

Meeting Minutes: OREGIN Management Meeting June 2026

Date: Wednesday 17th June 2026

Location: Room M052, Department of Biology, University of York

Chair: Andrea Harper

1. Minutes and Action Points from Previous Meeting

The minutes from the previous meeting were approved without amendments.

Review of Previous Action Points

Action	Owner(s)	Status
1. Review the new website (oregin.org.uk) and send feedback to Zhesi He	All Attendees	✓ Complete – Feedback received and improvements made
2. Coordinate an official website launch date and social media plan with Nigel Padbury	Zhesi He	✓ Complete – Launch planned for Stakeholder Forum
3. Confirm the LLS field trial assessment date with the group as soon as possible	Coretta Kloeppel, Panida Hall	✓ Complete – Assessment conducted in April
4. Lead site selection coordination for the hybrid vigour field trial with Coretta, Ian, and others	Pete Berry	✓ Complete – Sites identified; field trial planned
5. Circulate the decision tree diagram for the Novel Technologies Fund to the group to those requesting it	Ian Bancroft	✓ Complete – Circulated as part of proposal documents
6. Request a brief update on the climate modelling work from Tom Crocker and Steve Penfield	Ian Bancroft	✓ Complete – Report available on OREGIN website

Action	Owner(s)	Status
7. Coordinate a planning meeting for the sunflower field trial logistics	Coretta Kloeppel, Pete Berry, Graham Teakle, Andrea Harper	✓ Complete – Logistics progressing
8. Follow up with Steve Penfield and Jo Hepworth on the UK-BRC meeting plans for 2026	Ian Bancroft	✓ Complete – Scheduled for January 2027
9. Send a Doodle poll for the June 2026 in-person meeting, avoiding the Cereals week	Zhesi He	✓ Complete – Meeting convened as scheduled

2. Project Management and Administrative Matters

- **Contract amendment:** Ian Bancroft reported that an amendment is needed regarding IP management of gene-edited material. Discussions are ongoing but do not affect validation work currently underway.
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3. Updates on Work Programme

ii) Oilseed Rape Network and Traits

1. Provision of physical resources to underpin OSR breeding (Graham Teakle, Yongju Huang)

Presented by Yongju Huang; Ian Bancroft added Graham Teakle's update

- Ian Bancroft noted on Graham Teakle's behalf that a couple of Defra line requests have been filled, and lines low on seed are being multiplied.
- New *L. maculans* isolates collected from Magic Field; inoculation completed, results pending next week.
- One *L. maculans* isolate sent to Japan for collaborative research; a publication is in preparation.
- No new *L. biglobosa* isolates obtained this year.
- The *L. biglobosa* isolate previously sent to Japan for collaborative research produced a collaborative paper submitted to *Archives of Virology*.

- Received requests for isolates from ADAS for variety testing, also requests from a UH training course.
- New PhD student (from December 2025) researching mycovirus for disease control.
- A new Master's by Research student started in May 2026 working on light leaf spot.

2. Provision of information resources (Yongju Huang, Zhesi He)

Presented by Zhesi He

- **Website Update:** The new OREGIN website is live and functional. The climate report is also available.
- **Transition from Hertfordshire Website:** Ian Bancroft suggested installing a banner redirecting from the old Hertfordshire site to the new site. Yongju Huang agreed to coordinate this and also check the Defra website/GIN portal.
- **Action:** Yongju Huang to install redirect banner on Hertfordshire website.

3. Mutagenesis approach to improving LLS resistance (Peter Bancroft, Todor Chiplakov, Coretta Kloeppel, Panida Hall, Yongju Huang, Chinthani Karandeni-Dewage, Tom Wood, Jon West)

Presented by Coretta Kloeppel and Panida Hall; Ian Bancroft added context

- Field trial assessment conducted in Aberdeen in early April. Good disease pressure observed (one plot ~50% infection; many 10-20%).
- Low levels of resistance were expected because the *Imola* background and pathogen populations have already broken *Imola* resistance – Ian Bancroft noted that any clean plants are therefore genuinely interesting discoveries.
- 230 clean plants were brought back; 197 potted and bagged for selfing. Variable seed set observed, potentially due to a heatwave in glasshouses.
- Sufficient seed is expected from most lines for nursery trials next season.
- **Discussion:** Ian Bancroft advised that nursery plots should likely be single-row per plant, as many will show susceptibility next year. This approach is consistent with industry good practice.

4. Hybrid vigour for improving pest tolerance and rooting (Peter Bancroft, Coretta Kloeppel, Panida Hall, Ben Hague)

Presented by Peter Bancroft

- **Progress to Date:**
 - Two CMS varieties crossed with 141 male parents; 131 successfully crossed with both.
 - Heterosis assessed for above-ground and below-ground traits.

- **Key finding:** No correlation found between above-ground and below-ground heterosis – this generated significant discussion as it challenges conventional assumptions.
- RNA sequence data has been received and analysed by Zhesi He.
- **Findings:**
 - PCA analysis clearly separates winter and spring types.
 - Association analyses (transcriptomics) have identified significant genomic regions; multiple loci expected as heterosis is a complex trait.
- **Next Steps:** Field trials will be established to further investigate root traits and heterosis (ADAS leading below-ground assessments; Ben Hague coordinating field trials).
- **Discussion:** Ian Bancroft noted the practical implications – growers cannot assume above-ground biomass reflects root development. Ben Hague added that field trials (early winter/late autumn) will help answer this.

5. Glucosinolate-based pest deterrence

Presented by Madeleine Berger

- No update; activities are focused on radiation mutagenesis. Lines will be assessed for mutations once radiation data is available.

iii) Novel Technologies in Oilseed Rape

1. Advancing wild relative introgression in WOSR

Presented by Ian Bancroft and Zhesi He

- No new update; progress remains as reported at the last meeting.

2. Advancing radiation mutagenesis in WOSR (Peter Bancroft, Madeleine Berger, Todor Chiplakov, Zhesi He)

Presented by Todor Chiplakov

- Two spring-type panels (*Mazowiecki* and *Duplo*) are being created.
- ~1,800 samples sent for sequencing.
- Contamination (RNA) issues resolved with an additional treatment step; method optimized.
- M2 seed nearing completion.
- Data analysis expected to be completed in September 2026.
- Throughput increased significantly (168 samples/week per person).

3. Parameterization of Genome Editing in WOSR (Steve Penfield, Tom Lawrenson, Peter Bancroft)

Presented by Steve Penfield

- Protocol for testing and optimising guides completed.
- Four guide pairs targeting eight genes selected.
- Two constructs assembled; transformation underway (materials in tissue culture).
- Results expected by the next meeting.

4. Application of machine learning to variant detection and association analysis (Zhesi He)

Presented by Zhesi He

- **Key Achievements:**
 - Fully developed and modernised the associative transcriptomics pipeline.
 - Switched to the Global AC pan-genome for better gene coverage.
 - Methods: BWA-MEM for mapping; BCFtools for SNP calling (resolved memory issues); GAPIT3 integrated with machine learning (Random Forest, LASSO, Elastic Net, XGBoost).
- **Evaluation Results:**
 - New methods confirmed known traits (glucosinolates, erucic acid, tocopherol ratio).
 - **Recommended pipeline:** BLINK as primary; FarmCPU and MLM as secondary; ML consensus as independent check.
 - The old GAPIT will be retired.
- **Feedback:** Andrea Harper suggested pulling BLUPs from the different models and comparing them to trait data to assess predictive performance – Zhesi He noted this could be investigated.
- **Current Work:** Pipeline applied to hybrid vigour RNAseq dataset; analysis ongoing.

5. Responsive deployment of novel technologies in WOSR (Ian Bancroft)

Presented by Ian Bancroft

- Open invitations for proposals (primarily gene editing, but also radiation panels and computational methods).
- **IP Arrangements:**
 - All materials are owned by Defra.
 - Proposing organisations should consider IP implications carefully – Ian Bancroft advised: "be canny about what you bid for."
 - Contracts with Defra are being negotiated to clarify IP management.
 - Helen and Ian must be consulted on deployment decisions.

- The outputs are primarily knowledge; commercialisation requires separate discussion with Defra.
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iv) Alternative Oilseed Crops

1. Climate modelling to identify changing growing environments (Tom Crocker, Andrew Cottrell, Steve Penfield)

Presented by Steve Penfield

- **Trial Design:** Comparing 20 years of recommended list varieties to test whether breeding has actually delivered genetic gain.
- **Key Question:** Candidate varieties perform better than controls in trials, but UK winter OSR yields have not increased since ~2011. Possible explanations: seed quality, disease adaptation, abiotic stress adaptation.
- **Trial Established:** Drone images shown; first year data being collected.
- **Discussion – Key Points:**
 - Nigel Padbury noted that 90% of new candidates drop back to the mean; a few (e.g., Apex, Royal, Cash) set new standards. This may be an artefact of the testing system.
 - Seed quality hypothesis: Seed companies invest heavily in seed quality for candidates; controls may use older/less optimal seed lots.
 - Disease evolution and maintenance of seed lots affect variety performance over time.
 - Representativeness of OSR trials vs. commercial farming: Steve (speaker) noted differences in sowing dates, fertiliser application (P & K dropped commercially), and other variables.
 - Yongju Huang asked if other traits (e.g., disease) are being assessed – Steve Penfield confirmed not at scale in this trial but noted Yongju's disease data could be integrated.
 - Ian Bancroft raised concerns about seed provenance – legacy varieties should come from breeders' reference collections to avoid genetic drift.
 - Pete Berry asked whether the RL system can identify climate-resilient varieties if imperfect trials are discontinued – debate followed about retaining sites to capture challenging conditions.

2. Evaluation of hemp as an alternative UK crop (Ian Graham, Panida Hall)

Presented by Panida Hall

- Hemp trial drilled on 27 May 2026; irrigated due to dry spell.
- Two varieties: *Earlina 8FC* and *CNAP1HOH* (four plots).

- Emergence observed for Earlina 8 FC on 9 June; CNAP1HOH not visible. Likely emergence after rainfall, unless there is an issue with germination of CNAP1HOH.
- 54.6 mm rainfall since drilling.
- Industrial hemp licence delayed the drilling date and second .

3. Evaluation of sunflower as an alternative UK crop (Florentina Petrescu, Coretta Kloeppel, Pete Berry, Yongju Huang, John Clarkson, Lauren Chappell)

- **Progress:**
 - Seed multiplied and in transit to the UK.
 - Farmer identified near Cambridge to host the trial (Eurofins to drill; ADAS to do assessments).
 - Planning meeting to be convened.
 - **Discussion:** A grower TBC for community engagement activities.
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4. Knowledge Exchange and Dissemination

i) Identification of further research and collaboration opportunities

- **Cabbage:** Nigel Padbury noted some activities they are doing to find linkage with cabbage.
- **MAGIC Population Sequencing:** Steve Penfield plans to sequence the recombinant inbred lines from the Magic population (~800 lines) for GWAS; all are invited to participate. Yongju Huang expressed interest in collaborating for disease phenotyping.
- **Yongju's Disease Data Integration:** Steve Penfield's climate trial and Yongju's disease scoring could be integrated, as they are using similar variety lists. Yongju confirmed this opportunity.
- **Glyphosate Review:** Nigel Padbury raised concerns about glyphosate renewal (Dec 2026) and potential loss of desiccant options. He suggested urgent research on alternatives for spring crops, including sunflowers.
- **Spring Crop Establishment:** It is noted growers are increasingly worried about spring drought conditions, impacting establishment and nitrogen use.

ii) Dissemination Plan

1. **Organised meetings (academic focus) – UKBRC (Steve Penfield)**
 - UKBRC meeting scheduled for **20 January 2027** at John Innes Centre.
 - OREGIN management meeting will follow on **21 January 2027**.
2. **Organised meetings (stakeholder focus) – OREGIN Stakeholder Forum (Panida Hall, Coretta Kloeppel, Nigel Padbury)**

- Format: Stakeholder forum in the morning, management meeting in the afternoon (hybrid format).
 - Focus to be decided; stakeholders will help determine the focus.
 - **Action:** Coretta and Panida to firm up ideas for the stakeholder forum.
3. **Training for academic and stakeholder audiences (Andrea Harper)**
- First hybrid breeding workshop was a resounding success; photos shown.
 - Next workshop on disease scoring (led by Yongju Huang) to be planned.
4. **Publication and availability of data (all)**
- Please send publications to Andrea Harper, Zhesi He and Ian Bancroft.
5. **Community engagement activities in support of hemp cultivation (Ian Graham, Panida Hall)**
- Possibility of an open day in July or September (avoiding August).
 - Alternative: Visit a successful hemp grower in East Yorkshire (fibre-focused) if the trial does not develop well.
 - Action: Andrea Harper to set up meeting in July (week commencing 13 July) to review trial progress and plan engagement.
6. **Community engagement activities in support of sunflower cultivation (Florentina Petrescu, Pete Berry, a grower TBC)**
- Planning to be integrated with the next trial planning meeting.
7. **Additional SME engagement and dissemination to non-academic audiences (all)**
- Nigel Padbury offered to share training course details via the AICC and BSPB to reach trade groups.
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5. Updates on Social Value

Presented by Andrea Harper

- **OREGIN Training Courses:** First workshop completed successfully. Next training on disease scoring proposed.
- **Social Value Reporting:**
 - Andrea Harper will circulate a form for partners to input social value indicators.

- Ian Bancroft emphasised the importance of reporting maximum value – being assessed on this will be critical for the second phase of the programme.
 - **Early Career Researcher Events:**
 - Data collection on ECR participation at UKBRC requested (Steve Penfield to coordinate via registration forms).
 - It was noted that around 20% of attendees at the last OREGIN stakeholder event were PhD students or undergraduates; it was suggested this be raised at a future stakeholder-related meeting.
 - **Studentships/Placements:**
 - Yongju Huang has students working on relevant projects; please send any further updates to Andrea.
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6. Any Other Business

- **Glyphosate Review:** Nigel Padbury raised concerns about potential loss of glyphosate as a desiccant (renewal due Dec 2026). The EU has already excluded pre-harvest desiccant use in its approval. If the UK follows the EU under the SPS agreement, it would significantly impact spring crops including sunflowers. He suggested urgent research into alternatives.
 - **Spring Crop Establishment:** Nigel noted that growers are concerned about dry spring periods affecting crop establishment and nitrogen use. This is a current agronomic issue.
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7. Date for Next Management Committee Meeting

- Proposed for **September/October 2026** (by Zoom).
 - **Dates to avoid:**
 - 15 September 2026 (Steve Penfield's workshop)
 - 29 September 2026
 - 8 October 2026 (BCPC meeting; AHDB recommendation meeting)
 - 20-21 January 2027 (UKBRC and OREGIN meetings)
 - Zhesi He will send a Doodle poll.
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8. Summary of New Actions

Action	Owner(s)
Install banner on Hertfordshire website redirecting to new OREGIN website; check Defra linking GIN portal	Yongju Huang, Zhesi He
Plan and coordinate sunflower field trial logistics meeting	Andrea Harper (to coordinate)
Organise stakeholder forum – agree focus	Coretta Kloeppel, Panida Hall
Plan open day for hemp (to be discussed in July), subject to trial emergence and hemp grower hosting	Panida Hall
Set up meeting (week commencing 13 July) to review hemp trial progress	Andrea Harper
Circulate social value reporting form to all partners	Andrea Harper
Send Doodle poll for September/October Zoom meeting	Zhesi He
Coordinate data collection on ECR participation at UKBRC	Steve Penfield

Meeting ended at 13:20 (approx.)

Next Meeting: September/October 2026 (via Zoom)