Agricultural Genetics: Understanding and Improving Plants and Animals for Food and Agriculture

Overview

Human population growth is creating an ongoing increase in demand for food and other agricultural products, and sustainable agriculture to satisfy this demand requires large increases in agricultural productivity. Varieties of plants and animals with potential to deliver the required productivity have been developed by genetic selection and breeding. This was not necessarily a conscious process in early domestications for agriculture; however, in more recent times this process has become more deliberate, especially as science and technology have provided a growing understanding of agricultural organisms.

Since advances such as whole genome DNA analysis, molecular screening and targeted mutagenesis serve as important tools in the ongoing effort to meet the global challenge of sustainable food supply, the importance of agricultural genetics is appreciated now more than ever before. This course aims to cover key issues in this compelling and vital field.

Objectives

1. Domestication, heterosis, polyploidy and epigenetics in plants and animals
2. Approaches to genetic improvement of agricultural species
3. Advances in breeding techniques including molecular technologies such as DNA sequencing, marker assisted selection and transgenics.

Modules	**September 11 to 15, 2017** **13 Hours Lectures** **10 Hours Tutorials** **Number of participants for the course will be limited to thirty.**
You Should Attend If…	▪ You are Teacher or Student of Botany, Agriculture, Zoology, Life Sciences ▪ You are Scientist working in the area of Agricultural Genetics
Fees	The participation fees for taking the course is as follows: **Students from SPPU : Rs. 500/-** **All Others: Rs. 1000/-**

The Faculty

Prof Robert Henry is Director of the Queensland Alliance for Agriculture and Food Innovation (QAAFI), The University of Queensland, Brisbane, Australia. His specialty research area is the study of agricultural crops using molecular tools. He has lead the way in research into genome sequencing to capture novel genetic resources for the diversification of food crops to deliver improved food and energy products. His work has included the study of DNA-based methods for identification of plants and their pathogens, the development of molecular markers for plant breeding and the genetic transformation of plants. A common focus of much of this work has been the application of DNA technology to the improvement of the quality of crops and agricultural and food products. His current research focus is on the major global food crops, rice and wheat and the leading current and potential energy crops, sugarcane and Eucalypts. Analysis of nutritional and functional characteristics ranges from determination of human preferences for properties of foods from bread to coffee and the chemical composition that determines the suitability of plant biomass for biofuel or biomaterial production.

Course Co-ordinator

Prof. Altafhusain Nadaf
Department of Botany
Savitribai Phule Pune University
PUNE - 411007
Phone: +91-7588269987
E-mail: abnadaf@unipune.ac.in