Statistical Model, Multiple Trials

$$y_{ijk} = \mu + \alpha_i + \beta_j + \theta_{ij} + \rho_{jk} + e_{ijk} \tag{1}$$

plot assessment is the sum of

- grand mean
- i^{th} treatment
- j^{th} trial
- i^{th} treatment x trial interaction
- k^{th} block in j^{th} trial
- experimental error

Decomposition of Interaction

- Simple additivity
- *List item*
- Proportional to product of main effects **(Tukey 1949)**
  - $\theta_{ij} = \lambda \alpha_i \beta_j + e_{ij}$
  - In this case,
  - e_{ij} is a lack of fit random variable, while l is a fixed effect that is determine by the specific combinations of treatments and trials.
  - This would suggest that, if were to repeat a series of experiments with similar (perhaps identical) treatments and similar environments, we would