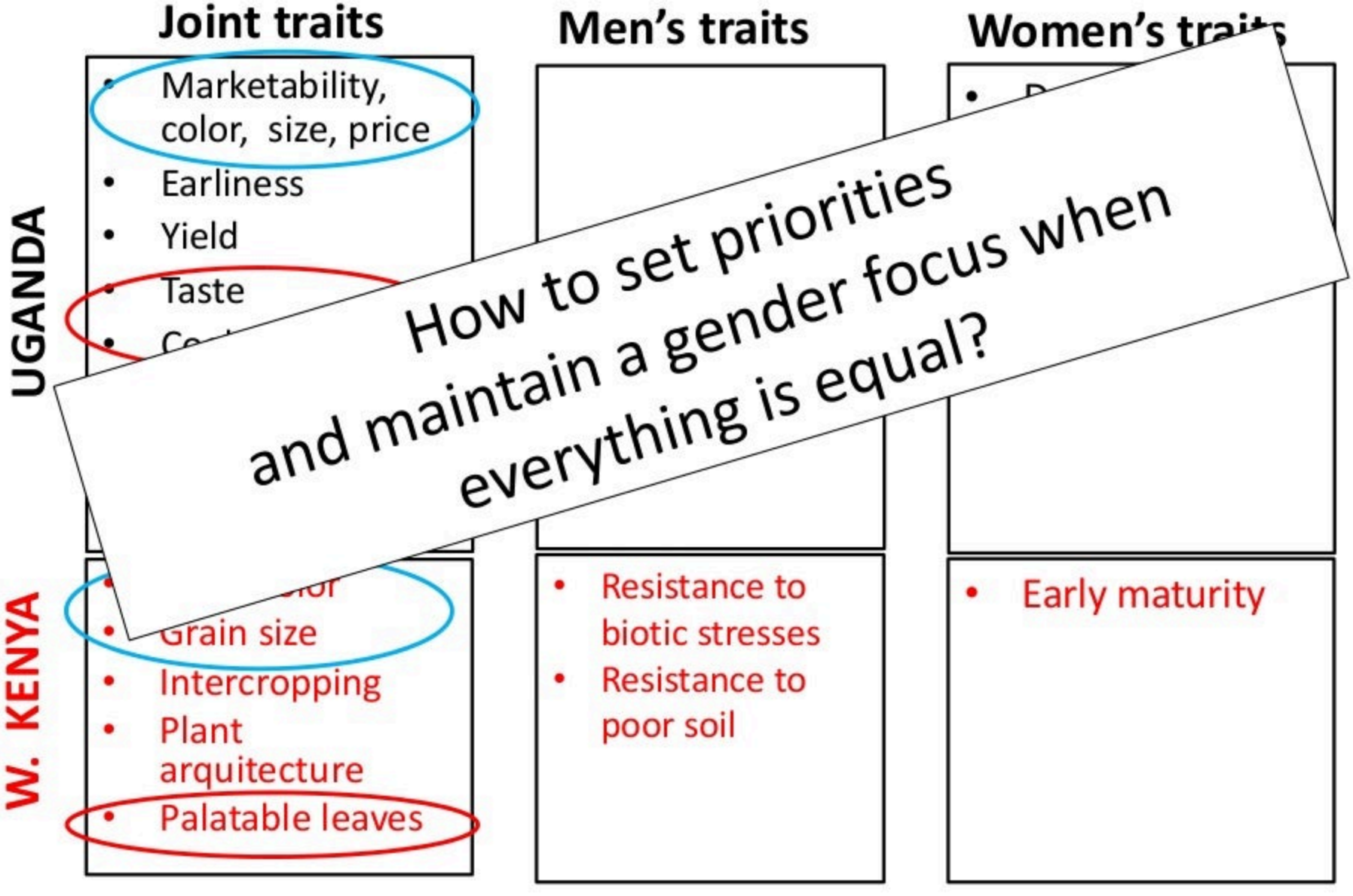
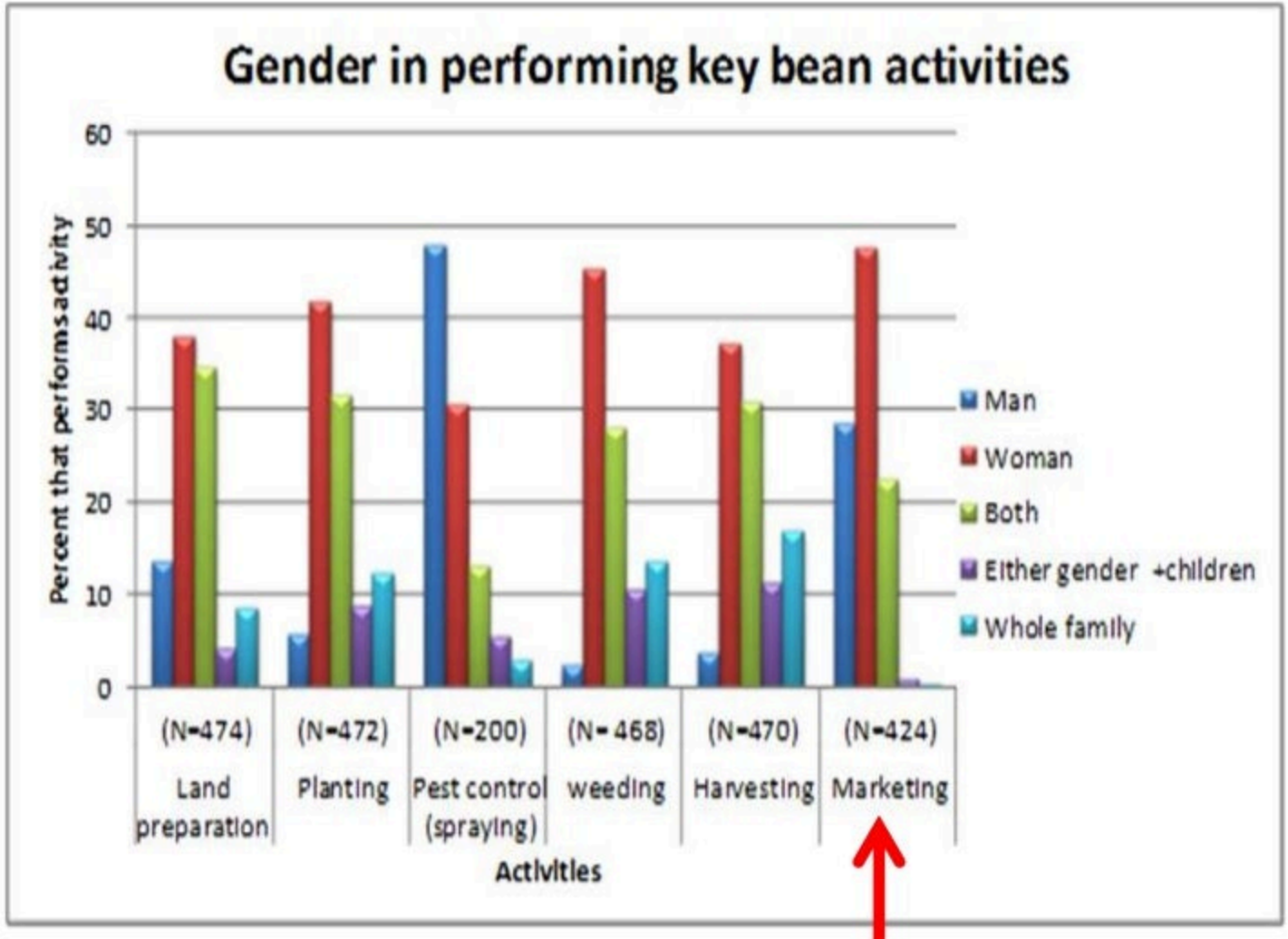
Incorporating Gender-Sensitive Traits in Breeding Programs

Gender-discriminated Traits

(2015, Uganda and W. Kenya)



Gender roles in bean production and marketing, Uganda



Women dominated most bean production activities and also made most decisions in bean production and marketing.

The Value of Short Cooking time

- Industrial processing:
  - Women could save 9 hours per week with pre-cooked beans
- For home cooking:
  - Part of this time could be recovered with fast cooking beans….maybe 4 or 5 hours per week
- If breeders had this sort of data on the impact of gender, they would adopt “gender traits” more readily

Incorporating Cooking Time

- Conceptual obstacles?
  - *"We breed for productivity"*

- Infrastructural limitations
  - Breeders work with dozens or hundreds of lines
  - How to quantify and scale up cooking time?

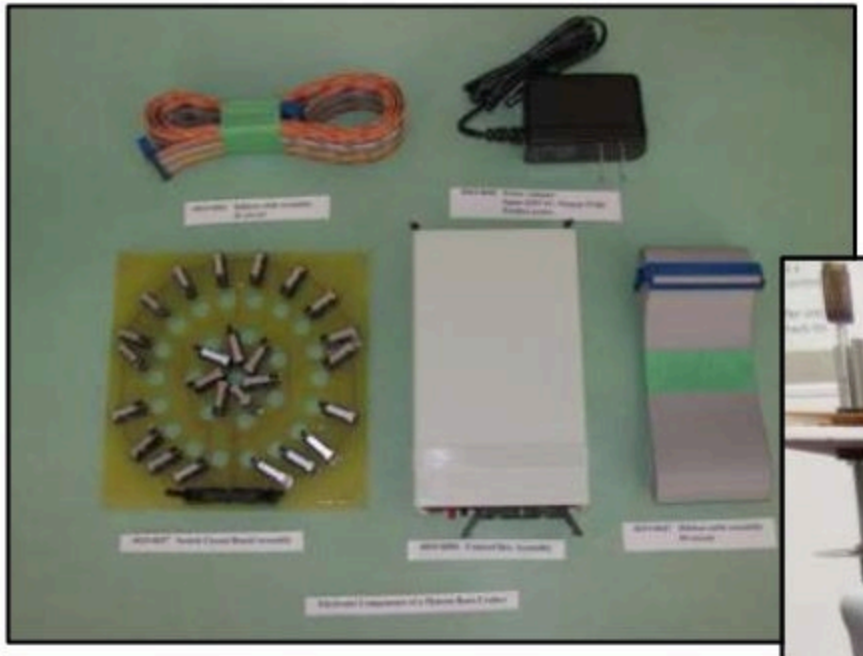
Breeding for Processing Traits is not New

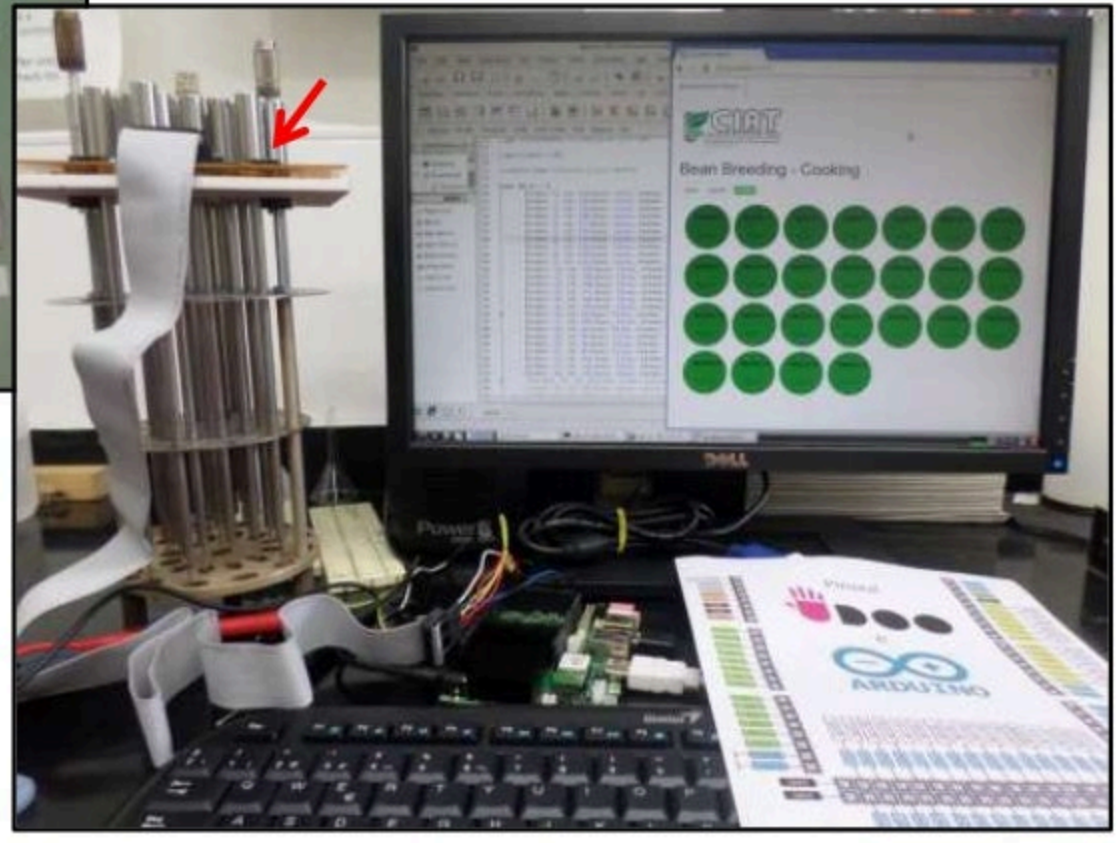
Ugandan Bean Lines

The Matteson Bean Cooker

- Long established laboratory method
- Very slow – 1 sample takes 30 minutes to 2 hours
- Requires automation

Automation for Scaling up the Phenotyping



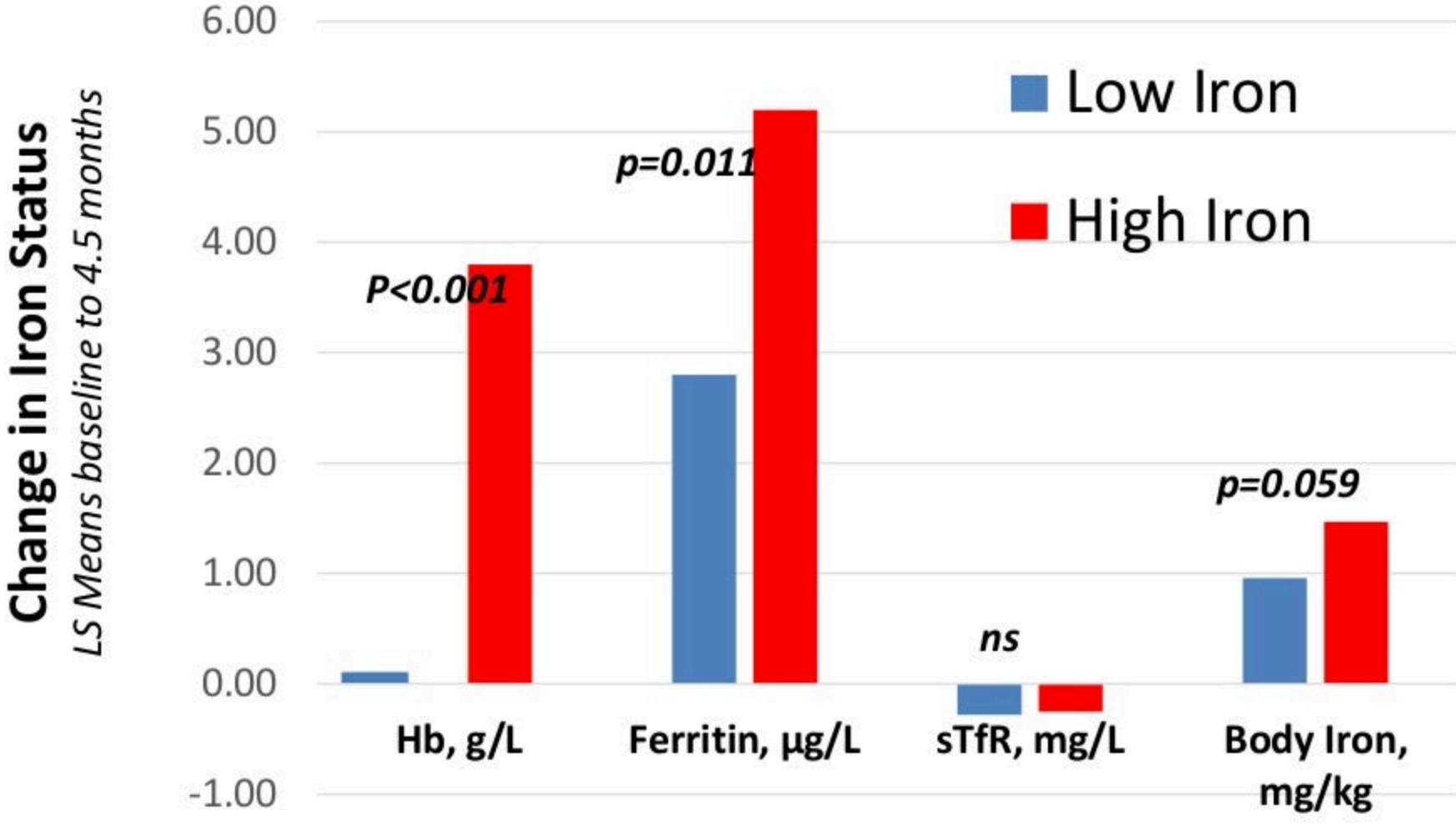


Nutrition: Gender or Biology?

- Women have different nutritional needs
  - Iron requirements

- Biofortification seeks to address these needs with a trait (high iron) for which women may never express preference

Effects of Biofortified Beans on Iron status of Young Women



Nutrition: Gender or Biology?

Even if Nutrition is not the same as Gender…

- …it can be a priority area for interaction, and in support of breeding and adoption
- For example, Orange fleshed sweet potatoes
  - Visibly VERY different
- Through nutritional education, mothers became convinced that for the benefit of their children, OFSP were worth the change
- This is where gender research can intersect productively with biofortification and breeding

Conclusions

- We would benefit from broader information on how general a given preference is, especially in a dynamic environment
  - (not unlike an agronomic trait)
- Beyond lists of gender preferences, understanding the impact of traits with gender implications would encourage breeders to engage
- Breeding for gender traits like cooking time? Where there's a will, there's a way (usually)
- Nutrition? Where are the productive points of contact with breeding for nutritional value?

- Asante sana