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Rinderpest - free India — a historical note

The Indian Council of Agricultural Research (ICAR) in association with the Department of Animal Husbandry, Dairying and Fisheries is celebrating the national ceremony on the declaration of Global Freedom from Rinderpest. The Food and Agriculture Organization of United Nations, which has been instrumental for declaring Global Freedom from Rinderpest, adopted a resolution on 28 June in Rome during the 37th FAO conference, making it the first animal disease being eliminated from the planet. The resolution also called upon the world community that Rinderpest viruses and vaccines are conserved safely.

The Rinderpest eradication resulted in a major economic benefit to owners of livestock particularly small, marginal farmers and landless labourers. The freedom from Rinderpest globally is a tribute to the skill and efforts of the veterinarians and researchers who worked hard to contain Rinderpest in remote and difficult terrains in various parts of the world.

In 1868 the Indian Cattle Plague Commission appointed by Government of India traced back the earlier detection of Rinderpest in India. The origin was referred to be in Asom in 1752. The research work on Rinderpest was started with the establishment of Imperial Bacteriological Laboratories (IBL), Mukteswar in 1880 now known as Indian Veterinary Research Institute (IVRI), Mukteswar/Izatnagar. In those days, Rinderpest was killing 80-90% of susceptible animal population adversely affecting livestock-driven agricultural operations. In May 1897 Robert Koch – father of tuberculosis – arrived in India along with his team on invitation of Government of India to help the researchers at the IVRI, Mukteswar, to develop protective measures against Rinderpest. Initial Rinderpest research work on the development of anti-sera and vaccines was carried out at IBL, Mukteswar. After 1900, the large-scale production of Rinderpest anti-sera was done in buffaloes.

An important breakthrough was in 1920's, when J T Edwards, Director of the IBL, Mukteswar modified Rinderpest virus by growing it serially in goats and the virus preparation protected animals from Rinderpest for their whole life. This paved the way for new era in the fight to control the Rinderpest in India and beyond.

In 1931, several states discovered that Edward's goat tissue Rinderpest virus could be used in plain cattle without the serum-simultaneous method of vaccination. By 1934 the wet virus was replaced by the use of desiccated goat spleen powder. In 1936, live-attenuated GTRV vaccine methods for production were updated and the vaccine was available from IVRI. By 1940, the use of GTRV vaccine hardly made any impact on overall death rate due to Rinderpest in the country.

It was in March 1951 that scheme for eradication of Rinderpest in India was initiated. The Central Rinderpest Eradication Committee proposed that GTRV could be used for the immunization of all plain cattle, whereas Lapinised vaccine for all Hill cattle and European grade cattle. The National Rinderpest Eradication Programme was started in 1954 and it resulted in down trend up to 1964 in the northern, eastern, western, central and northern-eastern regions of the country.

In March 1983, National Task Force on Rinderpest noticed that eight states were free from Rinderpest, whereas southern states had an endemic nature of Rinderpest, especially Andhra Pradesh. On the basis of the recommendation of the Task Force, strategies for control and eradication of the disease were re-oriented and a time-bound programme 'Operation Rinderpest Zero' was formulated for eradication of Rinderpest within five years.

In December 1983 the Food and Agriculture Organization (FAO) organized an expert consultative meeting on "Requirements for Rinderpest Eradication Campaign in South Asia" at the IVRI, Izatnagar. It recommended a time-bound coordinated action programme–South Asian Rinderpest Eradication Campaign — for the eradication of Rinderpest from South Asia. This mass vaccination provided upliftment in livestock development programme, especially when crossbreeding programme was adopted. Strengthening of veterinary services for livestock disease control with special emphasis on Rinderpest eradication was signed by the Ambassadors of India and European Union at Brussels for six years based on the recommendations of Task Force. The project was named as National Project for Rinderpest Eradication. European Union agreed to provide ECU 40.30 million grant to Government of India. The project was started in May 1992 with a financial outlay of ₹ 294 crore committed by Government of India and EU. It was implemented by Department of Animal Husbandry and Dairying, India, with the participation of Department of Animal Husbandry of the States and Union Territories, ICAR and other Research Institutes.

The National Authorities were convinced on the absence of evidence of Rinderpest in India, and accordingly India submitted the dossier in August 2005 for obtaining Freedom from Rinderpest. The International Committee of World Organization for Animal Health OIE recognized India as free from Rinderpest infection on 25 May 2006. Finally, India committed to be Rinderpest free and secure the world without Rinderpest.

Prioritization of plant physiology and biochemistry research for 12th Five Year Plan

To meet the demands of burgeoning population, agricultural production must be increased tremendously from the shrinking natural resources under unfavourable climatic conditions in the global climate change scenario. Besides, the conventional demands for food, fodder and fibre, now agriculture have to produce more to meet the demands for biofuel requirement. Therefore we must develop genotypes and

devise production technologies to enhance productivity and quality under global climate change scenario. For a quantum jump in yield potential, we must explore the possibilities of breaking the yield barriers to further improve the yield potential, and enhance yield stability under biotic and abiotic stresses. Since enormous amount of post-harvest losses occurs in food grains, fruits and vegetables, efforts should be made to prevent these losses through genetic improvement and post-harvest technologies. Greater emphasis on quality with respect to biofortification and functional foods is needed. To address these problems more than 200 plant physiologists and biochemists from all over India participated in the brain-storming session to prioritize researchable issues in the area of plant physiology and biochemistry for the 12th Five Year Plan Period at Indian Agricultural Research Institute (IARI), New Delhi during 5–6 August 2011.

The inaugural session of the brain storming session was held under the chairmanship of Dr S Ayyappan, Secretary, Department of

Agricultural Research and Education (DARE) and Director General, Indian Council of Agricultural Research (ICAR). Dr H S Gupta, Director, IARI delivered the opening remarks. About 200 delegates representing various Agricultural Institutes of ICAR and State Agricultural Universities participated in the event.

The DG, ICAR initiated the discussion by asking some of the prominent scientists to give their views on researchable issues. Notable among these were Dr R C Pant, Dr H P Singh, Dr J B Mishra, Dr M Udaykumar, Dr M L Lodha, Dr P Anandakumar, Dr K C Bansal and Dr R K Sairam. In his chairman's remarks, DG, ICAR highlighted the importance of basic sciences in ushering in food security. He highlighted that for quantum jump in yield potential we have to increase the resource use efficiency of the crop plants, i.e. to produce "more from less". He emphasized that crop improvement strategies must focus on increasing yield potential of crops through modification of physiological processes, such as, high photosynthetic efficiency, efficient nutrient uptake, greater efficiency to accumulate storage reserves, terminal heat stress in wheat, minimizing post-harvest losses and manipulation of factors responsible for productivity with greater emphasis on quality with respect to the classical nutrition as well as the functional foods. He also announced that ICAR is ready to fund the long-term research of national priority. He further stressed that this can be achieved only through team-based Network Programmes focusing on basic, strategic, applied and anticipatory research.

The plenary session was chaired by Dr S K Datta, Deputy Director General (Crop Science) and co-chaired by Dr H S Gupta, Director, IARI. Dr (Mrs) M Dadlani, Joint Director (Research), IARI also graced the session. Dr Datta emphasized on the development of scientific infrastructure and identification of some of the important challenging programmes such as enhancing yield potential of rice under low light condition, importance of biological nitrogen fixation in relation to enhancing nitrogen-use efficiency, etc. He also stressed the importance of already known concept, which should be translated into products through networking projects.

Active participation of women in agriculture needed for higher productivity – D Purandeswari

"For achieving 8–10% GDP growth we must revisit agricultural policy and schemes and bring out the necessary changes for more participation of women in agriculture. This will help in enhancing agricultural productivity in the country", said Smt. D Purandeswari, Union Minister of State for Human Resource Development. She was inaugurating two days National Consultation on 'Gender Perspective in Agriculture' at New Delhi on 8 August 2011, jointly organized by the Directorate of Research on Women in Agriculture (DSWA) and Division of Agricultural Extension under the aegis of ICAR.

"Migration of rural men has put the pressure on women agricultural labor in rural area. Their child needed more nutritional and health care. Holistically revisiting agricultural policy can solve these problems", she added. Lauding the role played by the ICAR she said that agricultural research should be centered on the problems faced by the women. She also deliberated upon the credit facility for women farmers.

Dr S Ayyappan, Secretary, DARE and Director General, ICAR hoped that this consultation come out with innovative ideas to provide access and control over agricultural resources, information, knowledge and market to women. He also emphasized on better working conditions and share in income and benefits for women in agriculture. "Food

security along with nutritional, health and emotional security is another aspects for development ", he added.

Preparing road map for seed research in India

The Consultation Meeting on "Preparing Road Map for Seed Research in India" was organized on 1 August 2011 at New Delhi under the Chairmanship of Dr S Ayyappan, Secretary, Department of Agricultural Research and Education (DARE) and Director General, Indian Council of Agricultural Research (ICAR). Besides officials from ICAR, 100 delegates representing both public and private sector attended the meeting.

Dr S Ayyappan, Secretary, DARE and Director General, ICAR in his interaction with the seed scientists was of the opinion that seed is the basic input that creates considerable impact to usher in food security. The National Agricultural Research System including private sector and CG system needs to work on a common platform to deliver relevant innovations and seed production technologies. The new Seed Bill, which would help to streamline the supply of quality seed on new plane, is going to be the harbinger of seed quality assurance to the farmers and seed growers. He invited the views of the delegates relating to most important issues to be addressed in seed research during the next 10 years. He said that the roadmap for seed research in current decade should encompass a strategy that connects the status of seed research till date, based on the background information and analysis. This exercise needs to grow on the edifice of defined strategic planning framework, milestones and deliverables on a given time frame to address all the envisaged goal and vision of providing best quality seeds, and requisite practical technologies for seed grower, industry and other stake-holders. This can be achieved only through team-based network programmes focusing on basic, strategic, applied and anticipatory research, including public-private partnership.

New CIFA Regional Research Centre in Gujarat

The Central Institute of Freshwater Aquaculture (CIFA), Bhubaneswar, Odisha has signed a memorandum of understanding (MoU) with Anand Agricultural University (AAU), for the establishment of Regional Research Centre of the Institute in Gujarat.

This will be the fourth regional centre of CIFA, others being located at Rahara (West Bengal); Bengaluru (Karnataka) and Vijaywada (Andhra Pradesh) informed Dr P Jayasankar, Director, CIFA. The Centre will function from the ATIC building of the University as well as from the Krishi Vigyan Kendra (AAU), Devataj of Sojitra Taluka. It will cater to the research and extension needs of freshwater aquaculture of Gujarat as well as the neighbouring states.

The Centre will develop location-specific technologies for freshwater fish farming. Besides, the Centre would contribute to capacity building of line department officials and impart need-based training for fish farmers. Standardization of breeding and culture techniques of regionally important freshwater fish species would also be the thrust area of research of this Centre.

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