



OREGIN – pathogen collection and disease resistance

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OREGIN Stakeholder Meeting, Rothamsted, Harpenden

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WP 2.1 OREGIN pathogen collection - UH

- **Phoma stem canker pathogens**

- *L. maculans* Isolates
 - 24 international isolates
 - 80 UK isolates
 - 13 isolates obtained from OREGIN 2020/2021 field experiment
- *L. biglobosa* Isolates
 - 6 international isolates
 - 11 UK isolates

WP2.1. OREGIN pathogen collection-UH

Light leaf spot pathogen

Pyrenopeziza brassicae isolates

- 124 international isolates
- 140 UK isolates
- 10 isolates obtained from 2020/2021 OREGIN field experiment

WP4.1: OREGIN field Expt phenotype for disease resistance - UH, RRes & NIAB

Phoma stem canker



Light leaf spot



WP4.1: OREGIN field expt phenotype for disease resistance - UH, RRes & NIAB

**OREGIN 2020/2021 field expt (40 lines) at
Withern in Lincolnshire,
Trial established 5 September 2020**

Light leaf spot and phoma leaf spot assessment, 7 April 2021

Light leaf spot and phoma stem canker assessment, 5 July 2021

7 April 2021



Severe stem canker, April 2021



Severe stem canker, July 2021



Purple Top

Phoma stem canker



Phoma stem canker



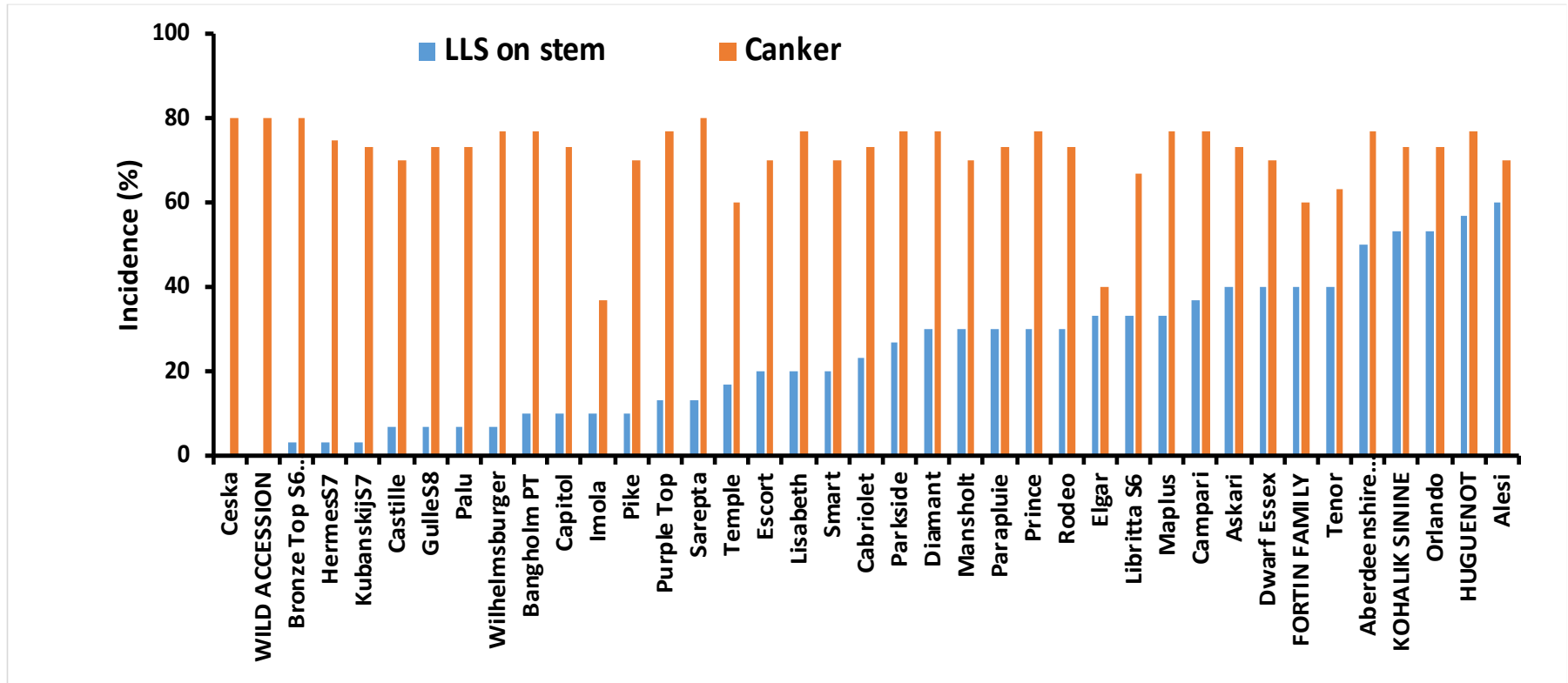
Phoma stem canker



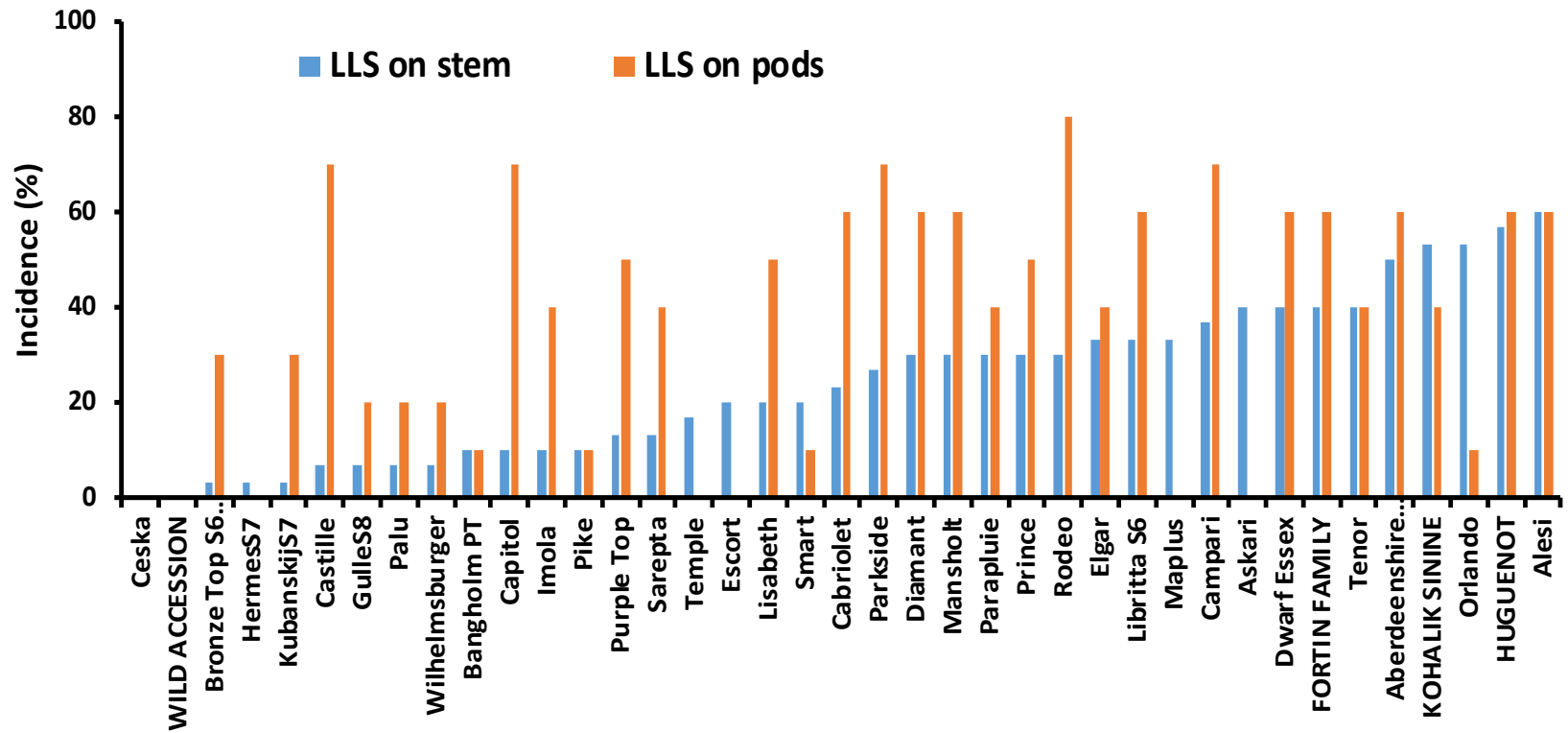
Light leaf spot



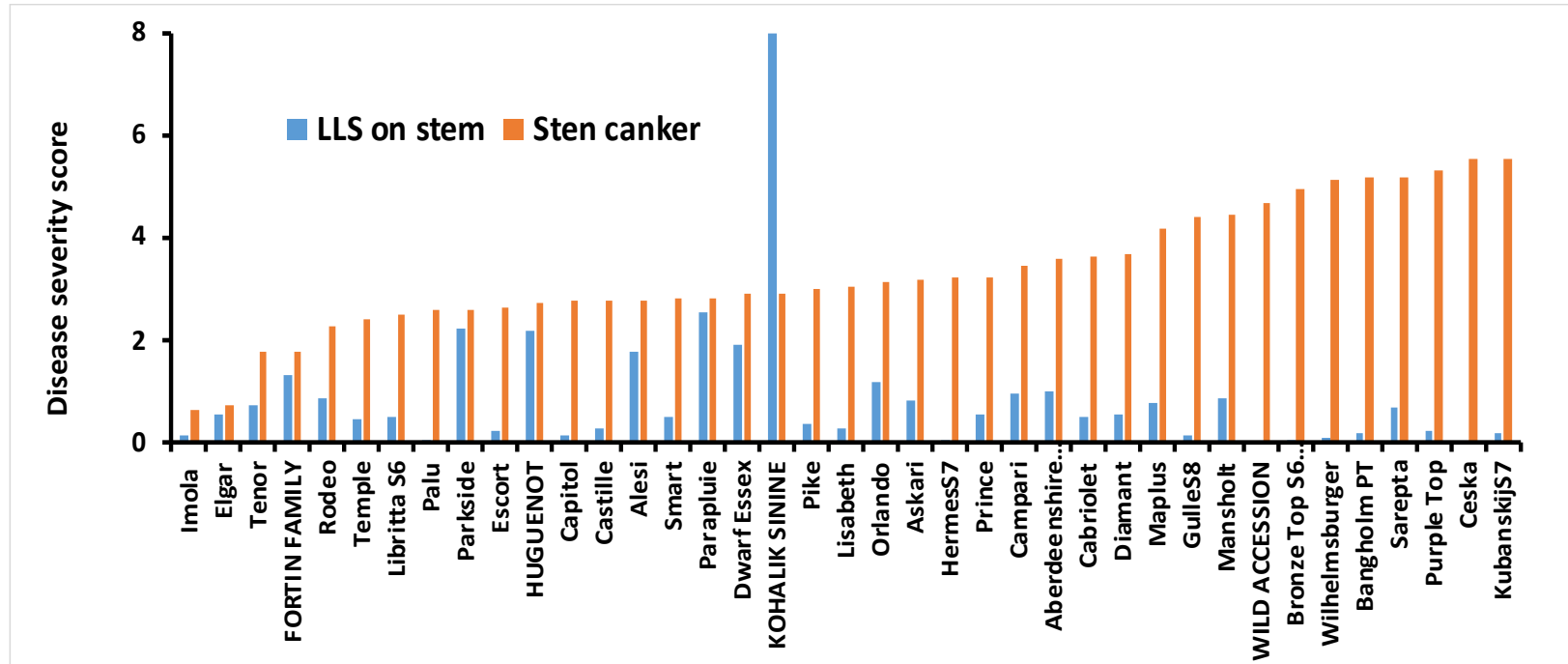
Phoma stem canker & light leaf spot incidence on stems of different cultivars/lines, 5 July 2021



Light leaf spot incidence on stems and pods of different cultivars/lines, 5 July 2021



Phoma stem canker & light leaf spot severity scores on different cultivars/lines, 5 July 2021



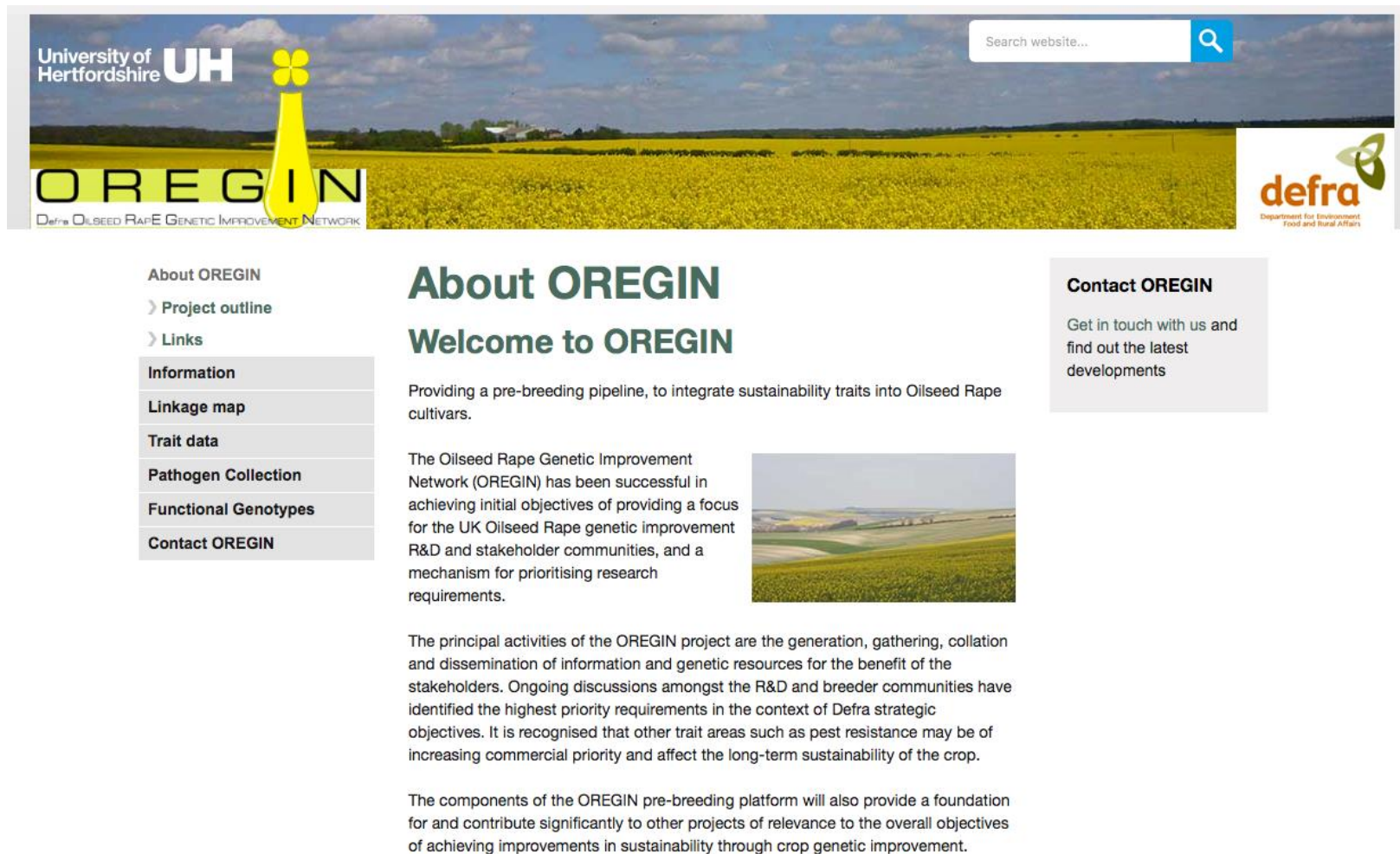
Information on differences in resistance to pathogens between genotypes in OREGIN diversity set can be used to improve breeding for resistance

- *Differences in resistance to phoma pathogens*
- *Differences in resistance to light leaf spot pathogen*
- *Novel sources of resistance for breeders*
- *May be interactions between pathogens*

Jon West
Yongju Huang
Tom Wood
Huw Davis
Jacob Locke-Gotel



WP6.1 OREGIN website at UH



University of Hertfordshire **UH**

Search website...

OREGIN
Defra OILSEED RAPE GENETIC IMPROVEMENT NETWORK

defra
Department for Environment, Food and Rural Affairs

About OREGIN

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Information

- Linkage map
- Trait data
- Pathogen Collection
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About OREGIN

Welcome to OREGIN

Providing a pre-breeding pipeline, to integrate sustainability traits into Oilseed Rape cultivars.

The Oilseed Rape Genetic Improvement Network (OREGIN) has been successful in achieving initial objectives of providing a focus for the UK Oilseed Rape genetic improvement R&D and stakeholder communities, and a mechanism for prioritising research requirements.

The principal activities of the OREGIN project are the generation, gathering, collation and dissemination of information and genetic resources for the benefit of the stakeholders. Ongoing discussions amongst the R&D and breeder communities have identified the highest priority requirements in the context of Defra strategic objectives. It is recognised that other trait areas such as pest resistance may be of increasing commercial priority and affect the long-term sustainability of the crop.

The components of the OREGIN pre-breeding platform will also provide a foundation for and contribute significantly to other projects of relevance to the overall objectives of achieving improvements in sustainability through crop genetic improvement.

Contact OREGIN

Get in touch with us and find out the latest developments

The website is maintained and regularly updated at UH

A vibrant field of yellow flowers, likely rapeseed, stretches across the foreground and middle ground. In the background, a line of green trees is visible against a clear blue sky. The text "Thank you" is centered over the field.

Thank you