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Analysis of constraints experienced by turmeric growers while using biomix and their suggestions

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Abstract

In the Marathwada region of Maharashtra state, the current study was carried out in 2023–2024 with the goal of "to know the constraints faced by turmeric growers while using the biomix and to obtain their suggestions". Parbhani and Hingoli district in the state of Maharashtra was chosen for the study. Two tehsils, Parbhani from Parbhani district and Basmat from Hingoli district selected. Six villages from each tehsil/mandal were chosen with a significant number of turmeric growers using biomix, and Ten respondents were chosen at Purposively from each village that was considered, making the sample size 120. Ex-post-facto research design was used for the study. Data was gathered using a well-structured interview schedule created with the study's objective in mind. The respondents were asked to mention their views about constraints faced while using biomix. The responses about constraints were obtained by using close end questions. The responses were quantified and ranked. Also with the objective of eliciting suggestions of respondents regarding the use of biomix, respondents were asked to give their view points to promote use of biomix. Later suggestions were sought by using open-ended questions. Further the responses were quantified and ranked. To interpret findings and draw conclusions, statistical tools such as frequency and percentage were used.

Keywords: Marathwada, turmeric growers, biomix, constraints, suggestions

Introduction

Turmeric is an important spice grown in India since ancient times. It is referred as Indian saffron and commonly called as *Haladi/Halad*. India is the largest producer, consumer and exporter of turmeric in the world.

Turmeric is a flowering plant, *Curcuma longa*, of the ginger family, Zingiberaceae, the rhizomes of which are used in cooking. The plant is a perennial, rhizomatous, herbaceous plant native to the Indian subcontinent and Southeast Asia.

According to the Directorate of Agriculture, Maharashtra (2023), the state's annual turmeric production stands at approximately 3.8 lakh tonnes. Districts like Sangli, Satara, Kolhapur, Hingoli, Nanded, Amravati and Buldhana are prominent turmeric producers. (agritimes.co.in)

In 2005, Prof. Dr. V.T. Jadhav created an experimental product for managing citrus decline and introduced biocontrol to the Marathwada region (at VNMKV, Parbhani). He called it "Biomix," which is a combination of *P. fluorescens* and *Trichoderma spp.* Biomix was created by incorporating certain biofungicides, biopesticides, and growth-promoting bioagents, taking into account the turmeric's performance, literature, and issues. All of turmeric's significant issues were resolved by this product.

Biomix was made with a combination of growth-promoting bioagents, biofungicides, and biopesticides. The Department of Plant Pathology introduced biocontrol to the Marathwada region in 2005 and developed an experimental product for managing citrus decline, called it "Biomix" (a combination of *P. fluorescens* and *Trichoderma spp.*). Biopesticides and biofertilizers are mixed with an organic product called biomix. The primary characteristic of Biomix is its ability to function as a fungicide, insecticide, and so forth. The Biomix is thought to be a viable substitute for chemical pesticides in terms of enhancing germination and providing plant protection for long-term agricultural productivity. *Aspergillus niger*, *Pseudomonas striata*, *Neumoria relyi*, *Gluconacetobactor*, *Bacillus subtilis*, *PPFM*, *Tricoderma harzianum*, *Pseudomonas fluorescens*, *Beauveria bassiana*, *Metarhizium anisopliae*, *Paecilomyces lilacinus*, *verticillium lecanii*, and *Azospirillum brasilence* are some

of the specific species of microbes that make up Biomix, a unique and well-balanced blend. Given the extent of losses at the farm level, it is clear that, in order to reduce losses, control measure techniques including the use of biomix in turmeric crop cultivation must be used. Therefore, it's important to gather data on farmers' attitudes towards using biomix, identify the many problems they run into when using it, and offer some suggestions. The present study was designed to analyze the constraints and suggestions experienced by turmeric growers while using biomix.

Methodology

The present study was conducted with the main objective to know the constraints faced by turmeric growers while using biomix and to obtain their suggestions. The study was conducted in Parbhani and Hingoli district of Marathwada region of Maharashtra. Two tehsils, Parbhani from Parbhani

district and Basmat from Hingoli district selected. Six villages from each tehsil/mandal were chosen with a significant number of turmeric growers using biomix, and ten respondents were chosen at purposively from each village that was considered, making the sample size 120.

The data was collected by personal interview and "ex-post-facto" research design was used for conducting the study. The collected data was processed and statistically analyzed by using statistical tools like frequency and percentage, mean, standard deviation and coefficient of correlation. The independent variables were education, size of family, farming experience, knowledge, land holding, Area Under turmeric crop, annual income, social participation, extension contact, mass media exposure, risk orientation and the only dependent variable was attitude.

Results and Discussion

Table 1: Constraints faced by the turmeric growers in the use of biomix

Sr. No.	Constraints	F	%	Rank
1	Lack of information about Biomix	46	38.33	V
2	Lack of information on how to use biomix properly	69	57.50	II
3	Lack of awareness about which method of biomix should be used.	87	72.50	I
4	Biomix is not available at the right time.	56	46.67	III
5	Biomix has low sustainability.	54	45.00	IV
6	Biomix technology is hard to handle.	42	35.00	VI

It was revealed from table1, that, 72.50 per cent faced the constraint of lack of awareness about which method of biomix should be used, 57.50 per cent of the turmeric growers faced constraint of lack of information on how to use biomix properly, 46.67 per cent faced constraint that

biomix is not available at the right time, 45.00 per cent faced constraint of biomix has low sustainability, 38.33 per cent faced constraint of lack of information about biomix and 35.00 per cent of them faced constraint that biomix technology is hard to handle.

Table 2: Suggestions given by the turmeric growers to overcome constraints faced in the use of biomix

Sr. No.	Suggestions	F	%	Rank
1	Biomix units should provide information	84	70.00	III
2	A training program should be conducted on biomix usage	86	71.67	II
3	Awareness should be created regarding the proper method of administering biomix	94	78.33	I
4	Provide knowledge of technology maintenance.	60	50.00	V
5	Biomix should be made available in abundant quantity at the right time	81	67.50	IV
6	Sustainability of Biomix should be increased	54	45.00	VI

According to the table 2, the suggestions given by respondents to overcome constraints are farmers' awareness should be created regarding the proper method of administering biomix (78.33 %), a training program should be conducted on biomix usage (71.67 %), biomix units should provide information (70.00 %), biomix should be made available in abundant quantity at the right time (67.50 %), provide knowledge of technology maintenance (50.00 %) and sustainability of biomix should be increased (45.00 %).

Conclusion

Major constraints faced by turmeric growers while using the biomix was biomix is not available at the right time, lack of information on how to use biomix properly, lack of information about biomix, lack of awareness about which method of biomix should be used, biomix has low sustainability and biomix technology is hard to handle.

Major suggestions given by the turmeric growers to overcome the problems faced by them was biomix should be made available in abundant quantity at the right time, a training program should be conducted on biomix usage, biomix units should provide information, awareness should

be created regarding the proper method of administering biomix, sustainability of biomix should be increased and provide knowledge of technology maintenance. This will be helpful in changing farmer's attitude from less favourable to favourable and favourable to highly favourable and in adopting such innovations.

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