Oats 2020
Conference
23-25 November 2015

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Crop Physiology and Quality

**IBERS**
Athrofa y Gwyddorau Biolegol, Amgylcheddol a Gwledig
Institute of Biological, Environmental and Rural Sciences

**Introduction and welcome**
13.30 – 13.40: Monday
NATIONAL INSTITUTES OF BIOSCIENCES

IBERS Bioleg sy'n cyflawni Biology that delivers

Building the bioeconomy
The breeding of novel types of oat with improved grain composition ...... to the benefit of the UK oat crop as a healthy human food and as a high value livestock feed.
Innovations in oats at Aberystwyth

- Since 2001, >30 oat varieties included on the UK National and Recommended Lists.
- Mascani currently grown on the vast majority of the winter oat area.
- 67% of the oats grown in the UK were bred in Aberystwyth.

- Maldwyn 1st spring oat
- S172 1st semi-dwarf oat
- S81 1st variety released
- Cross no 4 in 1920 (Grey Winter x Kyko)

- Buffalo 1st dwarf oat
- Gerald
- Rhiannon 1st naked oat
- Peniarth
- Mascani currently grown on the vast majority of the winter oat area.
Innovations in oats

Understanding genomes

Breeding methodologies

Plant Breeding

Improved varieties

Glamis (NL)
Selwyn (NL)
Elgar (NL)
Balado (RL)
Beacon (RL)

Phenotyping

Genomic sequence and zipper techniques are underpinning gene discovery and marker development.

Development of QTL-NIL lines for agronomically relevant traits e.g. flowering time BT13

Buffalo

Tardis

Tardis + Buffalo

QTL on LG13

Bmag08083 (0.3)
S51264R9 (62.7)
WMS271 (63.8)
TR0416 (65.5)
MAMA04 (75.5)
S7600R1 (179.6)
MAMA06 (81.9)
HvXan.17 (83.9)
MGB15 (117.3)
AS2 (121.4)
TR472.3 (122.9)
S13197R5 (128.0)
S10806R5 (131.1)
AS4 (133.4)