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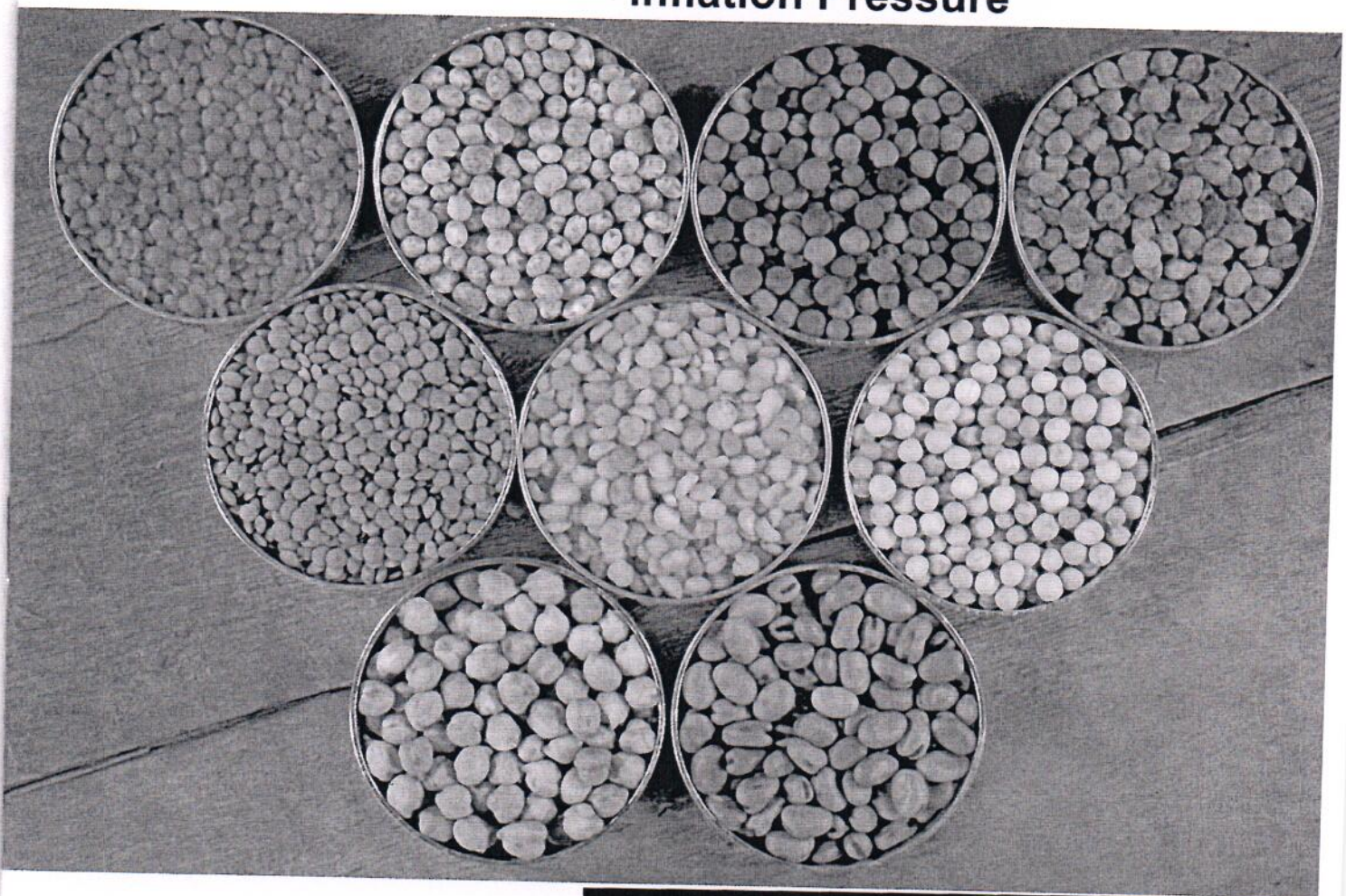
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INFORMATION & INTELLIGENCE

“Large Scope for Stronger Linkages of Research Institutions with the Industry...”

Dr C L Laxmipathi Gowda, The Deputy Director General at ICRISAT discusses about sustainability of growing pulses in developing countries mainly in India and Africa, yield potential, collaboration opportunities of institutions with private sector in enhancing crop productivity and quality and the resultant benefits to all stakeholders across the value chain in an exclusive interview with Manish Singh at The Pulses Conclave 2014 held in Goa. Excerpts...



Please elaborate about ICRISAT, its goals and how is it working in collaboration with farmers?

ICRISAT is the International Crop Research Institute for the Semi-Arid Tropics, it is based in Hyderabad but as an Institution we work in 55 developing countries around the world both in Asia and Sub-Saharan Africa. The mission of ICRISAT is to help the small hold farmers in all these developing countries to increase crop production, productivity and the incomes but along these we also want to see that the farmers enhance their livelihoods, food security and nutrition security and that is the reason why we are working both

on cereals which gives calories, on pulses which gives proteins and other minerals, and we also work on groundnut which gives fat, oil and proteins. In addition to this we can look at how we can make farming and the farming systems sustainable in terms of ensuring that land should not degrade and environmental sustainability is maintained.

What is the role of ICRISAT in partnering with the industries to bring the kind of change that is required in the production and marketing systems of pulses?

We are seeing that in general there is a large scope for stronger linkages of research institutions with the industry. Such a linkage is very essential because as a research scientist we should know what the needs of the industries are and on the other hand industries should also work with the research institutions because research cannot be conducted in a vacuum, it has to have somebody to whom it can relate to and industry is one of those because they are involved in marketing, processing and also getting the processed products to the consumer. The other responsibility that the industry has is to support research. Industry should provide

some kind of support funding so that the scientist can do research which can then benefit the industry. For example we can develop improved varieties that can produce not only a good yield but also a better quality product. This will have multiple benefits for the processor and marketers as it can be easily processed and made available to the end consumers at a reasonable price and in value added and processed forms. So this industry research synergy is very important for the future.

What kind of relationships you are seeing with associations like IPGA and CICILS at the global level, what kind of relationships you are looking forward to be developed in the future with this vision?

What I am looking at is in terms of seeing how IPGA can liege with research institutions like ICRISAT and gives their prospective of what is the future demand, what kind of produce they need whether they need it for food use, feed use or dual purpose and what are the other traits they need. The demand of the market, the demand of the processor as well as the end consumers have to be translated into crop breeds with desired traits.

In this regard, funding support by industry can greatly reduce the time of achieving useful results and putting things into action for the ultimate benefit of the industry. Once the product is developed both need to work and see how this variety or technology can benefit the farmers and then from there to the marketer and to the processor and the end consumer. So it encompasses the whole value chain. In fact, this is one of the main aims of ICRISAT in the new strategy to 2020, which we call Inclusive Market Oriented Development where we want even the small holder farmer to get linked to the market so that he can gain more benefits.

We have been seeing a change in pulses production across the regions, the production in various origins is almost stagnant, where as Africa is emerging as a destination which is not only pulses but also for various commodities. What is your opinion on Africa as a supplier of pulses to the world?

Africa has large tracts of land and they can grow large number of crops, but what they lack is the technology, so if we can work with the national programs in these countries, provide them the knowledge and technology we solve the first part of the problem.

However, at the same time we also need to see how we can off take that produce. Because many times the farms within the African pulses growing areas are small and aggregation of produce becomes a

problem. Unlike in Asia, there are no organized markets in Africa, so that the farmer has to possibly carry 20 Kg or 50 Kg on his back or on the bicycle and then go to the nearest market which could be as far as 20 Km. We need to work through the value chain and see how we can help the farmer to produce more and better quality grain which can then be aggregated by the marketers then to the processors and then for exports and other purposes. We have worked with many countries like Tanzania, Malawi and Ethiopia, where we have provided them with the technology and now these countries are exporting pigeon pea, chickpea and other crops and even Rajma is being exported from Ethiopia to India and other countries because they have been empowered to produce more and to produce better quality pulses.

What about the yield potential of pulses in India? Please elaborate.

In my presentation at this event, I mentioned that the potential yield of Chickpea is about 5 tonnes per hectare but on the on farm trials we can easily get about 2.5 tonnes. What is being realized on an average in India is about 900-950 Kg per hectare. The yield gap can be easily reduced to some extent by rising the yield to 1.5 tonnes per hectare, which itself would be a big achievement. The farmer needs to take more interest and the governments, the NGOs, the private sectors need to provide good inputs, Improved varieties and the fertilizers, micronutrients, pesticides so that the farmers can use them at appropriate times.

One of the major limitations of Indian agriculture is lack of Irrigation

and so instead of growing paddy, which requires 10-15 irrigation, pulses and other dry land crops need only 1 to 2 irrigations and by giving one irrigation at critical stage, we can even double the yield. We have developed hybrid pigeonpea which can give 30-40 % more yield than a variety. We are now coming out with heat tolerant chickpea variety. Looking at the growing scarcity of labor, we are bringing varieties that are harvestable by machines as they are the right size so that harvesters can lift them. We are trying to develop varieties that are herbicide tolerant that effective use of herbicides can be done by farmers, to reduce labor dependence. We are also working on Bt-chickpea and Bt-pigeonpea with reduced damage caused by pod borers.

How ICRISAT is focusing on sustainability and how is it useful?

Sustainability is a major issue considered by ICRISAT and we are trying to encourage farmers to have crop rotation of cereals and legumes. Beyond this we are also looking at the integrated watershed management where we are trying to work with the farming community to conserve water in-situ and to apply fertilizers as per needs of the soil by scientifically testing the soil. Beyond NPK, as the major nutrients, we are finding the importance of micronutrients such as Sulphur, Boron, Manganese, Zinc etc. which are required in minor quantities, but can enhance yields by as much as 30-40 %. We are also trying to ensure that there is inter-cropping as well as crop rotation of cereals and legumes for long term sustainability.

