producers	Location
1	Bilaspur	State Bio Control Laboratory. (SBCL)	Chorbhatti Bilaspur
2	Raigarh	Bharat Biocon Private Limited. (BB Pvt.ltd.)	Raigarh
3	Raipur	<i>Bio Control Laboratory. (BCL)</i>	College of agriculture campus, IGKV, Raipur (C.G.)
4	Raipur	R K Bio Crop Care Raipur. (RKBC)	Rawanbhata Raipur

Main findings

No.	Name of Biopesticides	<i>State Bio Control Laboratory (SBCL) Chorbhatti</i>	<i>Bio Control Laboratory Raipur</i>	Bharat Biocon Private Limited, Raigarh	R K Bio Crop Care Raipur	
1.	Indira Trichoderma (kg)	7489	350	-	-	
2.	Trichoderma Capsule (Number)	2540	213	15469	6825	
3.	Metarhizium (Ltr.)	2389	134	7896	5264	
4.	<i>Pseudomonas fluorescens</i>	In Kg	900	69	8960	6258
		In Ltr.	1600	-	5689	3589
5.	<i>Bacillus thuringiensis</i> (Bt) (kg)	1050	29	27945	16585	
6.	<i>Bacillus subtilis</i> (Ltr.)	700	-	17891	8945	
7.	<i>Beauveria bassiana</i> (Ltr.)	1284	99	35870	4251	
8.	<i>Verticillium sp. (Lecanicillium lecanii)</i> (Ltr.)	864	-	28976	-	

from Raigarh district and one farmer from Bilaspur district. A list of selected producer with their location is shown below:

Suggestions for future Research

1. The empirical finding indicates that biopesticides were applied in lower amount for crop protection and excessive use of chemical pesticides as per the recommendation. Therefore, it is being suggested to the policy makers to encourage the crop growers that applying balance doses of pesticides with including organic pesticides like biopesticide.
2. The prices of chemical pesticides are another main problem in fertilizer use for paddy cultivation which result in increase in cost of cultivation of crop. It is being suggested to minimize the cost of pesticides with replacing the biopesticides.
3. Farmers are unaware about the recommended doses of biopesticides. Therefore, it is suggested that government should start the training and campaigning programmes to aware for recommended and balance use of biopesticides.
4. Untimely and supply of adulterated biopesticides in the local market is another major problem in pesticides use for crop protection. Hence, there is a need to strengthen the biopesticides distribution channel through PACS and government should ban adulterated biopesticides in the market.
5. Take help from KVKs and from technical producers who have knowledge and experience on biopesticides production.
6. Provide knowledge for technical production.
7. Awareness about research and development investment for biopesticides production.
8. Provide collaboration with research institutions.
9. Arrangement of appropriate demonstration trials.
10. Develop targeted marketing campaigns.
11. Make long term relationships with customers by providing reliable products.
12. Government should regulate to producer for maintaining quality production of biopesticides.

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