



Genotyping Tools and Services

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Comments or questions?

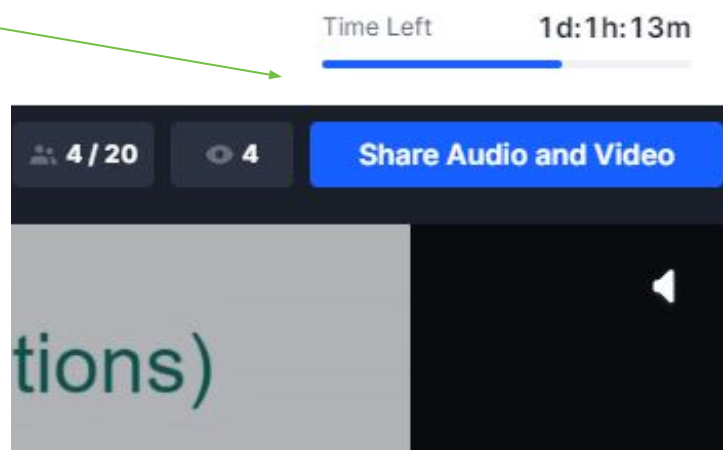
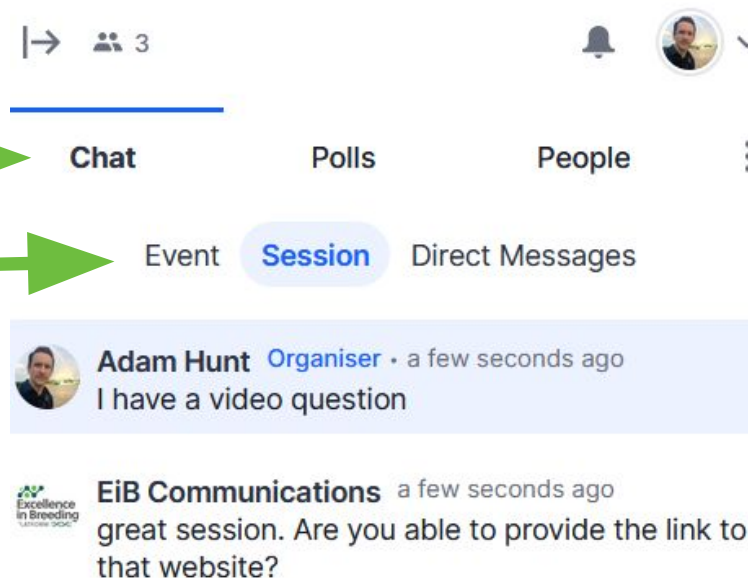
Instructions for participants:

Chat question:

- Click Chat
- Click Session
- Add your question

For Video Question:

- Ask to share video
- You will be in queue. Moderator grants access / can control mic
- Ask your Q when introduced
- You can stay to discuss. Or click “Leave” to turn off video



Module 3 Team Members



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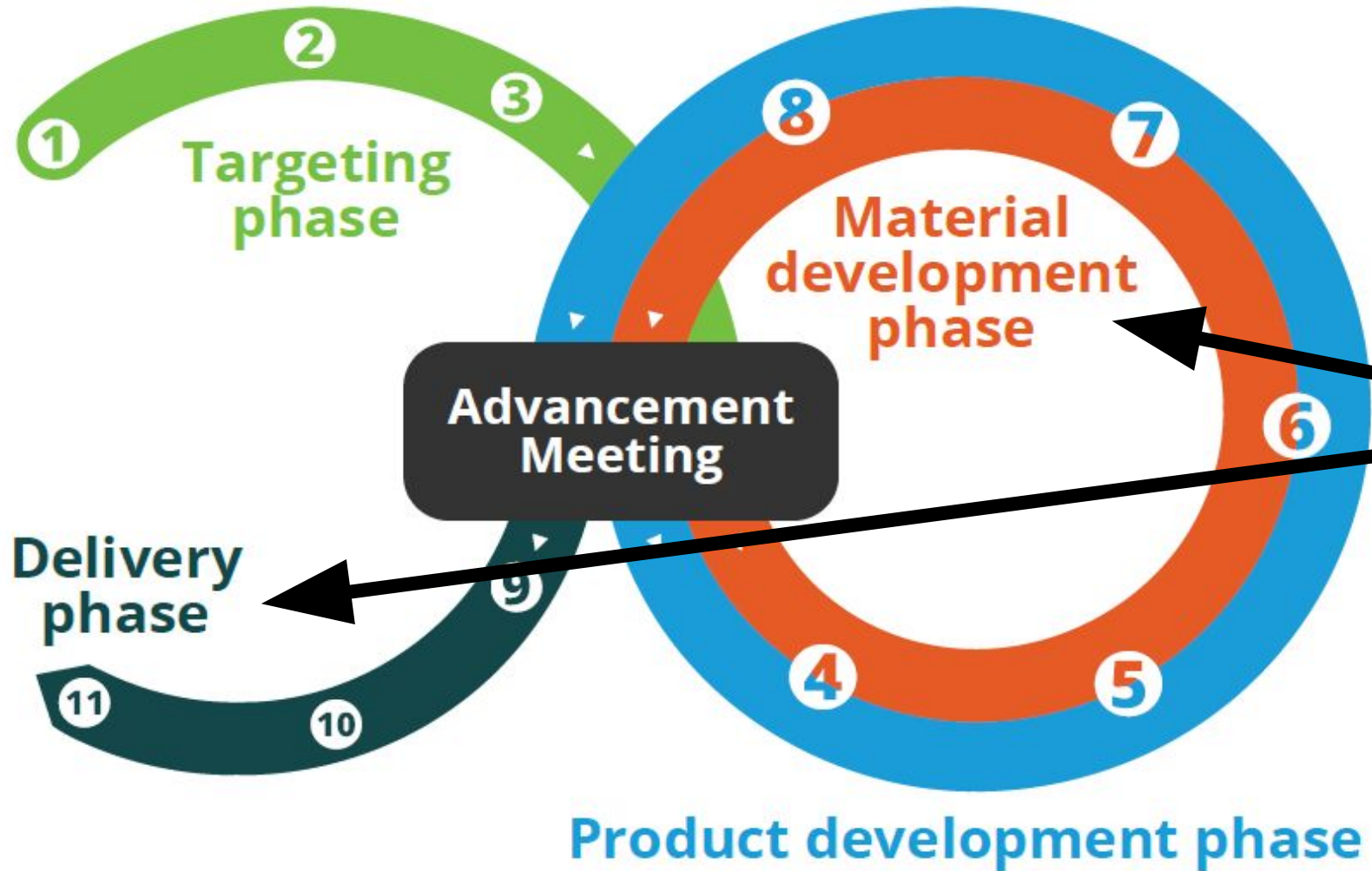


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Module 3- Genotyping Tools and Services



1. Target markets are defined for each product pipeline
2. Breeding program & seed system capacities assessed
3. Product profiles defined and prioritized
 - Advancement meeting determines which products pass to the next phase
4. Breeding scheme optimized to deliver product profiles
- 5-8. Appropriate technology used to execute crossing, multiplication, evaluation & selection
9. Product evaluation
10. Delivery strategy
11. Scale-out

Criteria for Selecting Genotyping Platforms

Trait Specific
Background recovery
QA/QC



Low density platform

Genomic Selection
Fingerprinting



Mid density platform

Elite parental screening

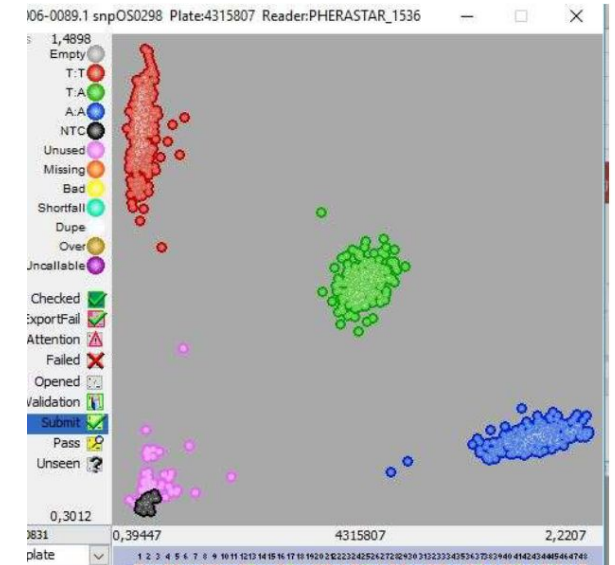
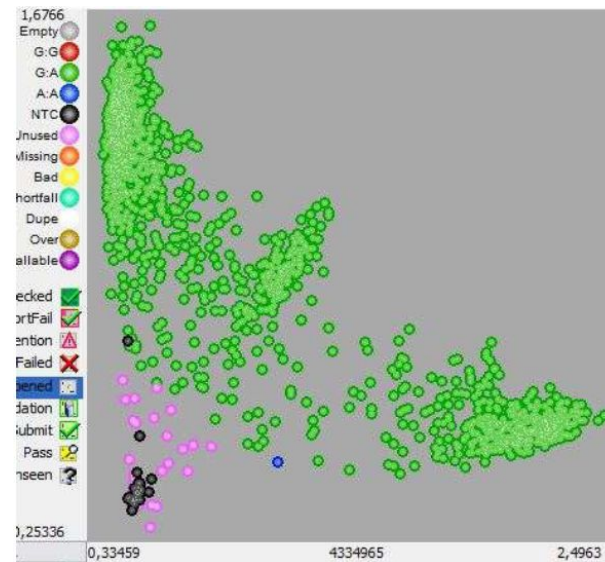


High density platform

By 2021



Sampling Logistics Training



Low- & mid-density genotyping services



World-class services at reduced cost for CGIAR and NARS breeding programs

Low-cost, accurate genotyping services offer several different applications with the potential to accelerate the production of improved varieties and create efficiencies in crop breeding programs.

However, smaller breeding programs may not have the know-how or sufficient demand for genotyping to be beneficial and economical.

The CGIAR Excellence in Breeding Platform (EiB) aggregates demand from several breeding programs to negotiate competitive genotyping prices with vendors, offering a streamlined service along with application-oriented training and advice.

This document introduces the EiB low-density and mid-density genotyping services for potential users.



Contact:
CIMMYT-EiB-Genotyping@CGIAR.org

How does it work?

The low- and mid-density services are based on contracts negotiated by EiB with validated DNA extraction and genotyping service vendors based on anticipated bulk demand across eligible CGIAR and national agricultural research (NARS) institutions.

How can I get started?

Start by getting in touch with EiB genotyping contacts for advice, procedures and costing/budget questions. For example, it is important to follow the correct material sampling protocols to obtain high-quality genotyping data.





Low Density (HTPG) Platform

- August 30th, 2016- INTERTEK & ICRISAT
 - Ending in December, 2020
- Centers under the agreement:
 - 30+ CGIAR and NARs users to date (24 countries)
 - Private partners,
 - USDA, Embrapa, CIRAD, CSIRO,.....
- Target Crops:
 - Wheat, Maize, Rice, Groundnut, Chickpea, Pearl Millet, Potato, Cassava, Sorghum, Cowpea, Common Bean, Soybean, Pigeon Pea, Finger Millet, Yam, Banana, Tilapia,...
 - Tomato, Cocoa, Coffee (soon)

Low Density Genotyping



Mid Density Platform

- Launched in August of 2020

- Services:

- Extraction: Intertek SWE, IND & AUS
- Genotyping: DArTag (Targeted amplicon sequencing)
- 1-4K SNPs @ \$11 (384) and \$10 (1536)
- 15 business days turn around
- Setup cost: \$12 per assay (6 weeks)

- Pilot crops:

- Rice, Potato, Common Bean, Wheat, Maize (validated)
- Cowpea (under verification)
- Sorghum (pending submission)
- Blueberry, Alfalfa, Sweet potato, Salmon (USDA Breeding Insight)

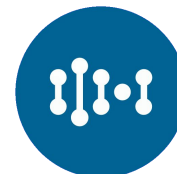


Excellence in
Breeding
Platform



Coming soon in 2021...

- Low density KASP & Mid density marker 'database'
- E-learning tools to facilitate usage of shared services
- New Low density (formerly HTPG) service agreement (Under review)
- Online sample submission tools (Q2-Q3, 2021)
- High density genotyping solutions (Further engagements)
- Regional workshops- Q2 2021 onwards
- New work plan and priorities- alignment with CtEH



Genotyping under CtEH Network Strategy



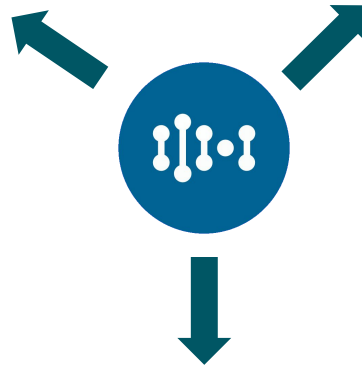
Centralized Deployment Strategy

1. Unified trait introgression (hubs)
2. Routine QA/QC
3. GS strategy (crop specific)



Operationalized Genotyping

1. Genotyping charge accounts
2. Reduced transaction costs
3. Data point allocation (future state)



Network Coordination & Support

1. CGIAR and NARs networks
2. Technical advisory and logistics
3. Capacity building & knowledge sharing



Thanks!
Questions?



and more