Title: Farmer First- An Interactive Farmers-Scientist Interface

1. **Title**: Success story of Sugarcane + Cauliflower intercropping technology in Pune District
2. **Category**: Agriculture
3. **Challenges**:

Pune District is comes under the western part of Maharashtra. This district comprises of 13 tahsils and 1866 villages. The climate of the district is categorized by dry atmosphere except during mansoon. The average rainfall is 905 mm mostly during the months of June to September Sugarcane is one of the important cash crop grown in different tahsils of Pune District. Sugar industries which is based on the raw material, occupied a pivoted place on the economic map of the Pune district. The Area and production under sugarcane demand is increasing in Pune district continuously because of some factors like increase in relative price of sugarcane, sugar and jaggory, easily availability of large numbers of sugar factories. Moreover the productivity of the sugarcane has decreased continuously because of some problems like uneven distribution of rainfall, increased incidence of pests like white grub, pokka boing, unbalanced use of fertilizers and cost of pesticides etc.

To overcome to these problems and to increase the income of farmers, it is necessary to find out the best technology of cropping system particularly the intercropping cultivation This system helps to improve the utilization of natural resources i.e. sunlight, land, water and combine practices often resulting in increased productivity per unit area and time. Intercropping of sugarcane with cauliflower found to be more suitable in Pune district to tackle the problem of low productivity due to their compatibility. Though this sugarcane intercropping with cauliflower technology is already adopting in most of the part of Pune region but the methods of adoption among the farmers are traditional which involves more cost of production.

On the basis of feedback received from farmers the Farmers First project on Sugarcane + cauliflower intercropping was allotted by MPKV Rahuri to Regional Extension Centre, College of Agriculture, Pune under Rasthriya Krushi Vikas Yojana project. After allotment, this project was being implemented during the year 2016-17 and 2017-18 with the objectives to demonstrate MPKV Rahuri improved technology through cluster approaches on farmer's field for improving the productivity and to tackle the above said problems.

4. **Initiatives**

Haveli tahsils in Pune district comprises large area under Sugarcane + vegetable intercropping cultivation. Therefore, for the said demonstrations (Sugarcane + Cauliflower) two villages i.e. Naygaon and Saste from Haveli tahsils were selected and 100 small and marginal farmers from each village were identified for the demonstrations. The block demonstrations of this technology were organized in the two selected villages in

clusters on 40 hectors of farmer's fields each with providing the improved package of practices.

As per the cost norms of RKVY-FF of Rs.3200/- per demonstration (including cost of critical inputs like seed sets, vegetable seedlings, pesticides, bio fertilizers and chemical fertilizers etc. For 0.40 ha area for Sugarcane + Cauliflower intercropping technology which has been finalized by the crop specialist MPKV, Rahuri. Total 100 demonstrations on Sugarcane + Cauliflower technology in each villages i.e at Saste and Naygaon on each of 0.40 ha field were organized on total 40 ha. After the selection of villages and farmers for the demonstrations with an object to know the detail information of this technology the first farmers training programme was organized on 4th January, 2017 at Naigaon Peth, Tal-Haveli Dist Pune. In the presence of Shri. Chandrakant Bhor SDO Pune, TAO, Mandal AO Agriculture Supervisor and Agriculture Assistants of Haveli tahsil. During the training the detail information about this technology including its benefits were discussed thoroughly.

During the implementation of this project on Sugarcane+ Cauliflower intercropping, some need based extension activities were organized for the farmers, extension functionaries for farmers-scientists interactions and spreading of the improved university technologies. The details of the extension activities carried out during the implementation of this project are as under.

Table.1: Extension activities carried out during the year 2016-17 & 2017-18

Sr. No	Date	Programme	Place	No of Farmers	No of officers
1.	04.01.17	Farmers training	Naigaon	60	04
2.	23.3.17	Farmers training	Sashte	250	09
3.	11.03.17	Field visit	Sashte	25	02
4.	27.11.17	Group Discussion	Naigaon	45	03
5.	29.11.17	Field visit	Naigaon	25	04
6.	30.11.17	Famers Scientist Interaction	Sashte	35	02
7.	30.11.17	Farmers training	Naigaon	150	05
8.	16.02.18	Fields visit	Sashte	35	01
9.	20.02.18	Group meeting	Naigaon	35	01

5. **Key Results**:

The data on yield and monetary returns of sugarcane + cauliflower intercropping demonstration is presented in Table 2 and Table.3.

Table 2. Yield and Monetary returns of Sugarcane + Cauliflower intercropping system (100 demonstrations) during 2016-17

Crop	Average yield (t/acre)		Monetary returns (Rs./acre)		Average cost of production (Rs./acre)		Gross monetary returns (Rs./acre)		Average B:C ratio	
	Demo	FP	Demo	FP	Demo	FP	Demo	FP	Demo	FP
Sugarcane	62.45	47.5	153007	116375	75142	67140	180220	134993	2.39	2.01
Cauliflower	5.34	3.65	27212	18618						

Table 3. Yield and Monetary returns of Sugarcane + Cauliflower intercropping system (100 demonstrations) during 2017-18

Crop	Average yield (t/acre)		Monetary returns (Rs./acre)		Average cost of production (Rs./acre)		Gross monetary returns (Rs./acre)		Average B:C ratio	
	Demo	FP	Demo	FP	Demo	FP	Demo	FP	Demo	FP
Sugarcane	67.39	50.48	154997	116104	72924	64780	182717	134554	2.50	2.07
Cauliflower	6.16	4.10	27720	18450						

Note: Average Market rate –Rs.2300/- per tone of sugarcane
Average Market rate - Rs.4500/- per quintal of cauliflower
Demo- Demonstration
FP- Farmer practice
B: C –Benefit- Cost ratio

From the data it was revealed that, the average yield tone per acre of sugarcane by using university recommended package of practices is found to be more to the tune of 62.39 t/acre and 67.39 t/acre as compared to farmer's package of practices which was recorded 47.5 t/acre and 50.48 t/acre in 2016-17 and 2017-18 respectively. Where as the yield of cauliflower is found to be increased as 5.34t/acre and 6.16 t/acre as compared to farmers practice 3.65 t/acre and 4.10t/acre during the year 2016-17 and 2017-18 respectively. As per the B: C ratios concerned the maximum B:C ratio was observed in university recommended package of practices which was 2.39 and 2.50 as compared to the farmers package of practices i.e. 2.01 and 2.07 during the year 2016-17 and 2017-18 respectively.

From above findings it is concluded that the farmer's fetches maximum income through university interventations as compared to farmer's package practices.

6. **Impact**:

Sugarcane + cauliflower intercropping practice enhanced the yield of both sugarcane and intercropping (cauliflower) by 14.95 t/acr and 1.69 t/acre respectively during the year 2016-17 and 16.91 t/acre and 2.06 t/acre respectively during the year 2017-18. The net saving of cost of cultivation of intercropping is Rs. 8002/- per acre over famers practice during 2016-17 whereas Rs. 8144/- per acre net saving of cost of cultivation of intercropping during the year 2017-18. Because of the implementation of university improved recommended technology farmers received additional income Rs. 45227/- and Rs. 48143/- during 2016-17 and 2017-18 respectively. This project actively enhanced unity, thinking of power and sharing of ideas among the farmers. In addition to this they got knowledge of other enterprises of farming system through different training programmers and continuous with the dialog with the scientists of Regional Extension Centre, College of Agriculture, Pune.

Additional Information:

1. **List of all project partners and/or donors who supported the work**

Sr. No	Name	Designation
1	Prof M. M. Desai	Principal Investigator, RKVY, Farmer First Project
2	Prof. B. B. Patil	Co-Principal Investigator, RKVY, Farmer First Project

Guidance

Sr. No	Name	Designation
1	Dr. K. P. Vishwanatha	Hon. Vice Chancellor, MPKV, Rahuri
2	Dr. S. R. Gadakh	Director of Research& Director of Extension Education, MPKV, Rahuri

PROJECT PHOTOGRAPHS

Guidance of Dr. K.D.Kokate, DEE, MPKV, Rahuri and Dr.H.L.Ghadge Extension Agronomist REC,AC,Pune in farmers training at Naigaon, Tal Haveli

Inputs distribution and Field Visit to demonstration plot at Sashte, Tal Haveli

Visit to demonstration plots at Sashte, Tal Haveli, Dist. Pune

Visit to demonstration plots at Naigaon, Tal Haveli

NEWS IN DAILY NEWS PAPER

हवेलीतील ऊस उत्पादकांसाठी आज नायगाव येथे प्रशिक्षण

उरुळी कांचन, ता. २९ : राष्ट्रीय कृषी विकास योजनेअंतर्गत हवेली तालुक्यातील शेतकऱ्यांसाठी पूर्वहंगामी ऊस, आंतरपीक मार्गदर्शन व प्रशिक्षणाचे आयोजन नायगाव (ता. हवेली) येथे गुरुवारी (ता. ३०) करण्यात येणार असल्याची माहिती उपसरपंच राजेंद्र चौधरी यांनी दिली.

याबाबत चौधरी म्हणाले, की कृषी विभाग व महात्मा फुले कृषी विद्यापीठ राहुरी यांच्या संयुक्त विद्यमाने हे शिबिर होत आहे. महात्मा फुले कृषी विद्यापीठाचे संचालक डॉ. किरण कोकाटे, पुणे येथील कृषी महाविद्यालयाचे विभागीय विस्तार केंद्र प्राध्यापक महेंद्र मोटे, डॉ. हनुमंत घाडगे, तालुका कृषी अधिकारी प्रवीण कदम, डॉ. प्रमोद रसाळ, उपविभागीय अधिकारी चंद्रकांत भोर, मंडल कृषी अधिकारी माणिक वानखेडे हे या वेळी मार्गदर्शन करणार आहेत.

शिबिराचा प्रारंभ सकाळी साडेदहा वाजता होणार आहे. शेतकऱ्यांनी सकाळी दहा ते साडेदहा या वेळेत कृषी सहायक महेश सुरडकर यांच्याकडे नावनोंदणी करावी, असे आवाहन चौधरी यांनी केले.

ऊस उत्पादन वाढीसाठी नायगावमध्ये कार्यशाळा

नायगाव (ता. हवेली) येथे महात्मा फुले विद्यापीठ विभागीय विस्तार केंद्र, कृषी महाविद्यालय पुणे यांच्या संयुक्त विद्यमाने शेतकरी प्रशिक्षण कार्यशाळा घेण्यात आली.

उरुळी कांचन, (वार्ताहर) : महात्मा फुले विद्यापीठ विभागीय विस्तार केंद्र, कृषी महाविद्यालय पुणे यांच्या संयुक्त विद्यमाने राष्ट्रीय कृषी विकास योजना–शेतकरी प्रथम पुर्व हंगामी ऊस, आंतरपिक प्रात्यक्षिक, शेतकरी प्रशिक्षणसंदर्भात नायगाव (ता. हवेली) येथे कार्यशाळा घेण्यात आली. यावेळी महात्मा फुले कृषी राहुरी विद्यापीठाचे विस्तार शिक्षण संचालक डॉ. किरण कोकाटे यांनी येथील शेतकरी वर्गास ऊस उत्पादन वाढीसाठी संदर्भात तसेच आधुनिक पध्दतीने शेती नवनवीन तंत्रज्ञानाबाबत मार्गदर्शन केले.

यावेळी पुणे येथील कृषी महाविद्यालयाचे विभागीय विस्तार केंद्र प्राध्यापक डॉ. हनुमंत घाडगे, प्राचार्य डॉ. प्रमोद रसाळ, उपविभागीय अधिकारी चंद्रकांत भोर, मंडल कृषी अधिकारी माणिक वानखेडे, सरपंच राजेंद्र चौधरी, मणीभाई पतसंस्थेचे उपाध्यक्ष रामदास चौधरी, यशवंतचे माजी संचालक दादासाहेब चौधरी, ग्रामपंचायत सदस्य संतोष हगवणे, रंगनाथ कड, गणपत कड, नितिन हगवणे, तालुका कृषी अधिकारी प्रविण कदम, कृषी सहाय्यक महेश सुरडकर, तंटामुक्ती समिती अध्यक्ष उत्तम घुले, जिल्हा कृषी आधिकारी, तालुका कृषी अधिकारी विविध पदाधिकारी ग्रामस्थ शेतकरी महिला उपस्थित होते. कार्यक्रमाचे प्रास्ताविक सरपंच राजेंद्र चौधरी यांनी केले.

महात्मा फुले कृषी विद्यापीठाच्या विस्तार शिक्षण संचालनालयामार्फत कृषी विभागाच्या राष्ट्रीय कृषि विकास योजनेअंतर्गत 'शेतकरी प्रथम' हा प्रकल्प उत्पादन वाढीसाठी विद्यापीठाच्या कार्यक्षेत्रातील दहा जिल्ह्यांमध्ये राबविण्यात येत आहे.