



NICRA News

Monthly e-Newsletter

on

Climate Resilient Agriculture

May 2012



Vol.1; No.8

Contents

[From the Research Front](#)

[From across the KVKs](#)

[Project launch events / Review meetings](#)

[Special Events](#)

[Technology Demonstration Component](#)

[KVKs](#)



Map not to scale



www.nicra-icar.in

From the Research Front

NICRA is under implementation for little more than a year. The initial period was mostly consumed by visioning and procurement. However, over the past year, some of the NICRA partner institutes have made some significant progress. It is now time for taking stock of what has been achieved. Therefore, the first annual review workshop of the nationwide project is scheduled in June. During the workshop, a detailed account of the achievements made in the project for the past one year will be reviewed and plan of action for the year 2012-13 would be finalized. Noted climate expert Prof.Y.P.Abror who did pioneering work on climate change at IARI, New Delhi will chair the review workshop. Dr.A.K.Singh, Deputy Director General (Natural Resource Management) will be present.

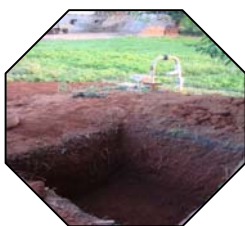
The Principal Investigators working on the basic and strategic aspects of climate resilient agriculture representing 21 leading research institutes across the country will also be participating. Besides, a number of other research organizations which have been operating projects under competitive grants will present their initial outcomes. As one of the first steps of understanding the nature and extent of vulnerability of different regions to the climate change, a large exercise has been undertaken to delineate and map most vulnerable pockets of the country and their ability to cope with climate variability in the medium and long term. This will help the planners to initiate long-term programmes so that the communities living in these areas can develop capacity to cope with climate change.

Several invited experts will critically review the outcome and advise on the future course of research for the next one-year. In all, over 150 scientists working on climate resilient agriculture will deliberate on the topic during the 3 days event. Currently, the basic and strategic research is focusing on breeding resilient varieties of rice, wheat and pulses. However, there is also a need to include other important crops like cotton, sugarcane and maize. The modus operandi of this proposal would be discussed during the review.

B. Venkateswarlu
Director, CRIDA

National Initiative on Climate Resilient Agriculture
Central Research Institute for Dryland Agriculture, Hyderabad-500 059

From across the KVKs

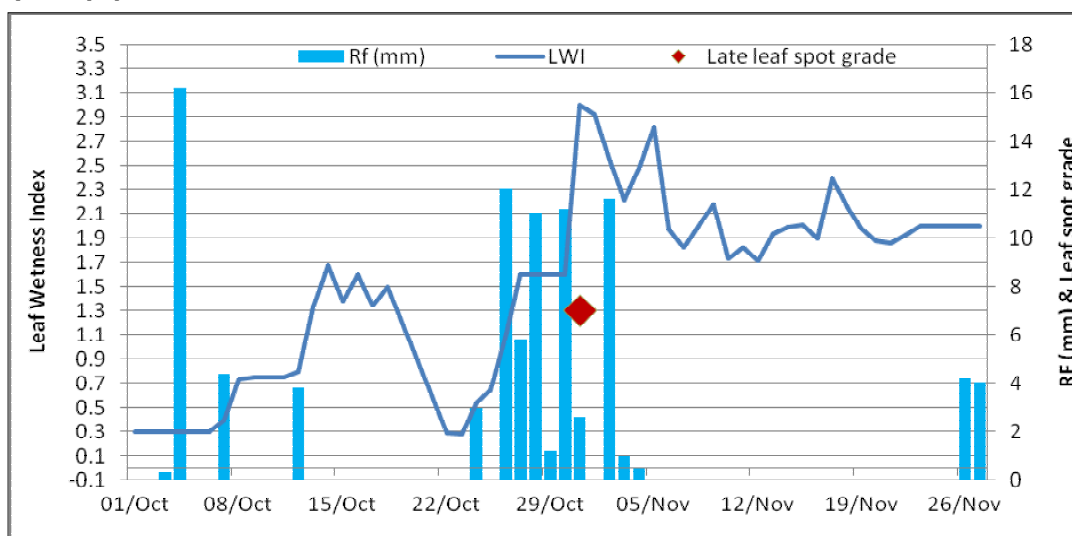


The month of May was very important since it offered opportunity on time to look at what has been accomplished by the NICRA-KVKs across the zones and discuss the action plan for the ensuing kharif and rabi seasons (2012-13). Three zonal review and planning workshops were held during the month. The first one was held at Jagdalpur during 5-6 May, 2012 and it was hosted by IGKV, Raipur. The Programme Coordinators of NICRA-KVKs of Zone IV (14 No.) presented the progress and action plan. This review gave important insights into the potential and problems of Chhattisgarh, Madhya Pradesh & Odisha in terms of climate variability. The next workshop was held at KVK, Namakkal, Tamil Nadu during 14-15 May, 2012 for the NICRA-KVKs of Zone VIII. The workshop was also used as an opportunity for taking around all the Programme Coordinators to the NICRA village and expose them to the interventions led by livestock sector. The KVK's experience in institutional interventions is infact model to emulated by all the KVKs in general. The last one in the month was held at Port Blair for the NICRA-KVKs of Zone II. The workshop was hosted by Central Agricultural Research Institute, Port Blair, A&N Islands. This was an unique opportunity for the Programme Coordinators of Zone II NICRA-KVKs to visit the beautiful islands of A&N. During the month the Technology Demonstration Component of NICRA received a special invitation for making the presentation at the Global Horticultural Conference held at Bhubaneswar. During this month, Dr.S.Ayyappan, Secretary, DARE and DG, ICAR and Dr.K.D.Kokate, DDG (Extn.) visited the NICRA-KVK at Senapati in Manipur where the DG inaugurated the automatic weather station at the KVK and interacted with NICRA villagers.

The review of progress of interventions across three Zones during the workshops was very educative and satisfactory. There is a significant improvement in the interventions and clarity of concepts among the NICRA-KVKs. The workshops provided an opportunity to fine tune the action plans and sharpen the focus further. It was heartening to know many custom hiring centers are fully functional and generating revenue for the Village Climate Risk Management Committee (VCRMC). However, there is still some way to go to make these committees more vibrant so that they can play active role in articulating the needs of the community for improving the coping ability. Besides, there are also some problems with respect to maintaining the automatic weather station and small weather stations at village due to theft of some of the components of the unit. This is being noticed in those KVKs that are in very remote places and do not have adequate security. These issues have been addressed one by one. Nevertheless, these are all valuable learning experiences.

Validation of decision support system for groundnut pests and diseases using weather data from wireless sensor networks

Wireless sensors are increasingly being used to collect data from remote locations. The sensors held avoid human intervention and thus enhance accuracy as well as the frequency of data gathering from desired locations. However, the data gathered from sensors and their accuracy needs to be verified in relation to the buildup of pest/diseases in a given crop. As part of this initiative, a network (10 nodes) was established at Agricultural Research Station, Kadiri to record leaf wetness at canopy height in groundnut crop during the *kharif* season. The daily leaf wetness hours data was received via internet at the CRIDA server at Hyderabad and processed by decision support system (DSS) for fungicide spray advisory into leaf wetness index (LWI). Disease initiation was noticed 90 days after sowing when leaf wetness threshold of ≥ 2.3 was crossed (Fig.1). Efforts are on to standardize the protocol. This will strengthen weather based agro advisories especially for taking up timely crop protection measures.



Project Launch Event/Review meeting

KVK Port Blair, Andaman Nicobars

Review and Planning workshop was inaugurated by Mr Rupesh Kumar Thakur, IAS, Dy. Commissioner, South Andamans. He appreciated the efforts of the KVK in piloting climate resilient agriculture in the Island. Dr DR Singh, Acting Director, CARL Dr RP Singh Ratan, Director Extension, BAU, Ranchi and Dr AK Singh Zonal Project Director, ZPD II participated in the inaugural ceremony. Dr Nagesh Ram, PC, KVK, Port Blair organized the event.



Training cum Demonstration on Rainwater Harvesting

A Training cum demonstration on rainwater harvesting was organized by KVK, Ranichauri at NICRA adopted village Dabri Thauldhar Block (Tehri Garhwal) on 12, April 2012 as part of the Natural Resource Managemeny Programme under NICRA. A series of activities were conducted to raise the awareness of farmers about climate resilient agriculture.

Dr. Sanjay Sachan Conducted demonstration on rainwater harvesting, using Alkathene tanks to capture rainwater at farm family level along with demonstration on Vermicomposting to make high quality compost & its fortification as well as use of poly mulch to addressing the problem of soil evaporation loss, soil temperature insulation, control of soil born disease etc

The program was organized by Dr. Sanjay Chaudhary, Dr. Sanjay Sachan, Shri Ajay Prabhaker, Shri G. C. Joshi, Dr. Piyusha Singh (SRF) & Mr. Kuldev Singh (SRF).

Progressive farmers of village Dabri Shri Dilip Singh Ranawat along with fellow farmers thanked KVK and NICRA for the new initiatives.



Special events

Visit of Secretary, DARE, & DG, ICAR to Krishi Vigyan Kendra– Senapati, Manipur

Secretary, DARE and Director General, ICAR, Dr. S. Ayyappan visited KVK Senapati, a hill district of Manipur on **12th May 2012**. He was accompanied by Dr. K.D. Kokate, Deputy Director General (Agril Extension) and other functionaries of ICAR, CAU, State govt. and NGOs.

During the visit Dr. S. Ayyappan inaugurated the Automatic Weather Station (AWS) under NICRA project at KVK-Senapati. He was impressed with the beautiful location of the KVK and the quality of the weather data collected through the AWS.

Dr S. Ayyappan also had an interaction with the farmers, officers of state line departments and scientists of KVKs and urged upon other KVKs of the state to replicate the same in their respective districts. He stressed upon the importance and production of quality seeds and breeds in enhancing agricultural production and productivity and urged the scientists to go for quality seed and planting material generation as these two interventions will ensure sustained inflow of food grains, fruits and vegetables in the district.



Inauguration of Automatic Weather Station (AWS) by Dr. S. Ayyappan Secretary, DARE & DG, ICAR

Inter-Cropping (Soybean+ Maize) System suitable for rainfed condition

KVK, Kota, Rajasthan

Soybean is grown as inter-cropping with maize, black gram (urd) and sesame in some parts of South-East Rajasthan. Soybean has proved to be a remunerative crop in kharif as it gives more profit than the rainfed rabi crop grown on conserved soil moisture in Hadoti area of Rajasthan. Under NICRA project intercropping of Maize with Soybean was demonstrated at farmers field. It revealed that this system (5:2 row ratio) was more remunerative than sole crop of either maize or soybean. Planting of both crops i.e. soybean and maize at same row distance (30 cm) was done simultaneously by seed-cum ferti-drill maintaining 5:2 rows ratio of soybean and maize. This new ferti-seed drill machine designed by KVK scientists with the help of local manufacturer. The yield of soybean was more in pure crop than when grown in combination with maize. However, 5 rows of Soybean (at 30 cm row distance) after that 2 rows of maize planted at 30 cm row distance was found best. The data on benefit/cost ratio revealed that soybean and maize intercropping (5:2) was more productive as it gave the highest additional net return. Soybean and maize yielded Rs.2520 and 1870 per ha respectively as compared to sole soybean and maize.



Water Saving by Bed Planting Technique in Wheat

KVK, Kota, Rajasthan

Krishi Vigyan Kendra, Kota is implementing NICRA project in Choumakot village in Kota district of Rajasthan. The source of irrigation in this village is tubewell. Irrigation facility in the field crops is only limited during good rainfall year. Farmers tend to waste precious groundwater by flood irrigation. In view of this, the furrow irrigated raised bed system (FIRBS) machine was used to promote water saving.

Features and specification of FIRBs machine: The machine is feasible for bed planting for wheat in Vertisols, forms channels and raised beds alternately. Channels are used for applying irrigation water to crop. The machine has a facility to adjust desired depth of sowing and row to row distance on beds. This is multipurpose machine which can be used for both kharif soybean and rabi wheat crops simply by adding or removing the furrow openers. This system is suitable for mechanical weed control also with tractor drawn kulpa.

Demonstrations on FIRBs wheat for water saving in Vertisols in improved water retention and reduced frequency of irrigation. This method gave higher seed yield (61.92q/ha) with more net return (Rs 67334/ ha) with a B: C ratio (4.65).

The following outcomes were observed in bed planting of wheat:

- Time saving (25-30 %) i. e. took less time of 2.43/hrs/ha/irrigation
- Required 20-25% lower seed rate
- Water saving was up to 25-30%
- Better water management weed management resulted as increased water use efficiency
- Reduced crop lodging
- Less competition for light and nutrients and better light penetration within the canopy.
- Obtained 10% higher yield.

Verification trial on FIRBs Wheat in Vertisols under NICRA Project

Crop Establishment methods	Yield (q/ha)	Variable cost (Rs/ha)	Net return (Rs/ha)	BCR	% increase	Water use (lakh lit/ha)	Total water use (cm)
FIRB System/Bed planting	61.92	18425	67334	4.65	10.08	18	18
Conventional Sowing	56.25	18850	59056	4.13		24	24



National Initiative on Climate Resilient Agriculture
Central Research Institute for Dryland Agriculture, Hyderabad-500 059
Tele fax: 040-24535336; e-mail: coord.nicra@gmail.com