Title: Farmer FIRST: An Interactive Farmer – Scientist Interface

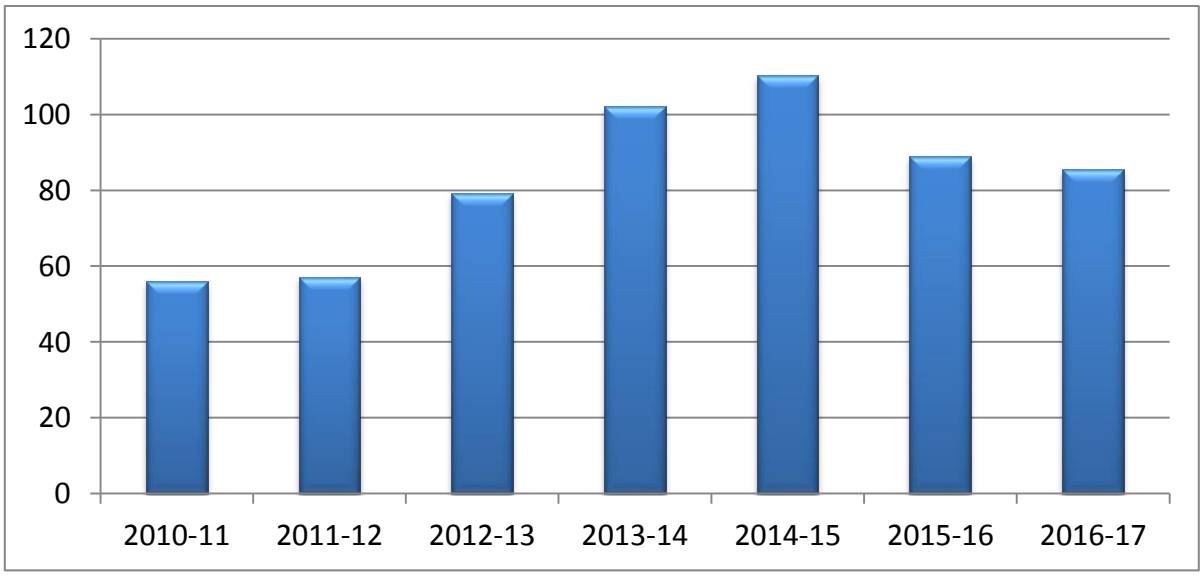
Category: Agriculture

Integrated Crop Management cluster field demonstrations were organized on 100 small and marginal farmers field total of 40 hectare area during kharif 2016 in Nandurbar district of Maharashtra State. Integrated Crop Management practices recommended by Mahatma Phule Krishi Vidyapeeth, Rahuri, Dist- Ahmednagar, in Bt cotton enhanced the yield of seed cotton by 36.58 per cent and saving of Rs. 2282/- per hectare in cost of production.

Challenges

After the introduction of Bt cotton hybrids, again our cropping pattern is proceeding towards mono cropping, which is dangerous for soil health and specific pest epidemic. It is observed that area under cotton was increased constantly up to 2014 in Nandurbar district experiencing different problems and increased cost of production. The problems were related to soil health, crop nutrition, infestation of sucking pest and diseases in Bt cotton. To tackle these problems and meet out the gaps in adoption of technology, it is necessary to create awareness regarding soil health, use of bio-pesticides to reduce the cost of production and use of bio-fertilizers and micro-nutrients for balanced crop nutrition.

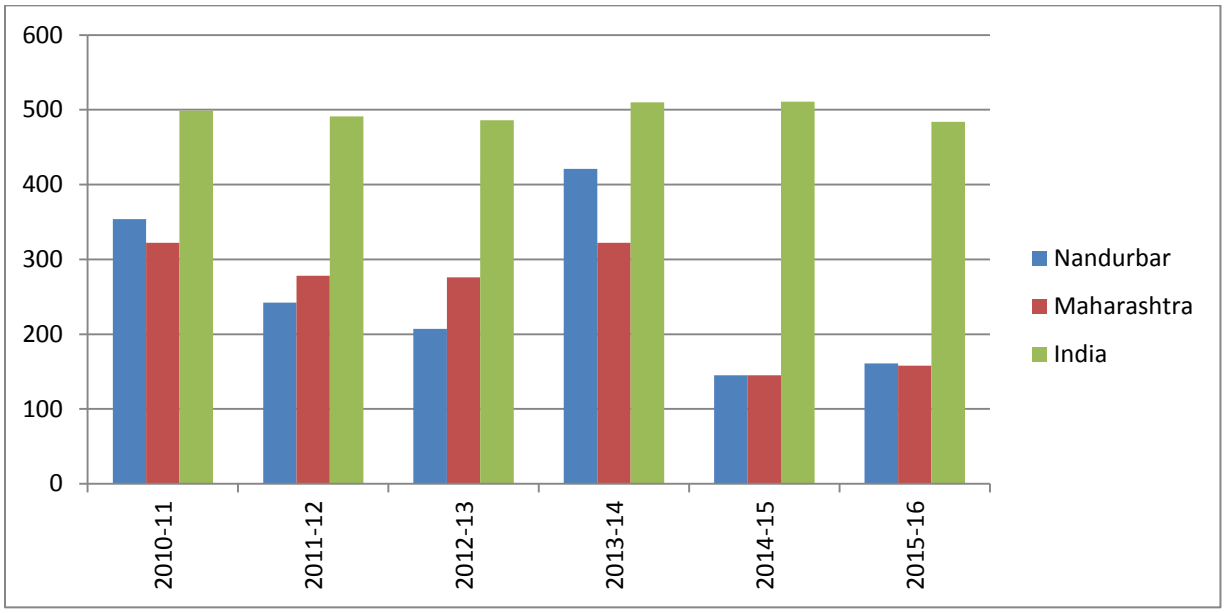
Fig.-1: Year wise area under Cotton in Nandurbar district ('000' ha)



This attempt should be done with more number of small and marginal farmers in cluster and on large concentrated area with complete package of technology on sharing basis. Mahatma Phule Krishi Vidyapeeth (MPKV) has a good package of technology to tackle these problems.

However, the technologies were used / demonstrated in fragments and in disperse manner to cover large geographical area in minimum time with weak adoption and no use of motive extension tools for horizontal expansion of the impact of technologies. During 2015-16, Directorate of Extension Education of MPKV, submitted a project entitled, "**Farmer FIRST"** under RKVY to the State Department of Agriculture and we get the opportunity to demonstrate the technologies in cluster, in package and on large scale with inclusion of different tools of extension education.

Fig.-2: Productivity of Cotton (Lint kg ha^{-1}) in Nandurbar district



Farmer FIRST project on "**cotton based production technology"** was allotted by MPKV to the Regional Extension Centre, Dhule to implement on farmers field in Nandurbar district during *Kharif* 2016. As 33 per cent of the total area is under cotton in the district, it is necessary to work on this crop for small and marginal farmers, those which are suffering more. Baldane, Ghotane and Dhavade villages were selected from Nandurbar tahsil in the district. The average annual rainfall of the *Mandal* is about 600 mm, in which the villages cluster is located. The villages cluster selected for the activity was also located in Scarcity Zone of Agro-climate, where optimum yields are often challenging.

Initiatives

Cluster field demonstrations on Bt cotton with Integrated Crop Management package were organized on 100 small and marginal farmers field on total 40 hectare (0.40 ha each) area

during kharif 2016, with complete package of technology on sharing basis. The details of technology package demonstrated are given in table-1.

Table-1: Technology package for Bt cotton used for cluster demonstrations per acre

Sr. No.	Parameter	Share of Farmers	Farmer FIRST (RKVY) share	Solution for
1.	Soil Health Cards	--	1 sample	To know the soil nutrient status
2.	Seed (*Bt* Cotton)	1.00 kg	--	
3.	Organic manure	4.00 tone	--	Part of Integrated Nutrient Management
4.	**Bio-fertilizers**			
	a) *Azotobacter*	--	250 g	Part of Integrated Nutrient Management
	b) PSB	--	250 g	
	c) *Trichoderma*	--	1.00 kg	Low cost disease control measure
5.	Chemical fertilizers	125:65:65 kg NPK ha^{-1}	--	Balanced nutrient management
6.	**Micro-nutrients**			
	a) Zinc sulphate	--	5 kg	Balanced nutrient management
	b) Ferrous sulphate	5.00 kg	--	
7.	**Plant protection**			
	a) Verticillium	--	1 kg	Bio-pesticide for control of sucking pest
	b) Neem oil	--	0.500 liter	
	c) Dimethoate 35 EC	--	0.250 liter	Supportive chemical pesticide
	d) Copper oxychloride	--	0.500 kg	Disease management
	e) Streptocycline	--	24 g	
	f) Yellow sticky Trap	--	20 Nos.	Mechanical method of control of sucking pest
	g) Trap crops (cow pea, maize, merry gold)	200 g	--	Management of pest

As per the cost norms of RKVY of Rs.3200/- per demonstration of 0.40 ha area for cotton, the critical inputs were finalized by the Crop Specialist of MPKV. For field demonstrations on cotton three villages cluster was identified in Scarcity Zone of Nandurbar tahsil with the help of State Department of Agriculture. The main focal village was Baldane from where 83 farmers and surrounding 17 farmers were from the adjoining two villages. In all total

100 demonstrations on cotton each of 0.40 ha were organized on total 40 ha area. First farmer meeting was organized on 5th June, 2016 at village Baldane in the presence of Taluka Agriculture Officer, *Mandal* Agriculture Officer, concerned Agriculture Assistant and KVK scientists. The problems in cotton, willingness of participation of farmers in the project, objectives of the project and activities during the project were discussed in the meeting. Then, registration of farmers as per their willing to participate in the project was done and 75 male farmers and 25 women farmers registered their names. Out of 100 participating farmers, 91 were marginal and small farmers.

The composite soil sample from each demonstration plot was collected for chemical analysis before sowing. The soil parameters viz; pH, EC, organic carbon, calcium carbonate, available N, P, K, Zn, Mn, Cu, Fe were analysis and prepared Soil Health Cards. The data on soil analysis revealed that 72 soil samples found > 8 pH value and 28 samples ranges from 8 to 8.5 valus of pH (saline). The Electrical Conductivity of all the soils samples were less than 1dS m^{-1}. The organic carbon content of 51 soil samples was medium (0.4 to 0.60 %), however, 49 samples plots were low in organic carbon content (0.21 to 0.40 %). Regarding micro-nutrients 61 and 53 per cent soil samples were found low in Ferrous and Zinc, respectively. While all the samples tested were sufficient in copper and manganese.

While implementing the project on cotton, some need based extension activities were organized for the farmers and extension functionaries for farmers – scientists interactions and horizontal spread of technology. The details of the programmes organized are given in table-2.

Table 2 : Extension activities organized during project period

Sr. No.	Activity	Date	Venue	Farmers participation	Extension Functionaries
1.	Farmers meeting	5.6.2016	Baldane	200	5
2.	*Shivar pheri*	2.9.2016	Baldane	156	6
3.	Farmers training	5.10.2016	Baldane	100	4
4.	Training on goat keeping	25.10.2016	Baldane	56	2
5.	Agril. Officer's training	18.10.2016	KVK, Kolade	--	25
6.	Farmers Rally	19.12.2016	Baldane	270	9
			Total	**782**	**51**

Key result / insight / interesting fact

Mostly Bt cotton varieties were used by the farmers for sowing. For the management of sucking pest, verticillium, Neem oil, yellow sticky traps and trap crops were used during the crop growth. Aphids, jassids and white flies were very well managed due to use of verticillium, Neem oil, yellow sticky traps and trap crops. After completion of pickings in cotton, the data on yield, production cost and market prices were collected and complied. The whole data is divided in to five farming situations as per method of irrigation, protective irrigation, sowing period and rainfed situation. The data is presented in table-3.

Table 3 : Seed cotton yield of demonstrations plots

Sr. No.	Farming situation	Associated Farmers	Total area (ha)	Maximum yield (qt/ha)	Minimum yield(qt/ha)	Average yield (qt/ha)
1.	Pre-monsoon sowing (Sufficient irrigation water & Drip system)	08	3.20	33.75	25.00	28.68
2.	Pre-monsoon sowing (Protective irrigation & Drip system)	17	6.80	24.00	17.75	20.05
3.	Sowing after commencement of Monsoon (Protective irrigation & Drip system)	36	14.40	32.50	20.50	22.98
4.	Sowing after commencement of Monsoon (Protective irrigation & traditional system)	27	10.80	20.50	18.25	19.38
5.	Rainfed	12	4.80	18.00	16.25	17.38
	Total	**100**	**40**	**--**	**--**	**--**
	Average	**--**	**0.40**	**25.75**	**19.55**	**21.28**

The sowing of pre-monsoon cotton was done during last week of May, 2016. On an average, the pre-monsoon cotton produced 15 % higher yields than the crop sown after commencement of monsoon. The crop under sufficient irrigation and on protective irrigation either sown pre-monsoon or on the commencement of monsoon produced 31 per cent higher yields than rainfed crop. The average productivity of cotton of 100 demonstrations was 21.28 qt ha^{-1} (Table 4).

Table 4 : Average seed cotton yield and monetary benefits of demonstrations

Crop	Average yield (qt ha^{-1})		Average cost of production (Rs. ha^{-1})		Gross monetary returns (Rs. ha^{-1})		Average B:C ratio	
	Demon	Farmer practice	Demon	Farmer practice	Demon	Farmer practice	Demon	Farmer practice
Bt cotton	21.28	15.58	42,090	44,372	1,09,720	80,330	2.61	1.81

Note: Average Market rate –Rs. 5156 per quintal of seed cotton

Impact

Integrated Crop Management practices in Bt cotton enhanced the yield of seed cotton by 36.58 per cent and net saving of Rs. 2282/- per hectare in cost of production. The additional income of Rs. 11,756/- per farmer (0.40 ha) was achieved over farmers practice. The additional total turnover of Rs. 11,75,600/- of 100 farmers was realized from sale of seed cotton in the cluster villages by investing Rs. 3,20,000/- on additional critical inputs. Project activity enhanced unity, thinking power and sharing of ideas among the farmers. In addition to this, they got knowledge of other enterprises of Farming System through different training programmes and continuous contact of Scientists of Regional Extension Center.

Lessons Learned

If the technologies are imparted in package form and at proper time with its proper knowledge, it gives long lasting impact. Complete cluster remember and became a live proof of technology success. In surrounding villages, always there was discussion that what is something special in that Farmer FIRST cluster. In initial phase of project, while selection of villages, it was challenging to get the participation of farmers. It is learning from the project activity that to enter in any of the village, one must have secured good faith of one of the leading farmer in that cluster, which is the solution to overcome the difficulties. If I am asked to do it all over again, I will increase the number of partner farmers, add farmers farm school activity, capacity building in off farm income generation and inclusion of other social parameters activity.

Supporting Quotes and Images

One farm woman, who is postgraduate house wife, Mrs. Ashabai Rajput from Baldane village, during Farmers Rally quoted that, "this the first time in the history of our village, a project like Farmer FIRST is implemented in our village". She has made a very cute quote that, "we usually herd "**Ladies First"**, now first time we herd "**Farmer FIRST".** Farmer FIRST

means farmer is the first priority of Government". "In addition to cotton, we got the knowledge of improved goat keeping which is the backbone of dry land farming in Nandurbar tahsil". Mr. Komalsing Girase, who is the main recourse person for us in the Baldane village, quoted that, "use of bio-pesticides, yellow sticky traps and trap crops saved our expenditure on plant protection and human health". "We also learn that soil health should be checked frequently and crop nutrition should be done as per analysis". He also opined that, "Farmers collective farm visits (*Shivar Pheri*) must be increased while implementing such projects. This extension tool enhances face to face Farmer – Scientist interactions".

Additional Information

a) Project partners and Linkages

1. Directorate of Extension Education, Mahatma Phule Krishi Vidyapeeth, Rahuri (Main Center)
2. Regional Extension Center, College of Agriculture, Dhule (Project Implementing Center)
3. State Department of Agriculture, Maharashtra State (Funding Agency)
4. District Level Department of Agriculture, Nandurbar (Supporting hand)
5. Krishi Vigyan Kendra, Kolade, Tal & Dist- Nandurbar (Supporting hand)

Contact person for story

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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.	Dr. M. S. Mahajan	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 & Direction of Extension Education, MPKV, Rahuri

PROJECT PHOGRAPHS

Benchmark Survey and Technology kit Distribution

Shivar Pheri

Farmers Training

Agriculture Officers Training

Farmers Rally cum Kisan Gosti & Agril. Exhibition

Cotton Demonstration Plots

NEWS in Daily News Paper

सकाळ

अग्रोवन

मेरा लोकल रिपोर्टर...

जळगाव सोमवार, ५ सप्टेंबर २०१६ । पाने १६ । किंमत ₹ ३ ।

व्यवस्थापनातून वाढवा कापूस उत्पादन : डॉ. महाजन

नंदुरबार : तालुक्यात राष्ट्रीय कृषी विकास योजनेअंतर्गत काढण्यात आलेली शिवार फेरी.

नंदुरबार : अन्नद्रव व पाण्याचे योग्य व्यवस्थापन राखून शेतकऱ्यांनी कापसाचे एकरी उत्पादन वाढवावे, असे प्रतिपादन धुळे येथील विभागीय विस्तार केंद्राचे प्रमुख डॉ. मुरलीधर महाजन यांनी केले.

तालुक्यातील बलदाणे, धोटाणे, भादवड आदी गावांतील शंभरावर शेतकऱ्यांची राष्ट्रीय कृषी विकास योजनेअंतर्गत निवड करण्यात आली आहे. त्यांच्यासाठी शिवार फेरीचे आयोजन नुकतेच करण्यात आले. त्यात शेतकऱ्यांना मार्गदर्शन करताना डॉ. महाजन बोलत होते. या वेळी बलदाणे येथील सरपंच कोमलसिंग गिरासे, नंदुरबारचे जिल्हा अधीक्षक कृषी अधिकारी मधुकर पन्हाळे, रामकृष्ण गिरासे, राजेंद्र पाटील, उदयसिंग गिरासे, जयदेव पाटील, अशोक पाटील, कोमलसिंग राजपूत आदी उपस्थित होते. लक्ष्मी, हिरकणी, सरस्वती, पार्वती या महिला स्वयंसाहाता बचत गटांनाही सभावेश होता.

विभागीय विस्तार केंद्राद्वारे संबंधित शेतकऱ्यांना कापूस उत्पादनवाढीबाबत माहिती देण्यात आली. याशिवाय बीजप्रक्रियेसाठी अॅझोटोबॅक्टर, स्फूरद विरघळविणारे जिवाणू खते, जैविके ट्रायकोडर्मा बुरशीनाशक, झिंक सल्फेट, रस शोषणाऱ्या किडींच्या नियंत्रणासाठी चिकट सापळे, व्हर्टिसिलियम लिकॅनी, निंबोळी अर्क, कॉपर ऑक्झिक्लोराईड आदी निविष्ठांचे वाटपही करण्यात आले.

संतोष धनगर, बुधोसिंग राजपूत, निंबा राजपूत, कृषी विभागाचे श्री. घोडरे, श्री. राजपूत, प्रकल्पपालील किरण मगर, राहुल पाटील यांनी सहकार्य केले.

सकाळ

अग्रोवन

जळगाव शुक्रवार, २३ डिसेंबर २०१६ । पाने १६ । किंमत ₹ ३ ।

बलदाणे येथे शेतकरी चर्चासत्र

धुळे येथील विभागीय कृषी विस्तार केंद्राचा उपक्रम

धुळे (प्रतिनिधी) : येथील कृषी महाविद्यालयाच्या विभागीय कृषी विस्तार केंद्रातर्फे बलदाणे (जि. नंदुरबार) येथे नुकतेच शेतकरी चर्चासत्र व शिवारफेरीचे आयोजन करण्यात आले. राष्ट्रीय कृषी विकास योजनेच्या माध्यमातून हा उपक्रम पार पडला.

या वेळी महात्मा फुले कृषी विद्यापीठाचे विस्तार संचालक डॉ. किरण कोकाटे, धुळे कृषी महाविद्यालयाचे सहयोगी अधिष्ठाता डॉ. यशवंत फुलपगारे, नंदुरबार कृषी महाविद्यालयाचे सहयोगी अधिष्ठाता डॉ. सुधाकर शिंदे, विस्तार केंद्राचे प्रमुख डॉ. मुरलीधर महाजन, नंदुरबारचे जिल्हा अधीक्षक कृषी अधिकारी मधुकर पन्हाळे, बलदाणे येथील सरपंच रागिनी पाटील आदी उपस्थित होते. कृषी विद्यापीठाचे तंत्रज्ञान जास्तीतजास्त शेतकऱ्यांपर्यंत पोचविण्याचे आवाहन डॉ. कोकाटे यांनी केले.

पिकाचे उत्पादन वाढविण्यासाठी आधुनिक शेती तंत्रज्ञानाचा अवलंब करावा, सोबत शेतीपूरक जोडधंदे सुरू करावेत, असे आवाहन डॉ. फुलपगारे यांनी केले.

डॉ. महाजन यांनी प्रास्ताविकात फार्मर फर्स्ट योजनेद्वारे बलदाणे गावात राबविलेल्या कापूस पीक प्रात्यक्षिकाची माहिती दिली. पारंपरिक शेतकरी चर्चासत्रात पंतप्रधान पीकविमा, महिला बचत गट सक्षमीकरण, जमिनीचे आरोग्य व्यवस्थापन, दुग्धव्यवसाय, हरभरा व गहू पिकाचे सुधारित व्यवस्थापन, या विषयांवर अॅड. प्रकाश पाटील यांच्यासह निलेश जगताळे, प्रा. उमेश पाटील, विपुल वसाने, प्रा. अविनाश कोलने, प्रा. भालचंद्र म्हसके आदींनी मार्गदर्शन केले. प्रा. श्रीधर देसले, कृषी सहायक राहुल पाटील, किरण मगर, कोमलसिंह गिरासे, कोमलसिंह राजपूत यांनी सहकार्य केले.

आपला महाराष्ट्र

₹ २.०० संस्थापक - लोकमित्र भाई गर्दाळे www.aplamaharashtra.net

■ वर्ष ५९ ■ अंक क्र. १९ ■ गुरुवार २३ ऑक्टोबर २०१६ ■ नंदुरबार, धुळे, जळगाव, नाशिक आपली ■ पाने

राष्ट्रीय कृषि विकास योजना (फार्मर फर्स्ट) अंतर्गत प्रशिक्षण कार्यक्रम संपन्न

महात्मा फुले कृषि विद्यापीठ अंतर्गत धुळे येथील कृषि महाविद्यालयाच्या विभागीय विस्तार केंद्रामार्फत दि. ५ ऑक्टोबर रोजी नंदुरबार जिल्ह्यातील बलदाणे गावात एक दिवसीय शेतकरी प्रशिक्षण कार्यक्रम आयोजित करण्यात आला. त्याप्रसंगी महाविद्यालयाच्या विस्तार शिक्षण विभागाचे प्रमुख डॉ.निलीप अहिरे, विस्तार केंद्राचे प्रमुख डॉ.मुरलीधर महाजन, सरपंच श्री. रागिनी पाटील, कृषि विभागाचे अधिकारी श्री. ढोढरे इत्यादी उपस्थित होते. प्रशिक्षणास १२१ शेतकऱ्यांनी सहभाग नोंदविला. उद्घाटन प्रसंगी डॉ.निलीप अहिरे यांनी सुरुवातीस तंत्रज्ञानाची शेतकऱ्यांनी कास धरावी असे आवाहन केले.

कृषी न्यूज

प्रास्ताविकात डॉ.मुरलीधर महाजन यांनी फार्मर फर्स्ट योजनेतंर्गत बलदाणे गावात राबविलेल्या कापूस पिकातील प्रात्यक्षिकांची सविस्तर माहिती दिली.या योजने अंतर्गत १०० प्रात्यक्षिक प्लॉटचे जमिन आरोग्य पत्रिका तयार करण्यात आलेल्या आहेत. त्याचे सुद्धा विश्लेषण करुन सांगण्यात आले व पत्रिकांचे वाटप झाले. प्रशिक्षणात कापूस पिकावरील रोग, सुधारीत तंत्रज्ञान, मित्री लागवड तंत्रज्ञान व हस्तिगृह तंत्रज्ञान या विषयांवर मार्गदर्शन करण्यात आले. मार्गदर्शक म्हणून डॉ.हेमंत पाटील, डॉ.पंकज पाटील, प्रा. भालचंद्र म्हसके व प्रा. श्रीधर देसले उपस्थित होते. या प्रशिक्षणासाठी प्रा. अविनाश कोलने, योजनेचे सहायक श्री. राहुल पाटील, श्री. किरण मगर व बलदाणे येथील श्री. कोमलसिंग राजपूत व गावकऱ्यांनी मोलाचे सहकार्य केले.

आपला महाराष्ट्र

₹ २.०० संस्थापक - लोकमित्र भाई गर्दाळे www.aplamaharashtra.net

■ वर्ष ५९ ■ अंक क्र. १८ ■ गुरुवार २० ऑक्टोबर २०१६ ■ नंदुरबार, धुळे, जळगाव, नाशिक आपली ■ पाने

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कृषी न्यूज