

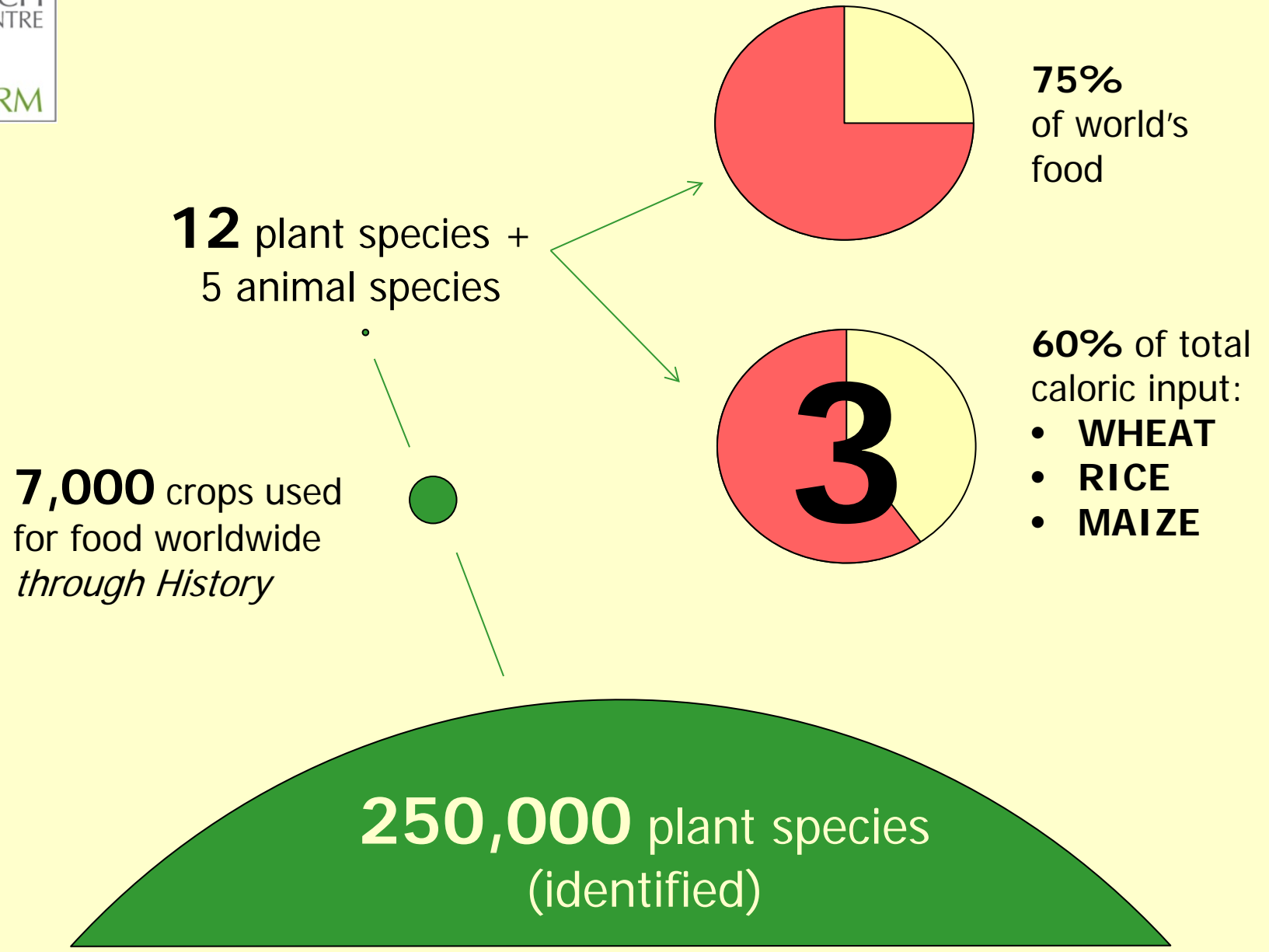


# More crops in the farm, more diversity in the field

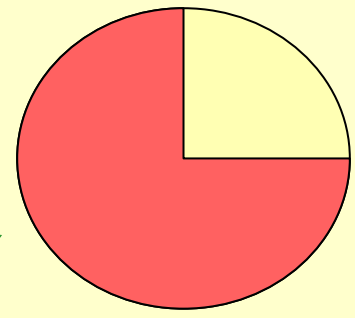
Ambrogio Costanzo

11<sup>th</sup> Organic Producers' Conference

Birmingham, 1-2 February 2017

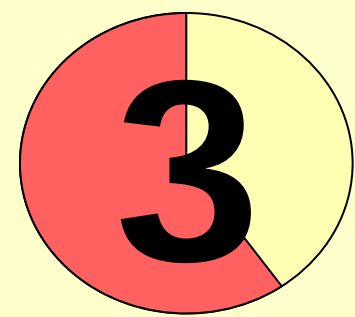


**12** plant species +  
5 animal species



**75%**  
of world's  
food

**7,000** crops used  
for food worldwide  
*through History*



**60%** of total  
caloric input:  
• **WHEAT**  
• **RICE**  
• **MAIZE**

**250,000** plant species  
(identified)



# What does it mean?

A too small diversity is deployed in farming and food systems:

**Homogeneity – Oversimplification**



# What does it mean?

A too small diversity is deployed in farming and food systems:

## Homogeneity – Oversimplification

- ❖ We can use more diversity
- ❖ We can make better use of diversity

**A wide range of UNDERUTILISED CROPS**

# Why is it so important to widen the range of species?



# Why is it so important to widen the range of species?

## ❖ Effective low-input/organic husbandry



27 June 2016 - two neighbouring plots: one is wheat, the other is rivet wheat

# Why is it important to widen the range of species?

- ❖ Effective low-input/organic husbandry
- ❖ Support local market and diverse diets



Food & drink The Observer  
Let's eat together: how immigration made British food great  
Immigrant communities have dramatically changed the British diet

[Mol Metab.](#) 2016 May; 5(5): 317–320.  
Published online 2016 Mar 5. doi: [10.1016/j.molmet.2016.02.005](#)

PMCID: PMC4837298

## A healthy gastrointestinal microbiome is dependent on dietary diversity

Mark L. Heiman<sup>1,\*</sup> and Frank L. Greenway<sup>2</sup>

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# Why is it important to widen the range of species?

- ❖ Effective low-input/organic husbandry
- ❖ Supporting local market and diets
- ❖ **Multiply ecosystem services**



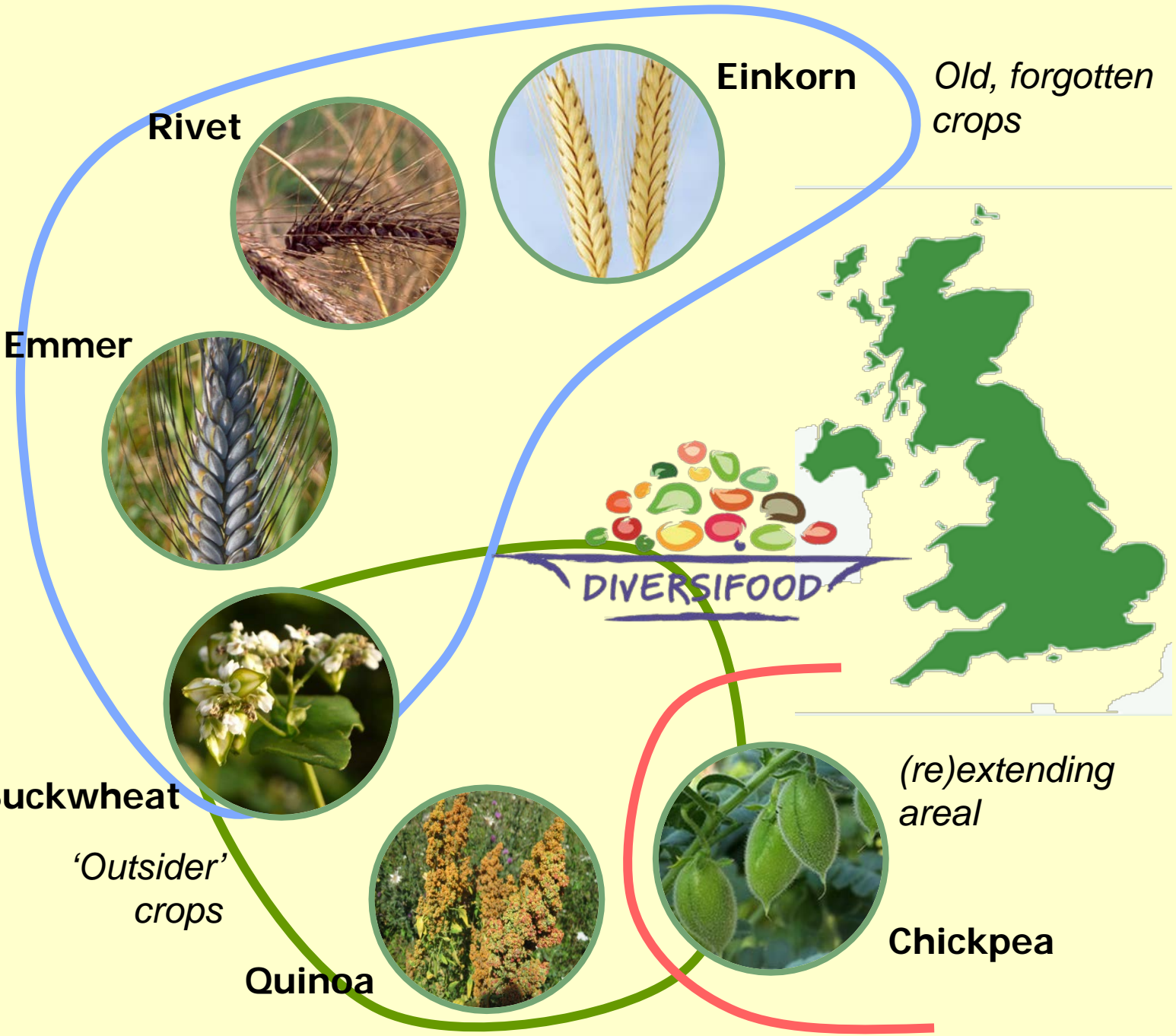
weed control

Buckwheat  
beyond the grain

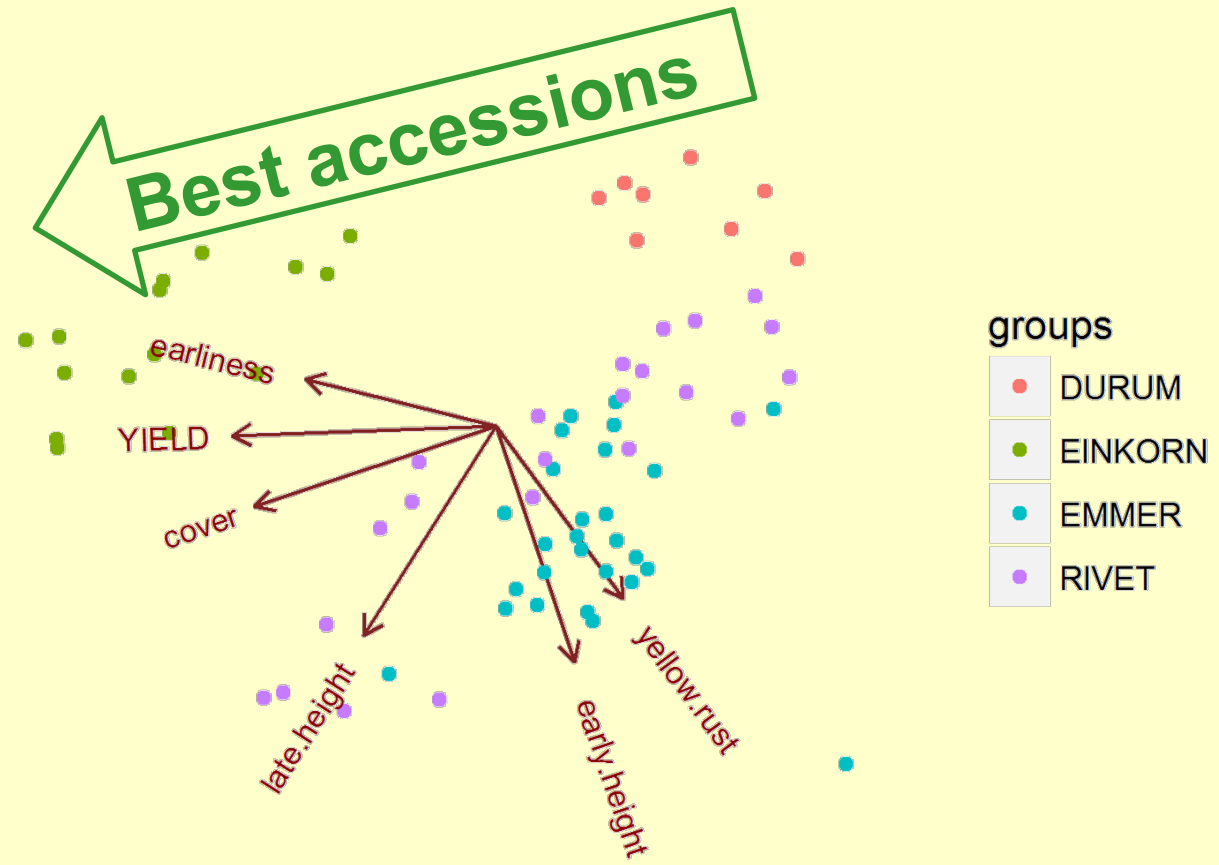


pollination



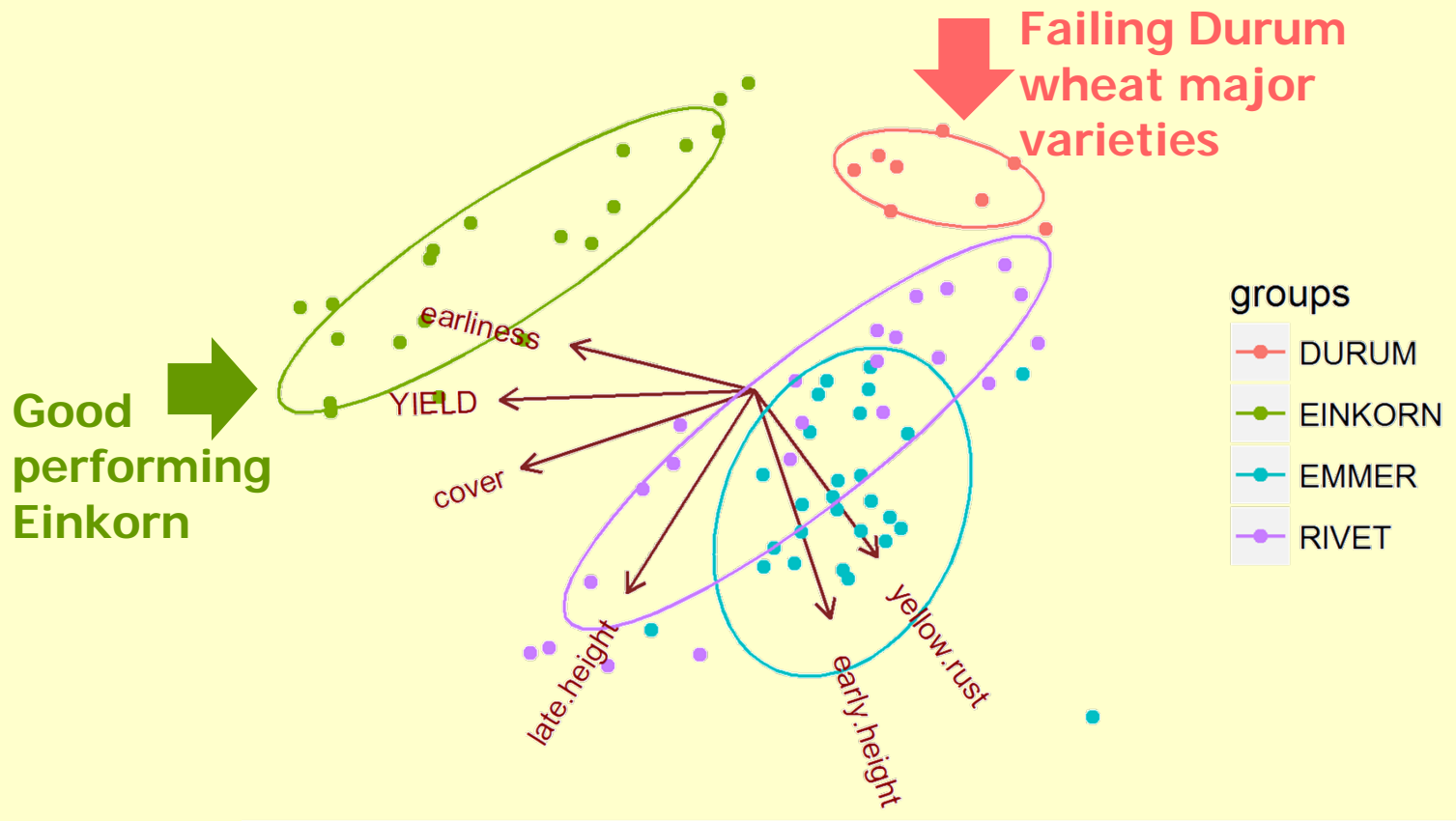


# A first look at minor cereals



Data from ORC's 1<sup>st</sup> year agronomic screening in Doves Farm (Berkshire)

# A first look at minor cereals



# Which are the challenges?

Used in farming systems a while ago

- The system have changed
- Crops may bear disadvantageous traits
- "Start from scratches"
- ❖ Reshape cropping systems
- ❖ Germplasms and breeding
- ❖ Alternative Processing
- ❖ Novel supply chains

*If they've been neglected, there should be a reason!*



*a farmworker in the experimental station where I used to work*

# Other diversification pathways

- ❖ Reconsider **underutilised germplasms** in common species (OPVs)
- ❖ Reconsider **mixed cropping** e.g. wheat and bean
- ❖ Populations and **'evolutionary breeding'**
- ❖ Combinations of the above





**Many thanks for  
your attention**

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