Speed Breeding for Accelerated Crop Improvement in East Africa Workshop

# The Idea

Following on our previous OpenPlant project where we developed a [bench-top controlled environment chamber for speed breeding](https://www.biomaker.org/projects/bench-top-controlled-environment-growth-chamber-for-speed-breeding-and-crop-transformation), we are now in the endeavour of facilitating the adoption of “Speed Breeding” in East Africa. We are proposing to carry out a two-day workshop at (KALRO), Njoro, Kenya, targeting researchers and breeders in Kenya, Ethiopia and Sudan. Our aim is to focus the workshop on:

* Introduction to “Speed Breeding”.
* How to effectively incorporate “Speed Breeding” into breeding programme.
* Developing low-cost and local sourced “Speed Breeding” facilities.
* Appropriate crop husbandry under “Speed Breeding” conditions.
* “Speed Breeding” for short day plants and horticultural crops.

An event like this would be the first of its kind where not only the knowledge and technology is being taught, but also the low-cost alternatives are built by the participants. Therefore, enforcing the knowledge shared, and most importantly empowering the participants with open-hardware solutions. To do so we are asking for funding to OpenPlant to cover the cost of the materials necessary to build three cabinets and travel/accommodation for one facilitator.

The Workshop is being done together with Dr Oluwaseyi Shorinola, FLAIR Research Fellow at BecA-ILRI Hub. He has secured funding to cover the rest of the expenses including flight, accommodation, and transportation for participants from around Kenya, Ethiopia and Sudan.

# The Team

Oscar Gonzalez, Quadram Institute Bioscience, Norwich, UK.

Ricardo Ramirez, John Innes Centre, Norwich, UK.

Sreya Ghosh, John Innes Centre, Norwich, UK.

Luis Yanes, Earlham Institute, Norwich, UK.

Marcela Mendoza, Aarhus University, DK

# Budget plan

The costing will be as follow:

|  |  |  |
| --- | --- | --- |
| Type | Details | Amount (GBP) |
| Consumables | Parts for building 3 fully operational cabinets | £3200 |
| Transportation | Extra spares, tools, customs and baggage fees | £400 |
| Travel | Flight and accommodation for RR | £1400 |

# Timeline

We aim to hold the workshop 21-22 November 2019 with the following program:

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| --- | --- | --- | --- |
| **Day 1, Thursday Nov 21, Introduction to Speed Breeding** | | | |
| Start | End | Event | Facilitator |
| 08:15 | 08:45 | Shuttle to Njoro | Motogari |
| 09:00 | 09:30 | Welcome remarks by KALRO Centre Director and Olu | Olu |
| 09:30 | 10:30 | Introductions - Part 1: **who** am I, **what** I do and **why** Speed Breeding? | Peter Emmrich |
| 10:30 | 11:00 | Tea/Coffee Break |  |
| 11:00 | 12:30 | Introduction to Speed Breeding /Discussions | Lee |
| 12:30 | 13:30 | Lunch |  |
| 13:30 | 14:30 | Introduction - Part 2: **who** am I, **what** I do and **why** Speed Breeding? | James |
| 14:30 | 15:30 | Case Study: Speed Breeding in wheat and discussion | James |
| 15:30 | 16:00 | Tea/Coffee Break |  |
| 16:00 | 17:00 | Speed Breeding for tropical/short-day crops and discussions | Lee Hickey |
| 17:30 | 18:00 | Shuttle to Nakuru | Motogari |
|  |  |  |  |
| **Day 2, Thursday Nov 22, Speed Breeding Facilities** | | | |
| 08:15 | 08:45 | Shuttle to Njoro | Motogari |
| 09:00 | 09:45 | Setting up Speed Breeding in Glasshouse, growth rooms, containers and Discussions | Lee |
| 09:45 | 10:30 | Introduction to low-cost options for speed breeding. | Oscar/Ricardo |
| 10:30 | 11:00 | Tea/Coffee Break |  |
| 11:00 | 12:30 | Practical - Making a Benchtop -Part 1 | Oscar/Ricardo |
| 12:30 | 13:30 | Lunch |  |
| 13:30 | 15:30 | Practical - Making a Benchtop -Part 2 | Oscar/Ricardo |
| 15:30 | 16:00 | Tea/Coffee Break |  |
| 16:00 | 17:00 | Wrap-up discussion and Q&A | Olu |
| 17:30 | 18:00 | Shuttle to Nakuru | Motogari |