

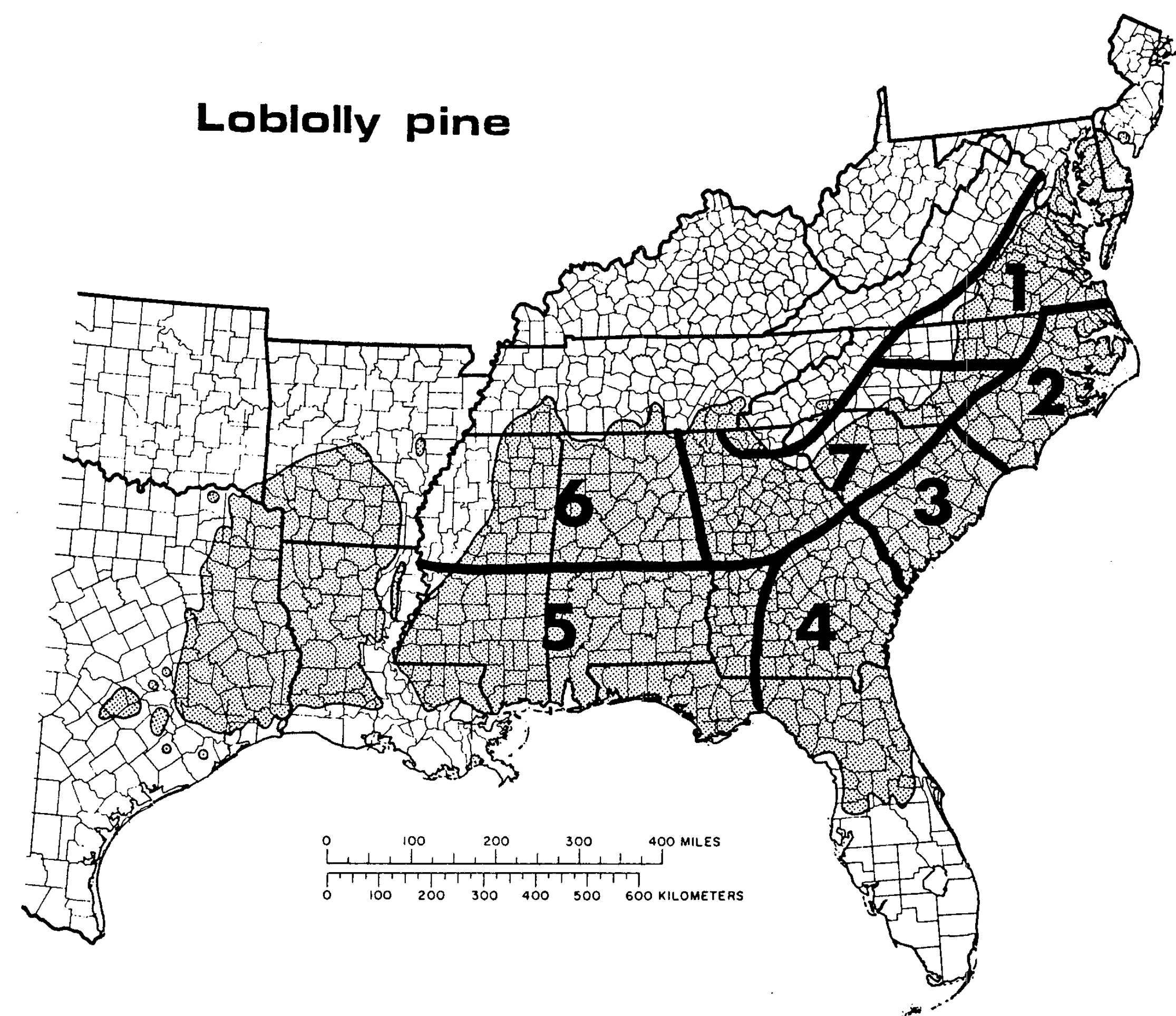
Regional Variation in Fusiform Rust Disease in Loblolly Pine

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Objectives

- ❖ Study stability of rust resistance across regions
- ❖ Examine regional patterns of resistance



Regional Map

Materials

20 families (140 in total) were selected from each of 7 regions and tested across all regions.

Field design:

3 sites per region
24 replications per site using Randomized Complete Blocks., single tree plots.

Data were collected after 8 years in the field.

Methods

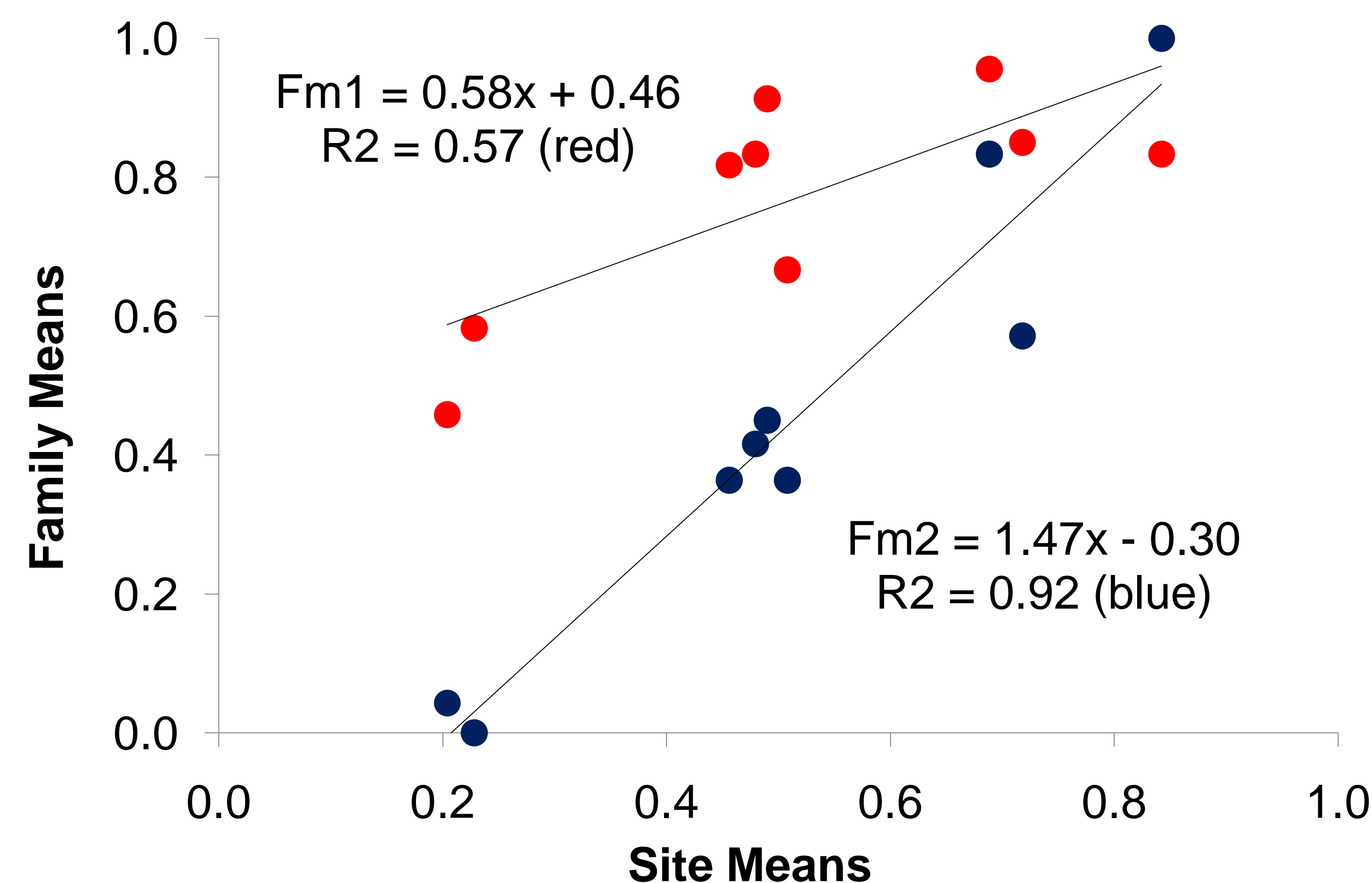
Stability of families across sites for rust disease are determined by the regression method. A slope of $b=1$ suggests families with average and $b=0$ suggests stable.

Results

The preliminary results show a wide range of stability from $b= 0.4$ to 1.65 with R^2 values ranging from 0.57 to 0.98 .

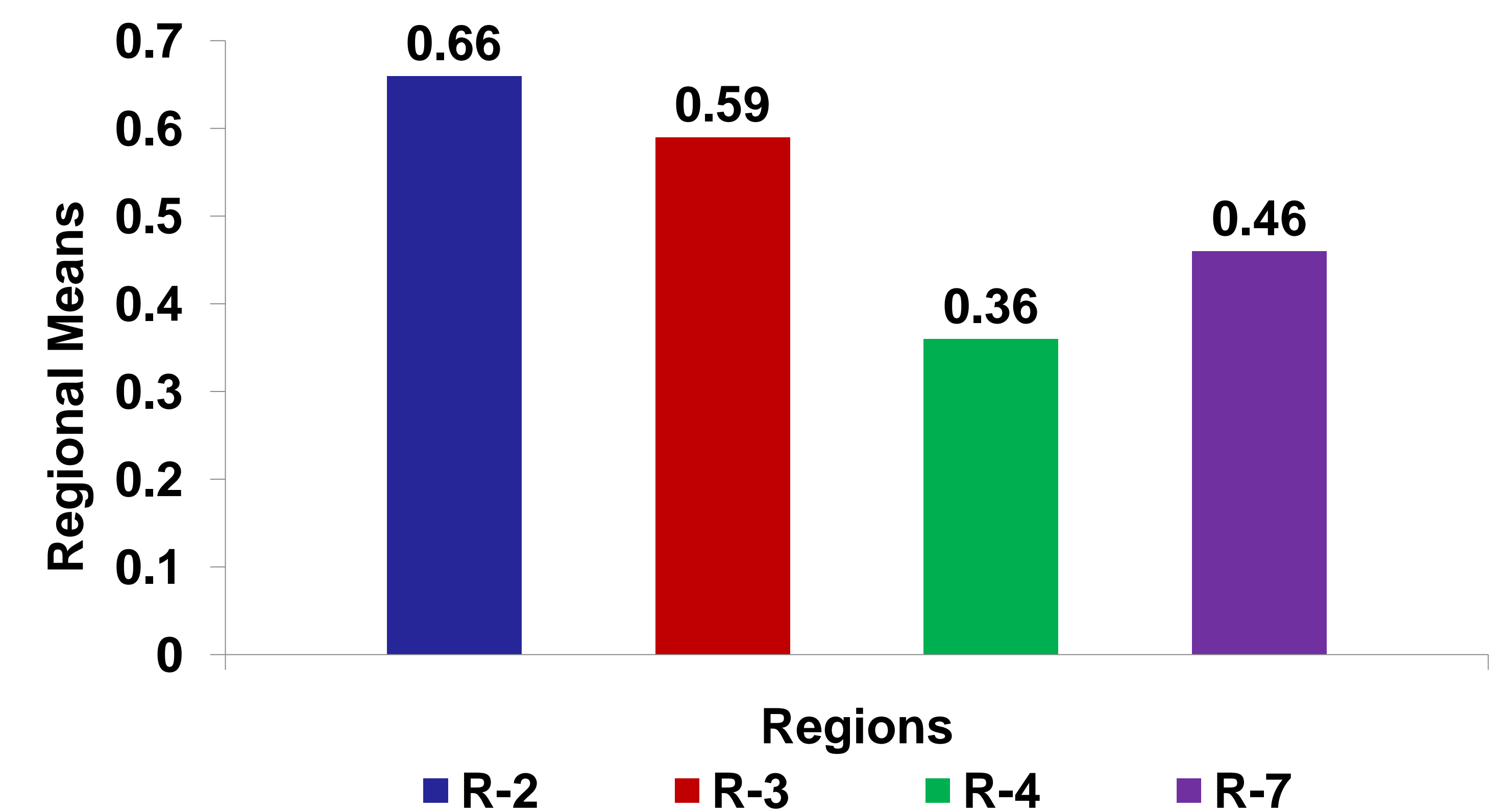
In the plot below, family 1 exemplifies stable rust disease resistance ($b= 0.58$) while family 2 exemplifies unstable rust disease resistance ($b= 1.47$).

Family 1 shows low rust disease resistance while family 2 shows moderate rust disease resistance.



Results

Significant differences were found among regions (see chart below).



Conclusions

The wide range in results for family and site mean interactions and regional means suggest the possibility for trends across the regions for rust disease resistance.

Families with greater susceptibility to rust disease tend to show greater stability.

Families with lower susceptibility to rust disease tend to show lower stability and possibly have greater regional variations.