

COTTON *Innovate*



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PUBLIC LECTURE

Dr. K. R. Kranthi, Director, CICR, delivered a lecture on "Feeding the billions with declining land resources" organised by Indian Society of Soil Science and Land Use Planning on July 11, 2014 at NBSS & LUP, Amravati Road, Nagpur. In his talk, he highlighted that, though population in India is expected to reach 1.5 billion by 2020, India's arable land of 155 m hectares is limited and is cultivated intensively to feed its people. Indian agricultural scientists have been successful in battling odds to keep the growth trends positive in food grain production. The recent consistent record production of cereals, pulses, milk, eggs, vegetables and fruits over the past decade are largely because of the tremendous efforts by the farm scientists. However, one of the concerns confronting the country is the low productivity levels of rice, wheat, cotton, maize and sorghum as compared to global trends. Further the recent conversion of 40 lakh hectares of area from sorghum, pulses, sunflower and groundnut into cotton over the past 10 years has also caused a progressive decline in yields of sorghum, sunflower and groundnut possibly resulting in a sudden 7-fold increase of vegetable oil imports to the extent of Rs 60 thousand crores. This issue is worrisome and needs to be tackled on priority. India will have to keep pace with the food crop growth trends in order to continue feeding the increasing population. The challenges to agricultural productivity are increasing with unfavourable changes in climate, deteriorating soil health, progressive depletion of ground water, migration of agricultural labourers to urban areas and excessive dependence on fertilizer imports. It is a greater challenge for Indian farm scientists to find ecologically compatible technologies to enhance productivity equivalent to countries such as USA, Brazil and China, so as to succeed in becoming globally competitive in agri-exports while feeding India's burgeoning population.



LITERATURE SCAN

Life Log Sustainability through Nano-fertilizers

Green revolution increased the use of fertilizers in agriculture and it also resulted in soil and water degradation. Burgeoning population and climate change are causes of depletion of natural resources and are limiting factors for agricultural productivity. Convergence of nanotechnology and agriculture can lead to agricultural sustainability and log all the needs of flora and fauna at the use of meagre quantity. All the adverse effects of excess fertilization in ecosystem will be nullified through use of nano-fertilizers in crop production.



The most valuable information about nano-fertilizers is derived from the natural resources. Particle size and shape were developed through aggregation of atoms. Nanofertilizer due to its slow and steady nutrient release capacity improves the nutrient use efficiency. It might be attributed to role of micro and meso-porosity of particles. Particles surface modification either cationic or anionic also helps in slow nutrient release. Nano-fertilizer works in tandem with the crop nutrition. All the life log sustainability depends on the how we adopt and use the nano-fertilizers in Indian agriculture.

References

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