Proceedings of the Annual Progress-cum Review Meeting of CRP on CA

The Annual Progress-cum-Review Meeting of Consortia Research Platform on Conservation Agriculture (CRP on CA) was organized at ICAR-IISS, Bhopal on 29.03.2016. Dr AK Sikka, DDG(NRM), Dr CL Acharya, ICAR Expert (CA) and Chairman, RAC, Dr SK Chaudhari, ADG (SWM) and Dr AR Sharma, Director ICAR-DWR Jabalpur and representatives from lead and 11 cooperating centers participated in the program.

Dr. A.K. Biswas, LCPC (CRP on CA) outlined the issues, objectives and work plan of the project. Dr. (Mrs) Pratibha, ICAR-CRIDA, Hyderabad briefed the work done under dryland conservation agriculture theme. She presented the significance of furrow irrigated raised bed in conservation moisture under dryland CA. Zero tillage was reported to accelerate the algal growth besides, enhancement in soil enzymes. Dr. C.L. Acharya pointed out that under rainfed cropping, water harvesting is the key issue in addition to herbicide usage. Dr. A.K. Sikka discussed the basic principles of CA and opined that CA in India differs in many ways and we need to redesign the concept for Indian conditions.

Dr. Arya from IIFSR, Modipuram presented and discussed the development of different projects of CA under irrigated ecosystem. Dr. A.K. Sikka pointed out the need for selection of genotypes for CA. He emphasized that the recommend dose of fertilizer and its scheduling along with water are efficiency (WUE) and energy component needs to be looked into. It was highlighted that direct seeded rice (DSR) prevalent in northern parts of the country has the problems of zinc and iron deficiency, and nematode infestation which can be managed by hill planting.

Dr. A.R. Sharma, ICAR-DWR, Jabalpur discussed the weed management issue in CA. He suggested the use of roto till drill under high crop residue conditions besides the happy seeder. He proposed dry sowing during June for the success of CA. He stressed the careful selection of broad spectrum herbicide under optimum soil moisture. As in CA system the perennial weeds should not be allowed to set seed and for that purpose the hand weeding can be resorted to.

Dr. R.C. Singh, ICAR-CIAE, presented the machinery options in CA. He reiterated that as per the need of the different centers, CIAE would visit and solve the machinery issues. All centers have been requested to interact with CIAE to find solution to specific machinery issues. The problems like crop residue management under rainfed system, seed drill choking, spreading of crop residues etc while using machinery in fields under CA were also pointed out elaborately.

Dr. K.M. Hati, PI (IISS) presented the activities of the lead center on water, weed, nutrient and energy management. Dr. S.K. Chaudhari, reiterated the need to study soil physical

parameters like pore size distribution, quantification of lateral, and vertical capillary movement of water and that of herbicide molecules, micro aggregrates etc. under CA. He stressed that IISS need to focus on basic aspects of CA, particularly soil physical properties. He stressed the importance of fertigation especially phosphatic fertilizers which may cause clogging in calcareous soil. He emphasized that IARI, New Delhi and IIWBR, Karnal should focus on basic and strategic research for irrigated system. Dr. C.L. Acharya emphasized water harvesting through farm ponds, quoting the status of many states including Punjab where many blocks are facing negative balance of water. Dr AK Sikka urged upon the resource optimization in CA, in addition to *in situ* moisture conversation.

Dr CL Acharya further advised that all the three principles of CA should be attempted for the success of CA with a comprehensive study on physical, chemical and biological parameters of soil health. Focus should be on cropping system approach directed towards small and marginal farmers under rainfed systems with enhanced fertilizer use efficiency. Climate change issues that affect production should also be addressed. IISS being leader of the platform, have to concentrate on water conservation, productivity and residue retention under rainfed conditions.

Dr S.K. Chaudhari expressed that the progress in general, under CA-CRP is satisfactory. He emphasized that purpose of the platform 'Machinery aspect' has to be dealt by CIAE, Bhopal to provide suitable machinery as solution to various location specific bottlenecks in residue management under conservation agriculture.

Dr. A.K. Sikka, DDG (NRM) appreciated the results presented by project leaders and stated that progress has been satisfactory. He reiterated that water is of prime importance for making conservation agriculture sustainable. Besides, that profitability is also equally important. He stressed that the rainfed situation is less addressed in the project and hence for rainfed areas more crops and options through scaling up of project may be done. He expressed unhappiness on the presentation of the irrigated ecosystem, and called for streamlining the activities and treatment structures of the irrigated ecosystem. He advised to take in confidence the farmers through farmersô participatory approach and also utilize their experience through participation and convince them him with logic. Agro ecological region wise focus on CA technology is required, he added

Observations and Recommendations

1. CA could be successful only if water, appropriate machinery and appropriate weed management are taken care of. Particularly water, its conservation and management, is the key issue.
2. Termite problems in red soils under dryland and snake menace under sugarcane trash need to be appropriately addressed.

3. IARI, New Delhi and CSSRI, Karnal should concentrate on basic and strategic research on irrigated CA.
4. IISS should work on basic aspects of water and nutrient interaction besides energy component and carbon sequestration. For example, nutrient dynamics and irrigation scheduling, have to the need based and resource based.
5. The experts pointed out that the sugarcane trash burning due to presence of snakes inside the thrash is a major concern in Maharashtra, and needs to be attended carefully.
6. Stress was given on uniform coding and definition of CA practices across all the centers.
7. For weed related research activities DWR, Jabalpur should be consulted.
8. IISS need not carryout weed/herbicide experiments. The herbicides recommended by DWR should be used.
9. The responsibility of leading the CA projects under irrigated ecosystem may be given to a new leader, in place of IIFSR, Modipuram, if it does not improve its performance.
10. There should be commonality in the treatments to make comparisons across centres and crops, and all notations of conservation tillage should be uniform for all the centers. A meeting of centres working under irrigated ecosystem may be called to streamline the activities.
11. Within the platform the people are working in a scattered manner which needs to be consolidated under the platform.
12. Ensure farmer participatory approach and combine the field demonstrations under MGMG/Jai Kisan Jai Vigyan.
13. Capacity building for all stakeholders (scientists, farmers etc.) needs to be addressed by the CA partners.
14. Crop/yield insurance and other policy issues of conservation agriculture should find a place in future discussions and deliberation of the CRP.

The meeting ended with a formal vote of thanks proposed by Dr. R.S. Chaudhary, DyLCPC, CRP on CA, IISS, Bhopal.

(A.K. Biswas)
LCPC, CAP

Circulation to:

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3. Dr. C.L. Acharya, Chairman,RAC, IISS, Bhopal
4. Director, IISS, Bhopal
5. LCPC, Dy LCPC
6. All PPIs