

# Use of foreign data using Mix99

## Methodology

Roel Veerkamp

ICBF Meeting with Beef Breed  
Associations

9<sup>th</sup> July 2008



ANIMAL SCIENCES GROUP  
WAGENINGEN UR

# Introduction new software: Mix99

- Dairy and beef calving traits
  - Animal model
  - Maternal effects for calving ease ,gestation length and stillbirth
  - Correlations between traits
  
- Beef production traits
  - Animal model
  - 15 traits
  - Maternal effect for weaning weight in one model



# Introduction new software: Mix99

- Animal model with direct and maternal effect
- Combined analysis: Little 'hand work'
- Reliabilities are calculated

- Time saving:

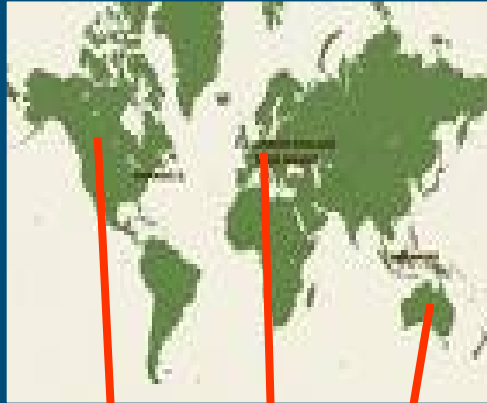
|            |             |        |       |         |        |
|------------|-------------|--------|-------|---------|--------|
| ● Calving: | EBVs        | rel    | Beef: | EBVs    | rel    |
| • Asreml:  | 4 to 5 days | -      |       | 2 days  | 3 days |
| • Mix99 :  | 2 hours     | 25 min |       | 5 hours | 1 hour |

# Today

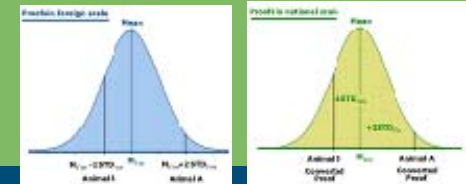
- Long standing issue: include foreign EBV in Irish evaluations to utilise information for imported cattle
  - Reliability
  - Ranking imported bulls NOT as is no information available
  - Making use of the French recording data
- Mix99 provides a new option to do this.



# Options to use foreign EBVS



**1. Ranking method: smaller breeds SA, PT, AU ✓**



**2. Conversion formulae: French CH and LM ✓**

Converting French proofs into Irish scale Using multiple linear regression  $PD(IRE) = a + b1BV1(FRA) + b2BV2(FRA) + \dots + bnBVn(FRA)$

**3. Integration directly in Evaluation: Currently under test. Advantage: no blending**

Using MIX99 (Lidauer et al. 2006)



**4. INTERBEEF: Involved in initial pilot study with France, UK using performance data for Limousine & Charolais**



# Advantages new methode

- Part of routine evaluation
- All related animals get credited with the information
- Right weighting of foreign EBV versus Irish data
- Right weighting of reliable French proofs versus less reliable French proofs
- Reminder:
  - Does not replace Irish data, only predictor
  - Limitation to number of traits and countries



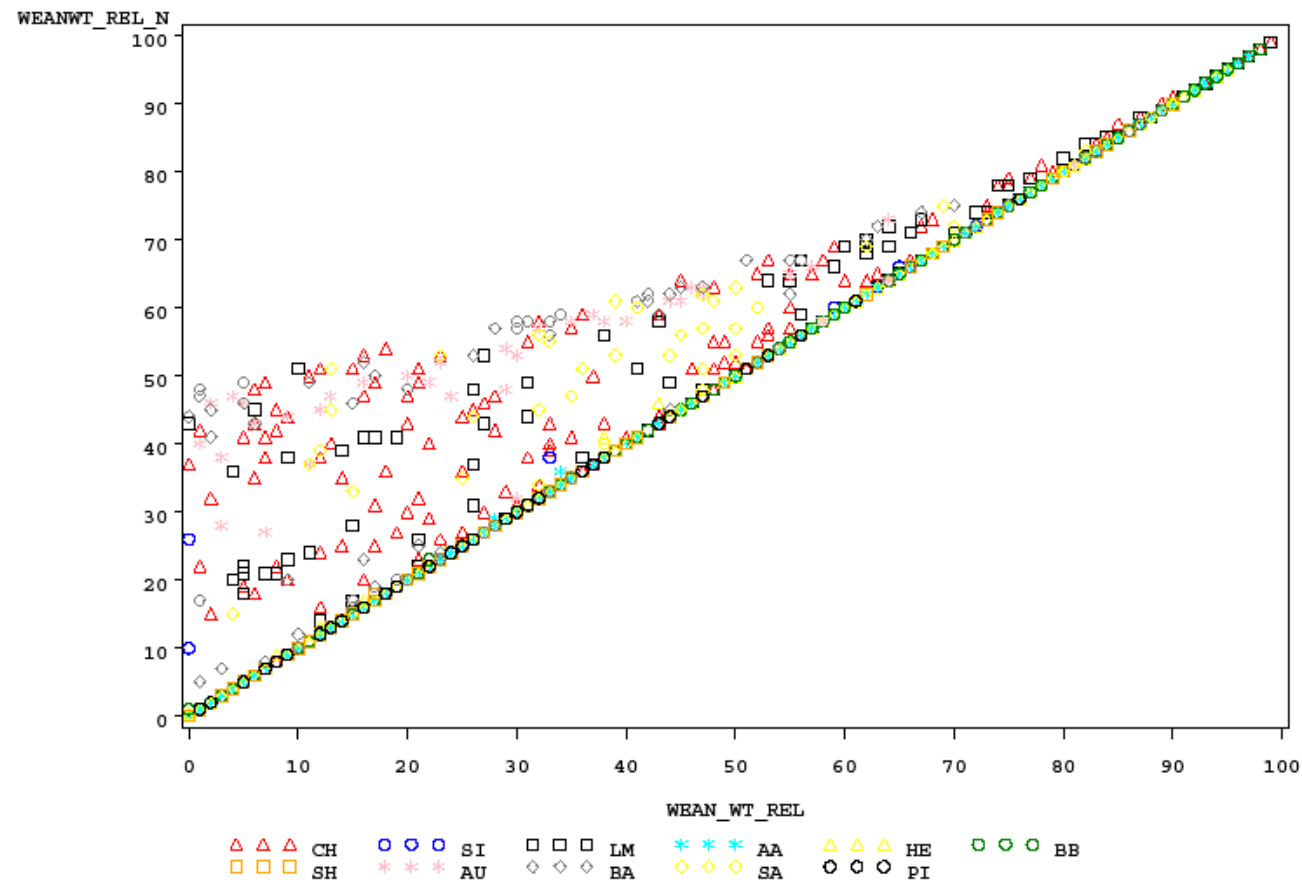
# Test for weaning weight

- Direct and maternal EBV for weaning weight from France included (32.900 animals)
  - Breeds on the same scale, and mean accounted for
  - Pedigree update
  - Transformed EBV to “daughter records”
  - Included as two traits with correlation to Irish traits
  - Reliability foreign EBV used to weight “daughter records”
- Gives new Irish EBVs and reliability for all Irish animals



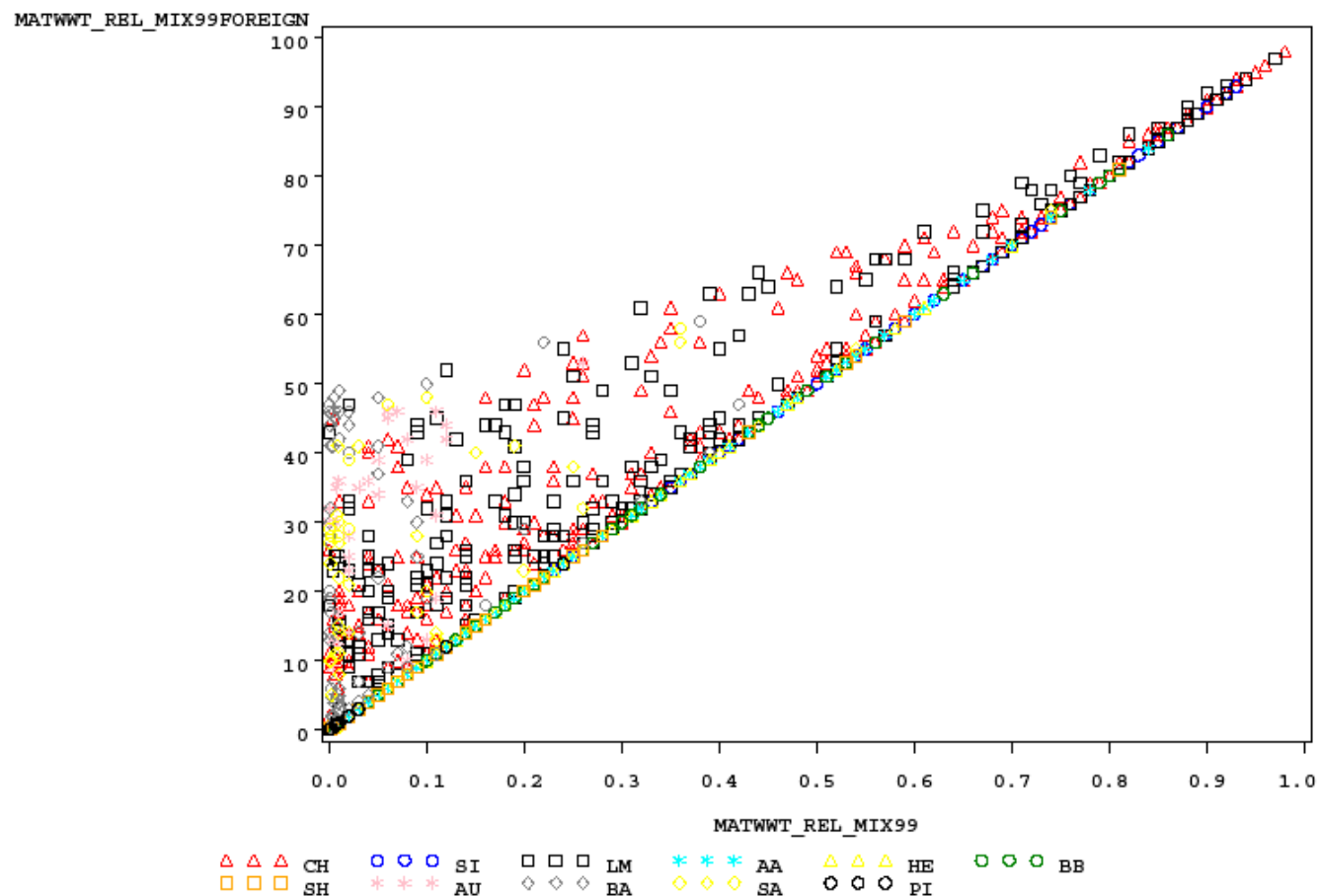
# What happens with reliability direct WW EBV?

Weaning wt rel — existing vs new with foreign EBVs integrated

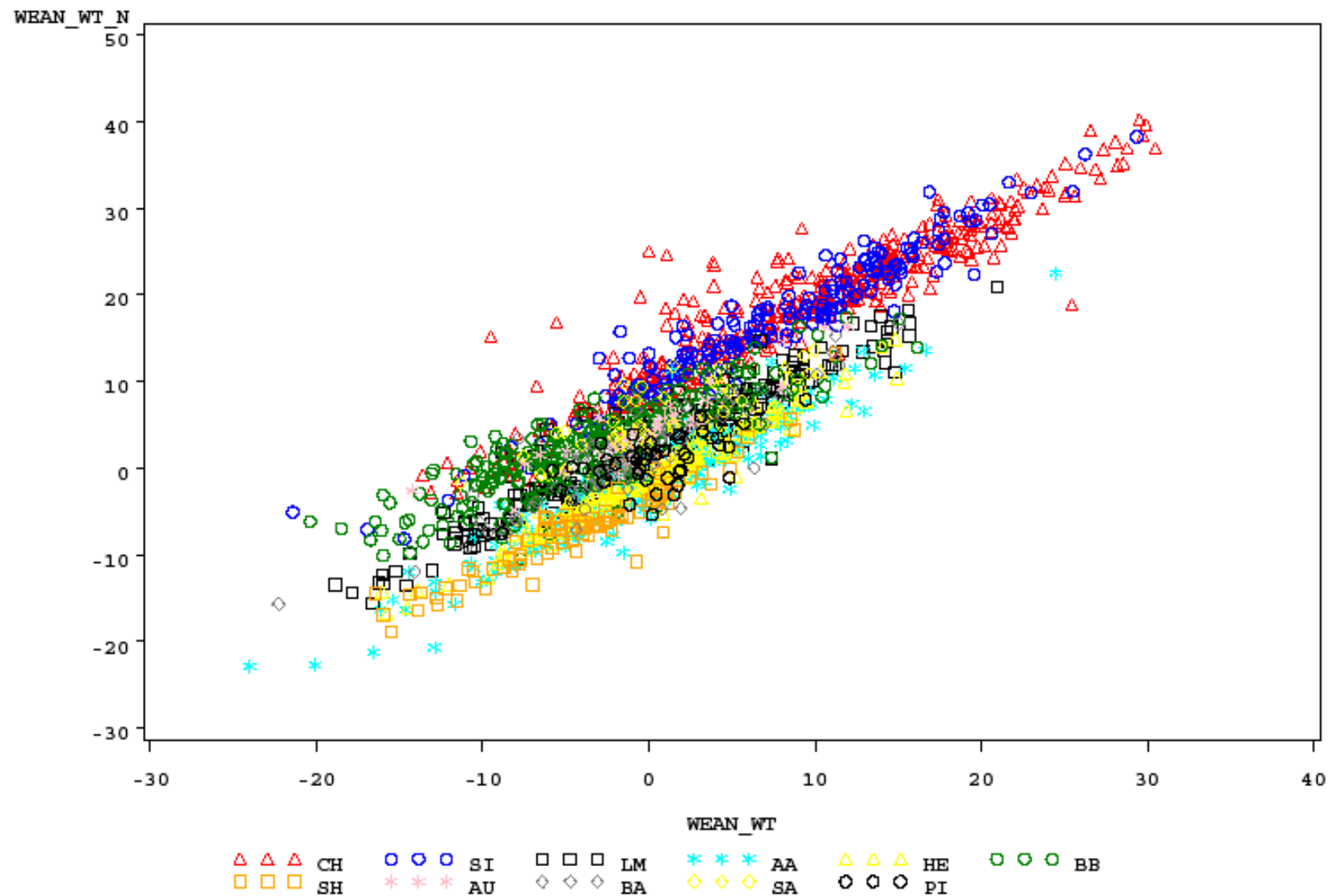


# What happens with reliability maternal WW EBV?

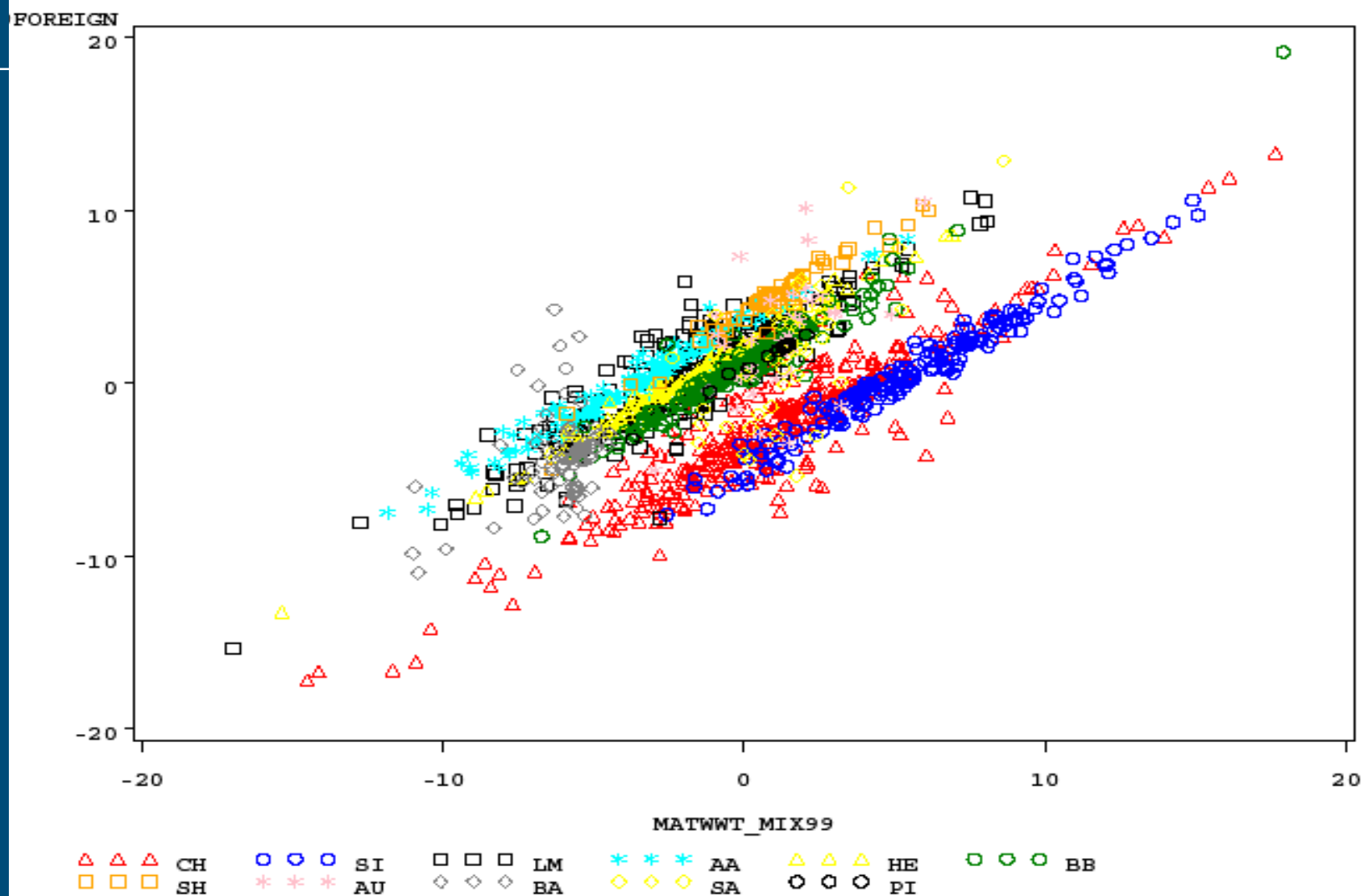
Matwwt rel— MIX99 vs mix99 with new foreign EBVs integrated



# Weaning wt — existing vs new with foreign EBVs integrated

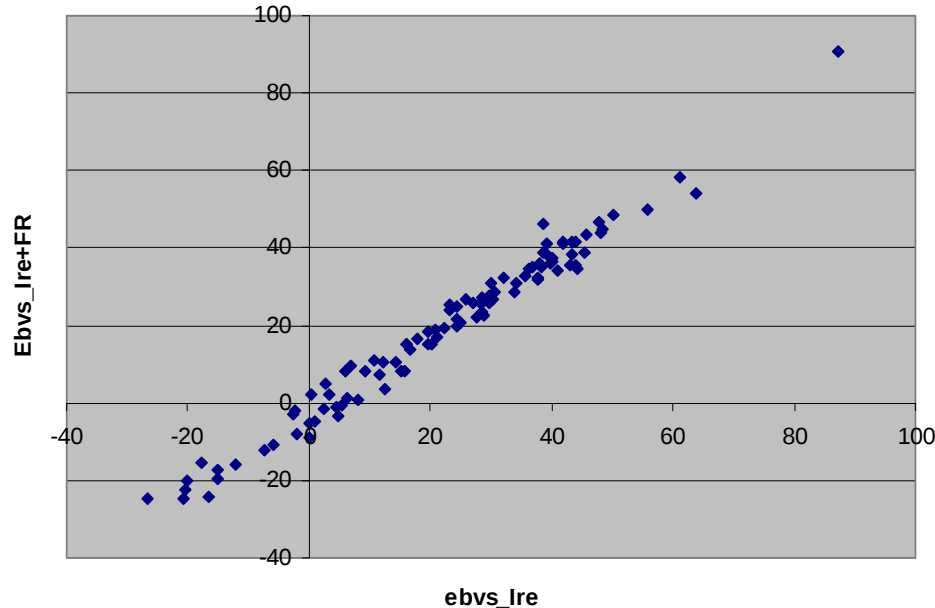


## — MIX99 vs MIX99 with new foreign EBVs integrated

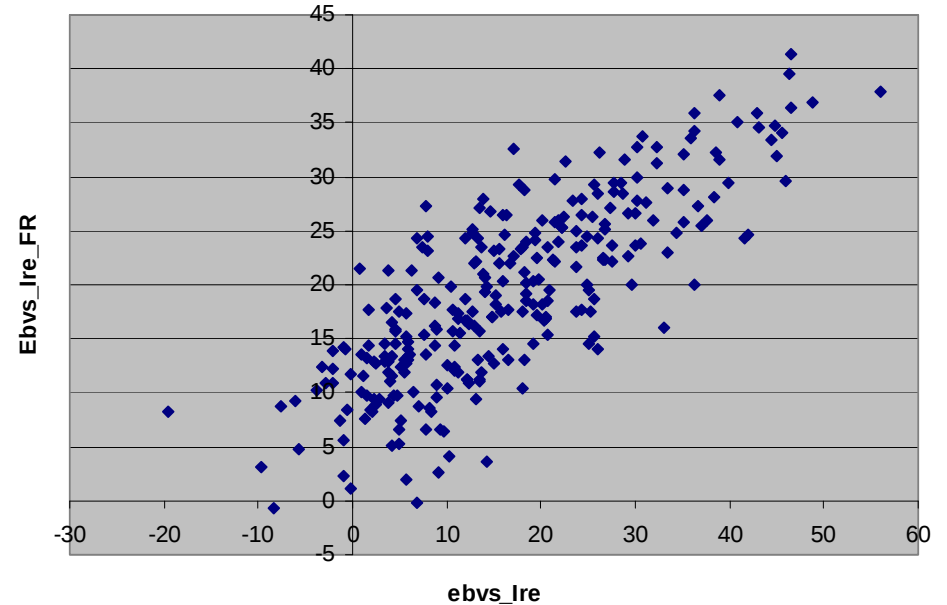


# As expected: little change when reliability IR is high

CH\_ebvs\_rel\_direct\_Ire\_>0.9

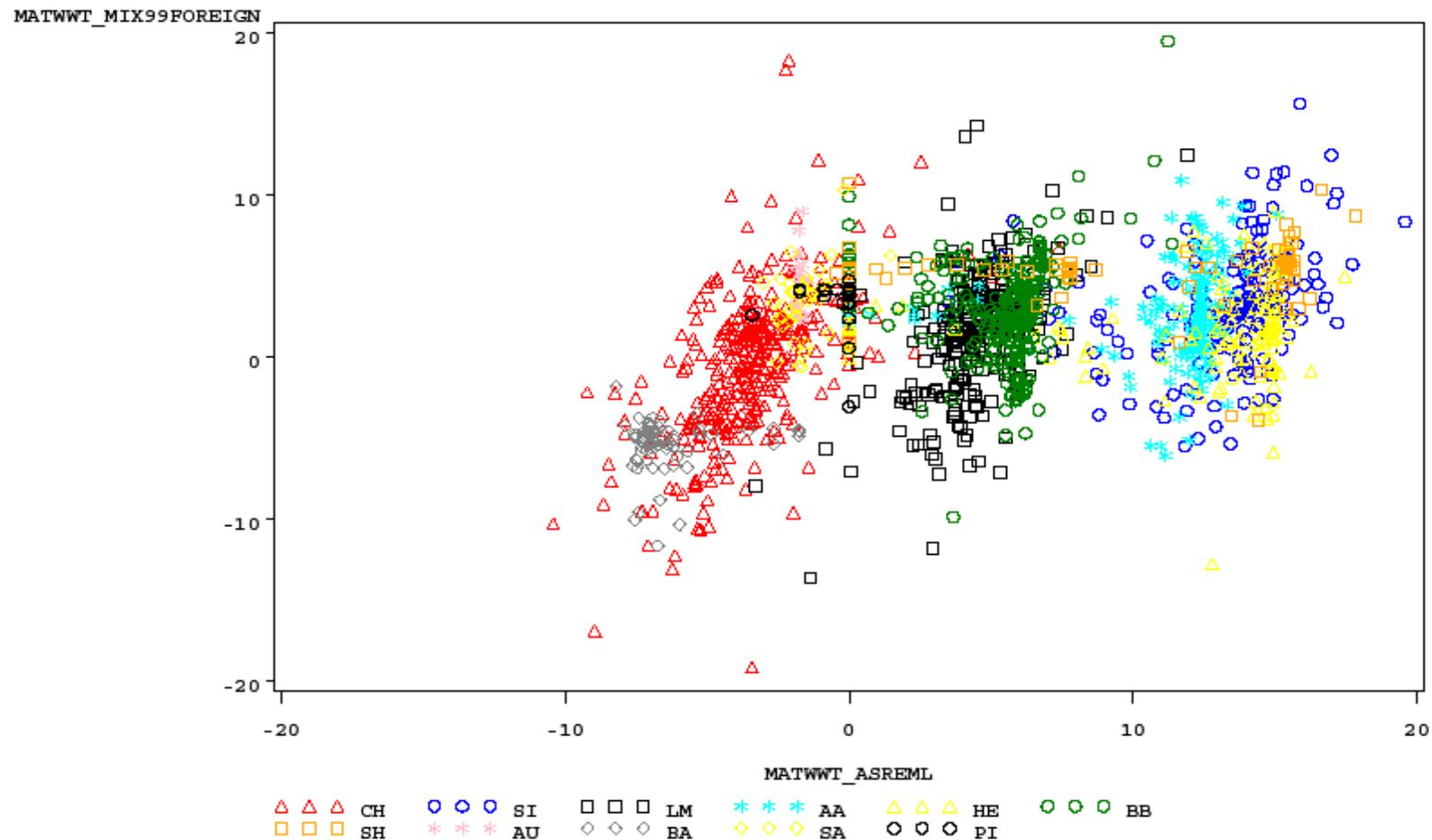


CH\_ebvs\_rel\_d\_Ire\_<0.40\_FR\_>0.6



Unfortunately estimation of maternal breed effects is still difficult, due to lack of data.

Matwwt — existing ASREML vs MIX99 no foreign EBVs



# Conclusion

## ■ Conclusion

- Mix99 offers new and exiting option to include foreign breeding values
- Improves breeding values when not sufficient Irish data is available yet

## ■ Recommendations

- Consider this method in Ireland
- Check individual animals from current test run
- Make careful choices where this is adding reliability and is realistic (traits \* countries \* breeds; genetic correlations; availability Irish data)

