

**7<sup>th</sup> Brain-storming session on: "Functional Livestock Products", held at ICAR-IVRI, Izatnagar (U.P.) on 6 June, 2015**

**Recommendations:**

1. There is need to compile a data bank for the completed and ongoing research activities in the area of " Functional Livestock Products" to share the information and avoid the duplication of the work across the research organizations, educational institutes and industries. There should be close coordination between different research groups working on functional livestock products. Panel of experts, each for milk, meat and egg functional products shall be constituted to monitor and coordinate research activities at national level. A mega research project on the lines of " All India Coordinated Research Project" needs to be initiated by ICAR.
2. Nutritional and health claims should be validated through nutritional analysis, in vitro; in vivo investigations (to determine bioavailability/ prophylactic/ therapeutic virtues) in laboratory animal models (e.g. rat, mice etc.) followed by substantiation with clinical trials. There is a need for identification of appropriate biomarkers to evaluate the efficacy of functional products. For this, collaborative research may be taken up with institutions like NIN and AIIMS.
3. Efforts in producing functional milk, meat and egg shall be initiated at production level by promoting R&D work in the field of nutrition, genetics and management. There is a need of genetic selection of animals and identification of the genetic makers for selection of best animals for a specific functional ingredient.
4. R&D facilities in research institutes should be scaled up/ modernized as per global standards to strengthen the analytical and technological skills of researchers/ technologists so that they can address the aspirations of industries and assist in successful commercialization of selected products.
5. Multi- sectoral and multi- disciplinary approach including nutritionists, technologists, medical practitioners, toxicologists and marketing professionals should be adopted for developing and marketing of functional livestock products successfully.
6. Product categories and research prioritization for functional livestock products should be initiated through meaningful consultations among stakeholders and accordingly goals may be set to meet the aspirations of consumers as it is envisaged in the form of vision documents.
7. Strategic interventions need to be developed for marketing of the functional foods considering requirements, cost, convenience, health benefit and associated risk by adopting all food safety measures including traceability.
8. Emphasis should be made on developing low cost composite functional livestock products using traditional knowledge to offer avenues for product diversification.
9. Supply chain related to livestock products needs to be strengthened to deliver "wholesome" raw material (milk, meat & egg) by adopting the "Good Handling Practices". A value chain approach with major emphasis on maintenance of quality attributes involving stakeholders, needs to be adopted.
10. There is a need to develop comprehensive guidelines and country- specific regulations for functional foods by FSSAI.

**7<sup>th</sup> Brain-storming session on: "Youth and Smart Agriculture: Challenges and Opportunities", held at PJTSAU, Rajendranagar (Hyderabad) on 28th - 29th September, 2016**

**Recommendations:**

1. Promote capacity building among youth in terms of knowledge based agriculture encompassing climate resilient technologies and farm mechanism for profitable agriculture.
2. Curriculum development in agriculture education should include enterprise development in agri related businesses.
3. Coordinated efforts of all the organizations, public, private, voluntary working in and for agriculture are needed for synergy in empowering youth towards agripreneurship and smart agriculture.
4. Encourage Start- ups to serve as mentors to the outgoing graduate students in the final year in their respective agri- enterprises.
5. Impart focused training in identified areas for the faculty of universities in agri-preneurship.
6. Effective technical back stopping and hand holding with regard to finance and skill towards conversion of youth into successful agri-entrepreneurs for sustainable livelihoods is imperative.
7. Reorient agriculture system to the present needs by making use of tools such as Remote Sensing, GIS, GPS, use of sensors, drones, mobile technology, different web portals for data mining and bioinformatics etc.
8. Agricultural graduate students should register one e-course and faculty should use one e-book during the period of the course.
9. Harness employment opportunities in agricultural related services like water, insurance, credit, inputs, market linkages and technologies.
10. Introduce agriculture and allied subjects as a part of curriculum at primary school (STEMA) level to attract youth towards choosing agriculture as a profession.
11. Increase fellowships for PG education in agriculture and allied subjects to promote higher education for developing a talented technical human resource in the field.