Announcement of tailor made training course titled

Capacity development in improved seed technology and accelerating genetic improvement in food crops by using genotyping by sequencing approach

To be held in Bangkok, Thailand between 18 to 29 March, 2019

Introduction

Wageningen University & Research (WUR)-Plant breeding (The Netherlands) in partnership with Kasetsart University(KU) and East West Seed (EWS), Thailand, have the pleasure to announce the implementation the above mentioned tailor made course. The event is funded by the Orange knowledge programme (OKP) of NUFFIC in the Netherlands with contribution from KU and EWS.

Objectives of the course

Upgrading skills and know-how in improved seed technology and modern plant breeding.

Programme and contents of the course

The training courses consists of two modules (see below contents of each module whereby each module has a duration of one week. Module 1 covers topics related to Modern seed quality to be held at EWSC (Bangkok) from 18 to 22 March 2019) while module 2 deals with modern plant breeding technologies , to be held at KU in Kamphaen Gasaen from 25 to 29 March 2019.

Module 1. Modern Seed Quality

- Lectures on 'Seed germination and enhancement'
- Hands-on 'Seed germination and enhancement', -
- building a 'home-made' seed priming device and start priming
- Seed drying and storage, theory - Role of temperature, moisture and oxygen; seed drying systems
- Hands-on 'Seed drying and storage' - use of drying systems and moisture measurements
- Seed vigor, theory -Seed maturity, seed vigor analysis methods
- Hands-on 'Seed vigor', measurement of seed vigor using a breath analyzer for ethanol
- Lectures on 'Seed dormancy' - After ripening, dormancy mechanisms, genetics, abscisic acid and gibberellins
- Hands-on with continuation on Seed enhancement and Seed drying experiments
- Assembling data on the hands-on experiments and discussion on the interpretation of the results
- Questionnaire on knowledge gained
- Round table discussion on cases brought by the participants

Module 2. Modern Plant Breeding

- Breeding goals and how to reach the goals.
- Markers, Marker Assisted Selection, case studies, Q & A, Toolbox and Breeding game
- Lectures - Different mapping populations, Phenotyping examples, High throughput genotyping
- Assignments - Linkage assignments tomato, Primer design, Whole Background selection
- Case study - Design breeding program with known markers,
- how many plants, how many generations, phenotyping results
- Lecture - Potato Breeding, what makes it difficult and what can be changed
- Assignments - use of mapping software (Join Map and Map QTL)
- Genetic and physical linkage, recombination frequencies
- Case studies, how to solve problems in plant breeding
- Association mapping (GWAS), interaction different stresses
- Lectures - New developments in sequencing, genotyping, phenotyping,
- candidate genes, genome editing techniques vs genetic modification,
- ~omics technology
- Practical assignments - How does this help the Plant Breeder
- Genotyping by sequencing and its application in plant breeding

Target audience

Agronomists, plant breeders, plant pathologists , Plant physiologist researchers, docents whom are involved in the addressed topics in teaching, research, and extensions services at the level of BSc, M.Sc. and PhD. Equal participation of men and women in the event is encouraged and is highly desired.

Date and location

Module 1: 18 to 22 March 2019 to be held at EWS (Bangkok)

Module 2: 25 to 29 March 2019 to be held at KU campus in Kamphaen Gasaen

Course leaders:

Dr. Steven Groot

Dr. Sjaak van Heusden

Dr. Daniel Danial

Organized by WUR-Plant breeding

Travel and lodging expenses

For the selected participants, travel and lodging expenses will be compensated. Please note that the spoken language during the event will be in English.

Contact persons

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