NAHEP-CAAST

ICAR-Indian Agricultural Research Institute, New Delhi 110 012

Omics Tools and Techniques for Nutritional Evaluation and Enhancement
(09th - 20th January 2020)

Training Schedule

Day 1	**Thursday, 09th January, 2020**
9.00-10.00 am	Registration
10.00-12.00 am	**Inaugural Programme**
12:00-12:15 pm	High Tea followed by Group Photo
12:15 – 01:15 pm	**Lecture-1 Dr. Shelly Praveen**, Head & Principal Scientist Division of Biochemistry, ICAR-IARI, New Delhi "*Food Nutrition and Health: How to Achieve Sustainable Development Goal by 2030*"
1:15 – 2:00 pm	Launch Break
2:15 – 05:00 pm	**Practical 1** Gene expression analysis through quantitative Real-Time PCR **(Dr. Ranjeet R. Kumar & Dr. Suneha Goswami)**
05:00- 05:30 pm	Pre-evaluation of trainees (**Dr R. R. Kumar & Dr. S. Goswami**)
Day 2	**Friday, 10th January, 2020**
09:30–10:30 am	**Lecture 2 Dr. Ranjeet R. Kumar**, Senior Scientist Division of Biochemistry, ICAR-IARI, New Delhi "*Proteomics approaches for elucidating the network associated with tolerance and nutrient density in wheat*"
10:30 – 10:45 am	Tea Break
10:45 – 12:00 am	**Lecture 3 Dr. Gyan Prakash Mishra**, Principal Scientist Division of Genetics, ICAR-IARI, New Delhi "*Biofortification of Legume Crops – Breeding Strategies for Nutritional Security*"
12:00 – 05:00 pm	**Practical 2** Differential Protein Profiling using SDS - Polyacrylamide Gel Electrophoresis and 2-D PAGE **(Dr. R.R. Kumar & Dr. Suneha Goswami)**
05:00-06:00	**Quiz Contest on "Science for Future [S4F]**
Day 3	**Second Saturday, 11th January 2020**
Day 4	**Sunday, 12th January 2020**
Day 5	**Monday, 13th January, 2020**
09:30–10:30 am	**Lecture 4 Dr. N. K. Singh**, Project Director National Institute of Plant Biotechnology, Pusa, New Delhi "*Functional Genomics: Strategies to Manipulate the Nutritional Quality of Grains for the Development of Climate-Smart Crop*"
10:30 – 10:45 am	Tea Break
10:45 – 12:00 am	**Lecture 5 Dr. Dinesh Kumar,** Principal Scientist ICAR-IASRI, New Delhi "*Use of NGS data in agricultural germplasm improvement and*

	management"
12:00 – 04:00 pm	**Practical 3** Estimation of DNA methylation in a gene associated with isoflavone biosynthesis in soybean **(Dr. Suresh Kumar)**
05:00 – 06:00 pm	**Skype talk by Dr. C. Tara Satyavathi**, Project Coordinator ICAR-AICRP on Pearl Millet, Jodhpur, Rajasthan "*Pearl Millet: The Gods Grain*"
Day 6	**Tuesday, 14th January, 2020**
09:30–10:30 am	**Lecture 6 Dr. Diwakar Singh,** Assistant Professor Navsari Agriculture University, Navsari, Gujarat "*Minor Millet: The Potential Substitute for Cereals*"
10:30 – 10:45 am	Tea Break
10:45 – 12:00 am	**Lecture 7 Dr. Suresh Kumar**, Principal Scientist Division of Biochemistry, IARI, New Delhi "*Nutriepigenomics : Elucidating the dynamics of nutrient and quality of grains*"
12:00 – 01:00 pm	**Lecture 8 Dr. Sneh Narwal**, Principal Scientist Division of Biochemistry, ICAR-IARI, New Delhi "*Evaluation of nutritional quality of wheat and barley :approaches and strategies*"
02:15 – 05:00 pm	**Practical 4** Estimation of beta-glucosidase activity for enhanced bioavailability of bioactives [**Dr. Anil Dahuja & Dr. Raja Rani**)
05:00-06:00	**Evening Talk (S4F) [Dr. R. Srinivasan, EX-PD, NIPB]**
Day 7	**Wednesday, 15th January, 2020**
09:30–10:30 am	**Lecture 9 Dr. C. Viswanathan**, Head & Principal Scientist Division of Plant Physiology, ICAR-IARI, New Delhi "*Phenomics – Past, Present and Future Perspective*"
10:30 – 10:45 am	Tea Break
10:45 – 11:45 am	Visit to Phenomics Facility (**Dr. Sudhir Kumar**, Scientist, Division of Plant Physiology, ICAR-IARI, New Delhi)
11:45 – 01:00 pm	**Lecture 10 Dr. Archana Sachdev**, Principal Scientist Division of Biochemistry, ICAR-IARI, New Delhi *"Nutrigenomics and Personalized Nutrition: Need of Hour "*
02:00 – 06:00 pm	**Practical 5** Estimation of Phytic acid content in soybean seeds **(Dr. Archana Sachdev & Dr. Monika Jolly)**
Day 8	**Thursday, 16th January, 2020**
09:30–10:30 am	**Lecture 11 Dr. Sanjay J. Jambhulkar**, Head Department of Atomic Energy, BARC-Mumbai "*Mutagenesis for Crop Improvement*"
10:30 – 10:45 am	Tea Break
10:45 – 11:45 am	**Lecture 12 Dr. Bhupinder Singh**, Principal Scientist CESCRA, ICAR-IARI, New Delhi "*Application of Radioisotopes in Deciphering Ionome Interactions*

	and Source-Sink Relationship in Plants"
11:45 – 01:00 pm	**Lecture 13 Dr. Archana Singh**, Principal Scientist Division of Biochemistry, ICAR-IARI, New Delhi "*Starch-value addition by modifications: A promise to improve human nutrition*"
02:15 – 06:00 pm	**Practical 6** Method for green extraction of Vitamin-A from Carrot **(Dr. Sweta Kumari & Dr. Vinutha T.)**
Day 9	**Friday, 17th January, 2020**
09:30 – 10:00 am	**Interaction with Course Director**
10:00–11:00 am	**Lecture 14 Dr. Anil Dahuja**, Professor Division of Biochemistry, ICAR-IARI, New Delhi "*Bioavailability of Macro and Micronutrient: Strategies and Approaches*"
11:00 – 11:30 am	Tea Break
11:30 – 12:30 pm	**Lecture 15 Dr. Sunil K. Jha**, Professor Post-harvest Technology, ICAR-IARI, New Delhi "*Post-Harvest Technology and Processing : How to Use it for Doubling Income*"
02:15 – 05:00 pm	**Practical 7** Estimation of amylose and amylolytic activity in rice **(Dr. Archana Singh & Dr. Veda K.)**
05:00-06:00	**Evening Talk (S4F) [DR. Ashok K. SINGH, J.D. (Res.), IARI, New Delhi]**
Day 10	**Saturday, 18th January, 2020**
09:30–10:45 am	**Lecture 16 Dr. G. Venkateswarlu**, ADG (EQR) Education Division, ICAR "*Omega-3-fatty acid: Essential Contribution in Human Body*"
10:45 – 11:00 am	Tea Break
11:00 – 12:00 pm	**Lecture 17 Dr. Suneha Goswami, Scientist-SS** Division of Biochemistry, ICAR-IARI, New Delhi "*Rancidity matrix – unfolding the story of Pearl Millet flour*"
12:00 – 01:30 pm	Visit to super-computer facility at ICAR-IASRI (**Dr. Dinesh Kumar**, ICAR-IASRI)
02:15 – 06:00 pm	**Practical 8** Estimation of Enzymatic Lipid Hydrolysis in Pearl Millet (**Dr. Suneha Goswami & Dr. Shelly Praveen**)
Day 11	**Sunday, 19th January, 2020**
Day 12	**Monday, 20th January, 2020**
09:30–10:30 am	Post- training evaluation
10:30 – 11:45 am	Valedictory Function
11:45 – 04:00 pm	Interaction with faculty members