Intermediate report ERA-168
UMRLEG- INRA Dijon - Partner 10

INRA-AgroSup Dijon Joint Research Unit on Genetics and Ecophysiology of Grain Legumes

Participants:

Dr Gérard DUC	Scientist
Mr Pascal MARGET	Engineer-Faba bean breeder
Mr Jean-Bernard MAGNIN-ROBERT	Engineer assistant – Germplasm manager
Mr Damien OLLIVIER	Technician

http://www2.dijon.inra.fr/urleg/

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Context :

In the new context ofagriculture eco-aware with lower pesticide input, the objective of INRA proposal is to identify a genetic determinism for lower Bruchus susceptibility in Vicia faba collections.

Faba bean accessions from :
(1) The collection of INRA Dijon (collection recognised by CGIAR- TRUST)
(2)accessions collected by SEELEGUME partners
will be assessed for bruchus tolerance in field conditions.

Bruchus rufimanus Boh.

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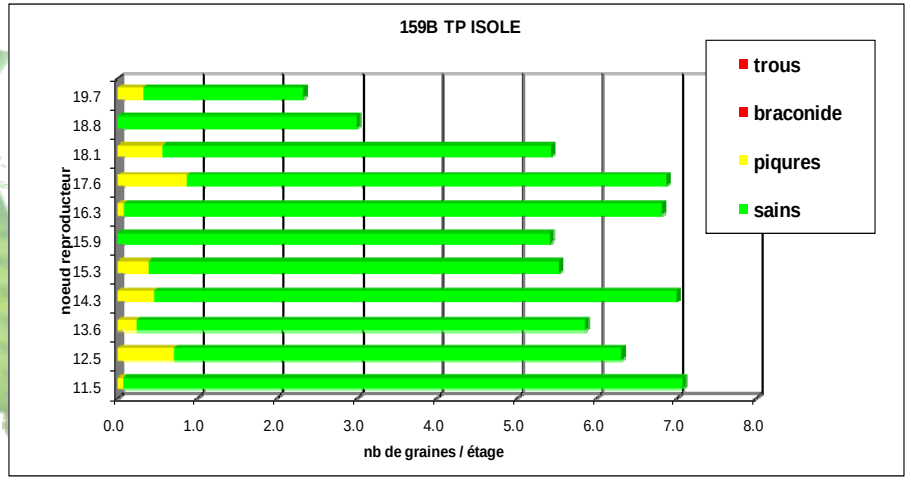
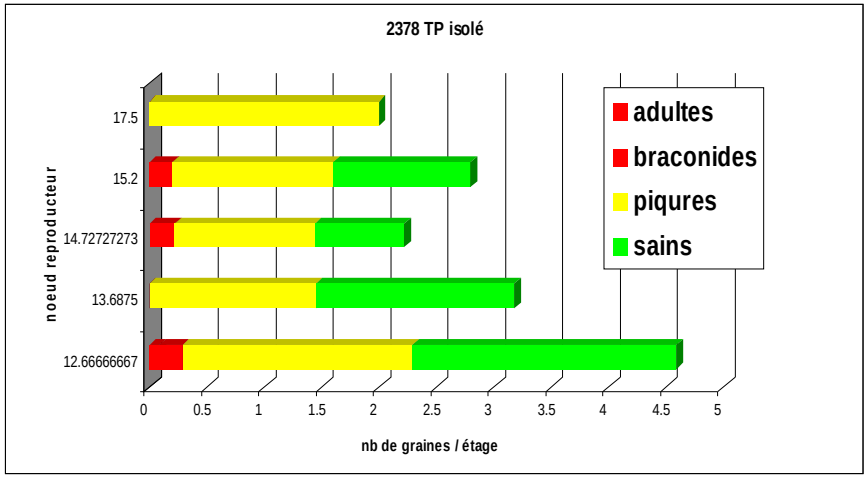
Preliminary results

Empirical and preliminary observations have identified differences for bruchid suceptibility in faba bean germplasm which need to be confirmed and analysed.

Damage profile / reproductive level on 20 plants by isolated plot (marget et al, unpublished)



Candidate with very low level of total damages



Candidate with more than 50% of damages but with a great larvae mortality level

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Our proposal:

1) TO COLLECT SAMPLES OF SEEDS FROM YOUR GERMPLAM WICH PRESENTS LOW BRUCHUS DAMAGES WITHOUT INSECTICIDE
or
THAT YOU MAY CONSIDER TO BE OF INTEREST FOR THIS TRAIT
(seed size, color size, geographical origine , ….)

2) TO ASSESS THIS COMMON GERMPLASM **FOR BRUCHUS TOLERANCE**
-IN OPEN FIELD CONDITIONS
-WITHOUT INSECTICIDE APPLICATION
-IN A SPECIFIC DEVICE IN DIJON AND IN ANOTHER PARTNER SITE

IN ORDER TO CROSS CULTIVARS ORIGIN x BRUCHUS ORIGIN

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Field assessment, specific devices 2009 and 2010:

30 cultivars

Plot size : 2 lines of 30 plants (2m x 0.50)

180 SEEDS / SITE

R1

R2

R3

Proposition for traits scored

Bflo, Stage YP2 1st pod, Eflo

Pod size, Plant height, nb of stems/plants, Flower color
TSW, hilum color.

Mechanical harvesting and damage recording on 2 samples of 100 seeds/plot

Damages recording :

% seeds with hole with or without adults (a)
% seeds withs superficial damages -bites (b)

} Total damages (a+b)
&
% larvae mortality
(b / a+b)*100

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TIMETABLE PROPOSITION :

November 2011 : e-mailing to partners for interest

December 2011 : definition of common germplasm (no more than 30-40 cultivars) and who is ready to perform the second experiment ?

End of January 2012: receipt of the seed samples in Dijon and ????

End of February 2012 : sowing

Common cultivar used as control will be provided by UMRLEG

Common germplasm will be share and assess under restricted conditions of uses to be precise in a Material Transfert Agreement.

THANK YOU FOR YOUR ATTENTION

http://www2.dijon.inra.fr/urleg/