

Minutes of OREGIN Management Meeting March, 2026

Date: 11th March 2026

Time: 09:00 – 13:00

Location: Zoom

Attendees:

- Ian Bancroft (University of York, Chair)
- Bruce Fitt (University of Hertfordshire)
- Yongju Huang (University of Hertfordshire)
- Coretta Kloeppe (Limagrain)
- Pete Berry (ADAS)
- Madeleine Berger (University of York)
- Todor Chiplakov (University of York)
- Andrea Harper (University of York)
- Ben Hague (ADAS)
- Tom Wood (NIAB)
- Zhesi He (University of York)
- Tom Lawrenson (John Innes Centre)
- Peter Bancroft (University of York)
- John Clarkson (University of Warwick)
- Ian Graham (University of York)
- Nigel Padbury (premiumcrops)
- Jenna Watts (AHDB)
- Rodrigo Echevoyen (Elsoms)
- Panida Wadsworth (Elsoms)
- Graham Teakle (University of Warwick)
- Jon West (Rothamsted)

1. Welcome and Apologies

Ian Bancroft opened the meeting at 09:00. Apologies were received from Helen Riordan and Louise Everest.

2. Minutes and Action Points from Previous Meeting (Dec 2025)

The minutes from the previous meeting were reviewed and accepted without amendment. A review of the action points confirmed the following:

- **Action 1 (Ian & Zhesi):** Follow-up with Yongju about the OREGIN website transfer. This was completed and reporting of the outcome will be part of an agenda item.
- **Action 2 (Ian):** Follow-up with Coretta about the mutagenesis panel. This was completed and an update will be covered as an agenda item.
- **Action 3 (Ian & Panida):** Sharing of presentation materials from the last meeting. This has been completed. The embargo on a specific item from the last meeting has been lifted as the associated project is now active.

3. Project Management and Administrative Matters (Ian Bancroft)

- The lead contract with Defra, specifically regarding gene editing and material transfer practicalities for the John Innes Centre, is still awaiting final sign-off from Defra. This is not expected to affect any current subcontracts.

4. Updates on Work Programme

4.1. Oilseed Rape Network and Traits

a) Provision of Physical Resources (Graham Teakle, Yongju Huang)

- **Germplasm (Graham Teakle):**
 - No new requests for DFFFS material have been received.
 - Stocks of spring lines are being refreshed.
- **Pathogen Resources (Yongju Huang):**
 - New *Light Leaf Spot (LLS)* pathogen isolates were obtained from the MAGIC field site this season.
 - A master's student is utilising the OREGIN *Phoma Stem Canker* pathogen collection.
 - A formal request for *Phoma Stem Canker* pathogen isolates has been received and will be dispatched next week.
 - New isolates were collected from field trials last year and will be assessed in late March/early April.

- Presented field trial data showing that fungicide applications were highly effective this year.

b) Provision of Information Resources (Zhesi He)

- **Zhesi He** presented the newly migrated OREGIN website, now hosted at the new domain oregin.org.uk.
- The site has been rebuilt using a modern framework for speed, responsiveness, and a custom brand identity. The migration provides full control over data and server autonomy.
- The site is in a pre-launch phase. All OREGIN members were invited to review the site and provide feedback to Zhesi.
- Once feedback is integrated, an official public launch will be coordinated.

c) Mutagenesis Approach to Improving LLS Resistance (Ian Bancroft, Coretta Kloeppel, Panida Wadsworth)

- **Field Trial (Coretta Kloeppel):** The field trial site is near Aberdeen. Disease pressure is currently low, so the plant assessment and digging have been delayed. The team is aiming for the first or second week of April for the assessment.
- **Site Visit (Jon West, Panida Wadsworth):** A group visit to assess the trial is planned for April. Flights will need to be booked, requiring at least a week's notice.
- **Next Steps (Panida Wadsworth):** Resistant plants will be dug up and seed will be bulked up for a follow-on trial.

d) Hybrid Vigour for Improving Pest Tolerance and Rooting (Ian Bancroft, Peter Bancroft, Ben Hague, Todor Chiplakov)

- **Overview (Ian Bancroft):** 389 RNA pools from the above-ground heterosis study have been sent for sequencing. A subset of hybrids showing a range of above- and below-ground vigour has been selected. Peter Bancroft is now producing seed for small-scale field trials.
- **Root Screen Results (Ben Hague):** Ben presented detailed results from the root phenotyping of 50 hybrids and their parents.
 - Significant variation in root traits (total length, maximum depth, convex hull) was observed.

- On average, hybrids showed significant heterosis (performed better than the average of their parents), with some lines exhibiting heterosis values >2.5.
- There was no correlation between above-ground and below-ground heterosis, making the experimental design more complex.
- A subset of lines showing contrasting root architectures (e.g., prolific lateral roots vs. strong tap root) was identified.
- **Discussion:** The group discussed the need to validate these seedling root traits in a field environment. The field experiment, planned for drilling in August 2026, will address this. Site selection needs to begin imminently. Rodrigo Echegoyen noted that root-specific transcriptomics would be more informative than leaf tissue for understanding root heterosis. This was agreed. Root transcriptome analysis is not part of the work plan, but IB noted that resources for covering the cost of additional transcriptome sequencing for root RNA may be available; covering the labour and growth costs would be more challenging.

e) Glucosinolate-based Pest Deterrence (Ian Bancroft, Madeleine Berger, Todor Chiplakov)

- The project is ahead of schedule. Knockout mutants for all target UMAMIT genes have been identified from an existing radiation mutagenesis panel.
- These mutants are being crossed with lines with high seed glucosinolates. 67 lines are now in F2 generation, segregating for the desired combination of high leaf glucosinolate synthesis and homozygous knockouts of glucosinolate transport to seeds.

4.2. Novel Technologies in Oilseed Rape

a) Advancing wild relative introgression in WOSR:

No new updates.

b) Advancing radiation mutagenesis in WOSR (Ian Bancroft, Peter Bancroft, Madeleine Berger, Todor Chiplakov):

- Two new radiation mutagenesis panels in spring OSR are in development. M2 seeds for two of three batches have been sown, with the third to follow shortly. DNA sampling is underway, aiming to send 2016 samples for genome re-sequencing by the end of the month.

c) Parameterization of Genome Editing in WOSR (Tom Lawrenson)

- Testing of guide RNAs for eight UMAMIT genes is complete. Two constructs are being finalised for transformation into winter oilseed rape.
- Results from protoplast screens for prime and base editing are very promising.
- Tom is seeking suggestions for a target gene for prime editing to demonstrate this new capability. The goal is to recreate a specific, (potentially) economically useful point mutation. Ian Bancroft noted this would be an ideal application for the Novel Technologies Fund.

d) & e) Application of Machine Learning (Zhesi He)

- **Variant Detection:** Based on benchmarking, a strategy has been adopted using **DeepVariant** as the primary caller (for accuracy) and **GATK** as a secondary step (for sensitivity). Candidate variants will be prioritised where both callers agree.
- **Association Analysis:** Work is underway to modernise the Associative Transcriptomics pipeline to handle longer read lengths and use machine learning (Random Forest/XGBoost) to capture non-linear associations. A memory bottleneck has been encountered when merging large cohorts, and solutions are being tested.

f) Responsive Deployment of Novel Technologies Fund (Ian Bancroft)

- Ian outlined the process for bidding on the ~£200k ring-fenced fund, as detailed in the project proposal.
- Bids are to be presented at in-person management meetings (June or Dec 2026 onwards). A one-page summary must be circulated beforehand.
- The Management Committee (with the bidder stepping out) will assess proposals based on alignment with OREGIN aims and stakeholder value. Approval requires stakeholder consensus.
- The primary expected use is for gene editing projects with Tom Lawrenson, but other technologies (ML, mutagenesis) are in scope. Ian Graham asked if it could be used for alternative crops; Ian Bancroft confirmed it is currently envisioned for the novel technologies listed in the proposal for oilseed rape, but could be widened if undersubscribed.

4.3. Alternative Oilseed Crops

a) Climate Modelling:

No update as presenters were absent.

b) Evaluation of Hemp (Ian Graham, Panida Wadsworth)

- **Trial Plans (Panida Wadsworth):** A provisional trial plan is in place for a 4-rep trial at an Elsoms site. A Home Office license is required.
- **Licensing Update:** A police compliance officer has visited the Elsoms site and was positive. Panida is awaiting final Home Office confirmation. A second site with a collaborating farmer is delayed due to a backlog in the farmer's DBS check. It was agreed to postpone the second site to 2027 if the licence isn't obtained in time, which may be beneficial for demonstrating the crop over two seasons.

c) Evaluation of Sunflower (Florentina Petrescu, Coretta Kloeppel)

- **Seed Arrival (Coretta Kloeppel):** Seed for the sunflower diversity set is currently being imported from French partners. This is ahead of schedule.
- **Next Steps (Ian Bancroft):** The early arrival allows for molecular analysis (RNA extraction for association analysis) to be conducted this autumn, ahead of field trials next year.
- **Coordination (Graham Teakle, Pete Berry):** Graham Teakle noted Warwick's milestone for the trial next year. Pete Berry clarified the trial is the one previously organised by Simon Berry, potentially to be drilled by Eurofins and Covenham to near Cambridge. A planning meeting is needed to coordinate activities between Limagrain, ADAS, UoW, UoH and York. Andrea Harper was identified as the key York point of contact for sunflower and hemp work.

5. Updates on Knowledge Exchange and Dissemination

- **UK-BRC Meeting:** No update from Steve Penfield on the 2026 meeting (being organised by Steve and Jo Hepworth of U. Durham).
- **OREGIN Stakeholder Forum:** Panida Wadsworth and Coretta Kloeppel will begin planning. A theme was discussed, with Nigel Padbury suggesting a focus on practical outcomes for stakeholders (e.g., market impacts, climate change sustainability, pest management) rather than purely genomic results. Ian Bancroft suggested potentially featuring emerging results on plant vigour.
- **Training (Andrea Harper):**
 - **Hybrid Breeding Training (with Coretta):** Planned for the 2nd or 3rd week of May. Andrea will send out a call for interest to gauge the best date.

- **Future Training:** Andrea welcomed ideas for future training sessions. Genomic training from York is planned for next year.
- **Publications & Data:** Ian Bancroft thanked everyone for their input and reminded the group that contributions for the June end-of-year report will be needed soon.
- **Community Engagement:** No new activities for hemp or sunflower to report until trials are established.

6. Updates on Social Value

- **Andrea Harper** highlighted the upcoming hybrid breeding training course as a key OREGIN training activity.
- **Yongju Huang** was thanked for contributing to social value through her work with recruiting PhD and Masters students.

7. Any Other Business

No other business was raised.

8. Date of Next Meeting

The next Management Committee meeting will be an in-person meeting hosted at the **University of York** in **June 2026**. The week of Cereals (10th-11th June) will be avoided.

The meeting ended at approximately 11:15.

Action Points

	Action	Owner(s)
1	Review the new website (oregin.org.uk) and send feedback to Zhesi He.	All Attendees
2	Coordinate an official website launch date and social media plan with Nigel Padbury.	Zhesi He
3	Confirm the LLS field trial assessment date with the group as soon as possible.	Coretta Kloeppeel, Panida Wadsworth
4	Lead site selection coordination for the hybrid vigour field trial with Coretta, Ian, and others.	Pete Berry
5	Circulate the decision tree diagram for the Novel Technologies Fund to the group to those requesting it.	Ian Bancroft
6	Request a brief update on the climate modelling work from Tom Crocker and Steve Penfield.	Ian Bancroft
7	Coordinate a planning meeting for the sunflower field trial logistics.	Coretta Kloeppeel, Pete Berry, Graham Teakle, Andrea Harper
8	Follow up with Steve Penfield and Jo Hepworth on the UK-BRC meeting plans for 2026.	Ian Bancroft
9	Send a Doodle poll for the June 2026 in-person meeting, avoiding the Cereals week.	Zhesi He