

The development of the TN doubled haploid population (TNDH) as a reference mapping population for the UK

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Origin of TNDH population

Doubled Haploid population from:

Tapidor (European Winter OSR) x Ningyou 7 (Chinese semi-winter OSR)

188 individuals



Accessing TNDH population

Details of development:

Qiu, D. et al 2006. A comparative linkage map of oilseed rape and its use for QTL analysis of seed oil and erucic acid content. Theor. Appl. Genet. 114: 67-80.

Access to genotyping and mapping files (latest version):

http://www.jic.bbsrc.ac.uk/staff/ian-bancroft/tapidor_x.htm

Seed available from Graham Teakle - Warwick-HRI (Oregon)

Expanding TNDH as a resource

Integration to *B. rapa* genome (A1...A10)

AG chinese cabbage F2 population (94 lines)
(A9709 x G004)

46 common markers
(43 SSR &
3 SNP/Indel markers)

Further development of map:

In UK: Ian Bancroft
John Innes Centre
Norwich

In China: Jinling Meng
Huazhong Agricultural University,
Wuhan

Both groups addressing:

removing AFLP
adding SSR, SNP/indel & gene specific markers

sharing new markers
Jointly remapping . . .

to produce new consensus map for web site

Interim map from JIC without AFLP markers

Utilisation of TNDH map:

Extensive use of population in UK, China, Germany:

Architecture

Oil & fatty acid studies

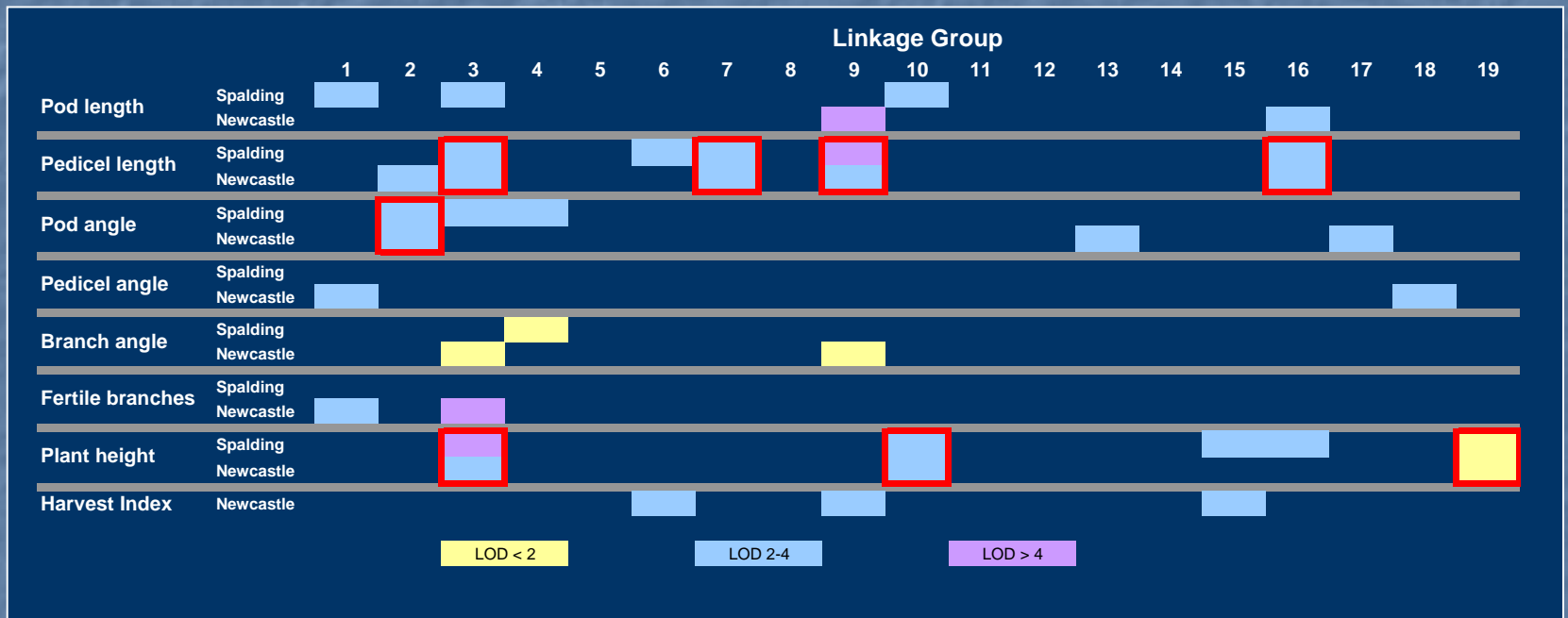
Nitrogen use efficiency studies

potential for other work including ... pathology, FT *etc.*

Many QTL already identified

Further development through fine mapping & candidate gene analysis

Example of QTL for architectural traits



Use of TNDH in UK

Main problems:

Winter hardiness

Early flowering (yet some/all need vernalising)

Stem canker . . .

&

Size of population . . .

**Best adapted 94 lines chosen
for further study**

**Overall allelic variation remains
comparable with that of the full
population**

