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21st December, 2019

<u>Report</u>

The Department of Botany organized National Workshop & Exhibition on "Farmer Technology" on 21^{*} December, 2019 on the eve of National Farmers Day. The Chief Guest of the Inaugural Session Dr. K. Gurava Reddy, Prof. & Head, Department of Agricultural Extension, agricultural College, Rajahmundry (ANGRAU). He said that Past strategy for development of the agriculture sector in India has focused primarily on raising agricultural output and improving food security. The net result has been a 45 per cent increase in per person food production, which has made India not only food self-sufficient at aggregate level, but also a net food exporting country. The strategy did not explicitly recognise the need to raise farmers' income and the net result has been that farmers income remained low, which is evident from the incidence of poverty among farm households. While agriculture's share in India's economy has progressively declined to less than 15% due to the high growth rates of the industrial and services sectors, the sector's importance in India's economic and social fabric goes well beyond this indicator.

First, nearly three-quarters of India's families depend on rural incomes.

Second, the majority of India's poor (some 770 million people or about 70 percent) are found in rural areas.

And third, India's food security depends on producing cereal crops, as well as increasing its production of fruits, vegetables and milk to meet the demands of a growing population with rising income.

To do so, a productive, competitive, diversified and sustainable agricultural sector will need to emerge at an accelerated pace.

It is apparent that income earned by a farmer from agriculture is crucial to address agrarian distress (Chand 2016) and promote farmers welfare. In this background, the goal is central to promote farmers welfare, reduce agrarian distress and bring parity between income of farmers and those working in non-agricultural professions.

Priority Areas for Support

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1. Enhancing agricultural productivity, competitiveness, and rural growth

Promoting new technologies and reforming agricultural research and extension

Improving Water Resources and Irrigation/Drainage Management

Facilitating agricultural diversification to higher-value commodities

Promoting high growth commodities

Developing markets, agricultural credit and public expenditures

2. Poverty alleviation and community actions

While agricultural growth will, in itself, provide the base for increasing incomes, for the 170 million or so rural persons that are below the poverty line, additional measures are required to make this growth inclusive.

3. Sustaining the environment and future agricultural productivity

In parts of India, the over-pumping of water for agricultural use is leading to falling groundwater levels. Conversely, water-logging is leading to the build-up of salts in the soils of some irrigated areas. In rain-fed areas on the other hand, where the majority of the rural population live, agricultural practices need adapting to reduce soil erosion and increase the absorption of rainfall. Overexploited and degrading forest land needs mitigation measures. There are proven solutions to nearly all of these problems.

Day I - Technical Session-I: 10:15 am to 11:15 am -

Dr. S. Bharathi, Principal Scientist, ANGRAU:

India is considered to be one of the leading cotton producing countries in the world with a net sown area of 12.35Mha during 2018-19. Cotton is the most important commercial crop cultivated in the state of Andhra Pradesh. It is mostly cultivated under rainfed conditions. The farmers of the state consider cultivation of cotton popularly known as white gold as a status symbol and pride. The crop is cultivated by thousands of marginal and small farmers mostly under rain led conditions. Socio economic status of the farmers and small land holdings, mono cropping over years, aberrant weather conditions imbalanced fertilization, non-adoption of optimum plant population, indiscriminate use of insecticides, mounting pest and disease are the major constraints in the zone. Agronomic performance of Bt cultivars vary substantially from their non Bt counter parts. Bt cottons showed change in their morphological, physiological and phenological characteristics. Bt. cotton hybrids were more efficient in mobilizing photosynthesis to reproductive sink and also retaining more bolls particularly the early formed ones at lower nodes.

Higher sink in Bt. cotton leads to lower source to sink ratio, faster senescence and crop maturity compared to the non Bt. version. In built resistance to boll worms in Bt. hybrids leads to retention of early formed fruiting parts and promotes earliness. Further, under aberrant weather situation, the increased assimilate demand of early high fruit retention reduces the resources for continued growth and fruiting leading to early maturity and reduced yields. Now that Bt. cotton is widely adapted around 98 per cent area under cotton is occupied by Bt cotton hybrids, special emphasis must be paid to its agronomic management to harness its full economic benefits. However, the average production is very low when compared to world's average.

This is mainly because 70 per cent of cotton area is under rain fed condition. The competition among, plants is important because too low or too high plant densities on a given unit of land area results in yield reduction. However, contrary to this logical view, plants generally exhibit some plasticity in response to spacing vis-à-vis population densities with the resulting environment. Cotton is no exception for this view, because of its wider adaptability. Hence it is very much needed to emphasise on best management practices to be followed in cotton cultivation for harnessing sustainable yield.

Dr. A. Subbarami Reddy, N.G. Ranga Agricultural University - Organic Farming & Bio-

Organic farming can maintain soil quality. The chemical use is hitting the sustainability in soil and decreasing its potency. Applying organic manure is the only solution to improve the soil organic carbon productivity in the future. Organic manure can be used as an alternative renewable resource for nutrients supply. A huge gap exists between the available quantity and utilized quantity. However, it cannot be possible to meet the nutrients requirement in crops from organic sources, if the 100% of cultivable land is converted into organic farming. Organic farming system will be able to deliver agronomic and environment benefit both through structural change and tactical

Day I - Technical Session-II: 11:30 am to 12:30 pm -Dr. A. Subbarami Reddy, N.G. Ranga Agricultural University - Organic Farming & Bifertilizers:
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The benefits of organic farming include: to developed countries (environment protection, Increase of biodiversity, reduce energy use and CO2 emissions) and for developing countries like India (efficient use of resources, increase in crop yield environment and biodiversity safeguarding, etc.).Organic foods are proved to have uperiority in terms of health and safety, but there is no evidence to prove the superiority in terms of health and safety, but there is no evidence to prove the vields and make organic farms more profitable than conventional farms. Organ farming systems have pest and disease management approach which are large preventive than reactive. Pest and disease incidence is less in organic farms wher compared to conventional farms. The benefits of organic farming include: to developed countries (environment protection, Increase of biodiversity, reduce energy use and CO2 emissions) and for developing countries like India (efficient use of resources, increase in crop yields, environment and biodiversity safeguarding, etc.).Organic foods are proved to have superiority in terms of health and safety, but there is no evidence to prove this superiority in terms of taste and nutrition, as most of the studies done are often doesn't have conclusion. Combining lower input costs and favourable price can offset reduce vields and make organic farms more profitable than conventional farms.. Organic farming systems have pest and disease management approach which are largely preventive than reactive. Pest and disease incidence is less in organic farms when

Dr. B.V.K. Bhagavan, Principal Scientist, Dr. YSRHU – Innovative Technologies in Banana Productions:

Banana (Musa sp.) is the second most important fruit crop in India next to mango. Its year round availability, affordability, varietal range, taste, nutritive and medicinal value makes it the favourite fruit among all classes of people. It has also good export potential. In India banana occupies an area of about 0.86 million hectares with an annual production of 30.81 million tonnes which account for 31.41% of the total national fruit In Andhra Pradesh, it is grown in 0.089 million hectares compising production. Kadapa, Ananthpur, East Godavari, West Godavari, Krishna, Guntur, Kurnool, Srikakulam, Vizianagaram districts with an annual production of about 5.00 million tonnes. Productivity of banana in Andhra Pradesh is 56.24 MT/ha as against the national productivity of 34.86 MT/ha. This is mainly achieved by growing high-yielding Cavendish cultivar i.e., Grand Naine, coupled with the adoption of improved technologies such as use of tissue-culture planting material, high density planting, drip irrigation, fertigation, bunch management practices, Integrated disease and pest management practices. These interventions not only enhanced the production but also improved the quality of banana.

Day I - Technical Session-IV: 2:15 Pm to 3:00 pm -

Dr. G. Bindhu Madhavi, Senior Scientist, ANGRAU - Integrated Management of Pest Diseases:

Integrated Pest Management (IPM) is an effective and ecofriendly approach to to contain pests that relies on a combination of management practices. IPM programs use current, comprehensive information on the life cycles of pests and their interaction with the environment. In IPM, combination of available pest control methods is used to manage pest damage by the most economical means, and with the least possible hazard to people, property, and the environment. IPM takes advantage of all appropriate pest management options including, but not limited to, the judicious use of pesticides. In

contrast, organic food production applies many of the same concepts as IPM but limits the use of pesticides to those that are produced from natural sources, as opposed to

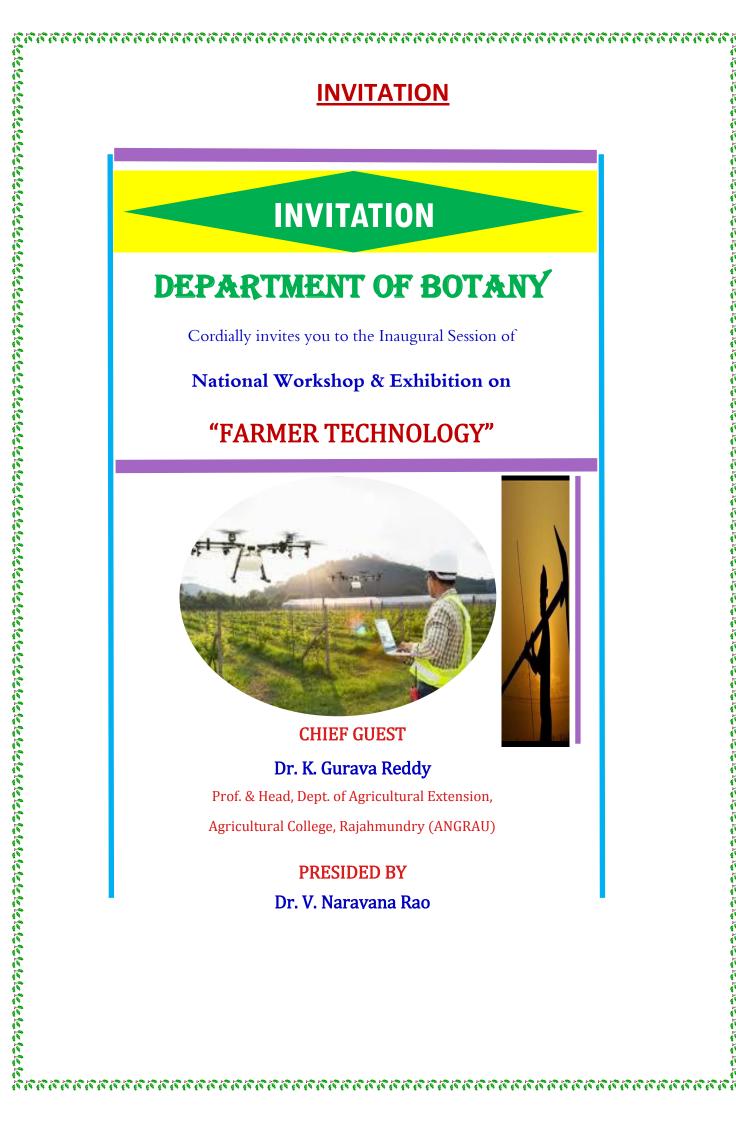
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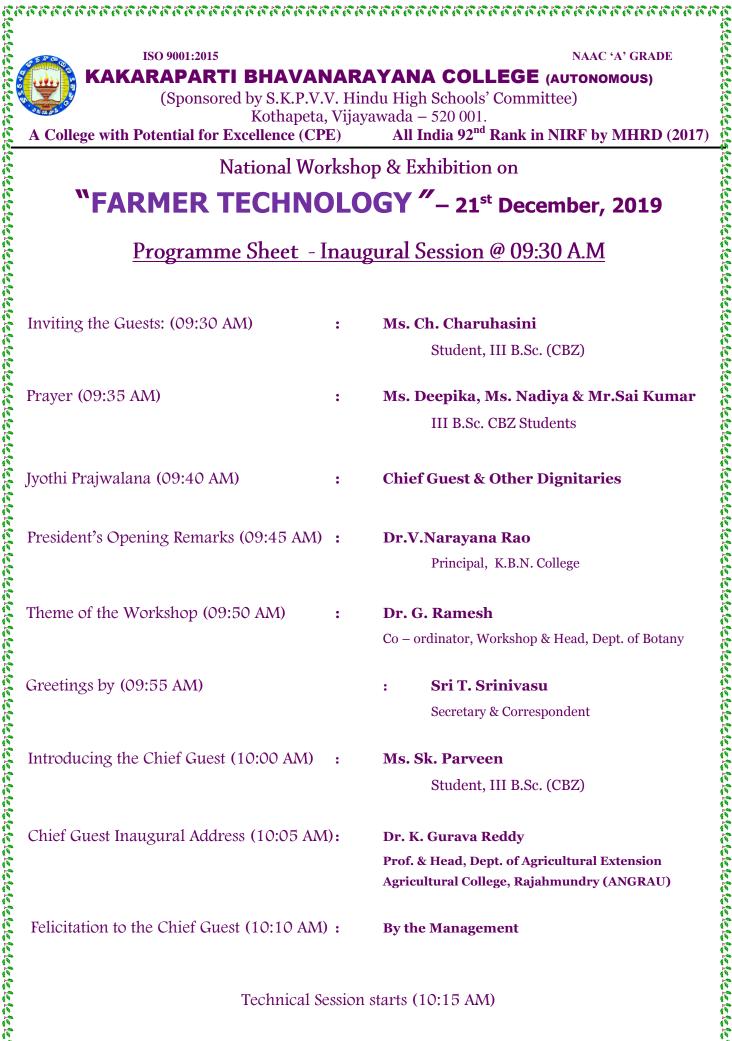
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IPM is not a single pest control method but, rather, a series of pest management evaluations, decisions and controls. In practicing IPM, growers who are aware of the potential for pest infestation follow a four-tiered approach. The four steps include, set Action Thresholds, Monitor and Identify Pests, prevention and control. Once monitoring, identification, and action thresholds indicate that pest control is required, and preventive methods are no longer effective or available, IPM programs then evaluate the proper control method both for effectiveness and risk.

The scientist from various fields of research explained the innovative techniques related to agriculture and also, 150 farmers from various villages came and had their doubts cleared, and also the farmers got live interaction with the scientists. Farmers exhibited different stalls of their agricultural products and agricultural tools. The programme is Presided by Dr. V. Narayana Rao, Principal, retired Botany Staff, Zoology department Head and Staff Dr. G. Ramesh and Dr. G. Kranthi Kumar.







Technical Session starts (10:15 AM)

National Workshop & Exhibition on		
Programme Schedule		
Resource Person	Торіс	
Dr. S Bharathi, Principal Scientist, ANGRAU	Best Management Practices in Cotton	
Tea Break		
Dr. A Subbarami Reddy, N.G Ranga Agricultural University	Organic Farming & Bio-fertilizers	
Lunch Break		
Dr. B.V.K Bhagavan, Principal & Scientist, Dr YSRHU	Innovative Technologies in Banana Productior	
Dr. G Bindhu Madhavi, Senior Scientist, ANGRAU	Integrated Management of Pes & Diseases	
Tea Break		
Dr. Y. Venkateshwara Rao, Chairman, RNF	Role of NGO for Farmers	
Feedback from Fa	rmers	
	R TECHNOLOGY "- 21st Dece Programme Schedule Resource Person Dr. S Bharathi, Principal Scientist, ANGRAU Tea Break Dr. A Subbarami Reddy, N.G Ranga Agricultural University Lunch Break Dr. B.V.K Bhagavan, Principal & Scientist, Dr YSRHU Dr. G Bindhu Madhavi, Senior Scientist, ANGRAU Tea Break Dr. G Bindhu Madhavi, Senior Scientist, ANGRAU	

