

$$Y_{ijkl} = \beta_0 + \beta_j^d + \beta_\ell^v + (\beta^d \beta^t)_{jk} + (\beta^d \beta^v)_{j\ell} + (\beta^d \beta^v \beta^t)_{jkl} + \varepsilon_{ijkl}$$

$$Y_{ijkl} = \beta_0 + D_j + V_\ell + (DT)_{jk} + (DV)_{j\ell} + (DVT)_{jkl} + \varepsilon_{ijkl}$$

$$\ln [\mathbb{E} (Y_{ijkl} | \text{density, variety, training})] = \beta_0 + \beta_j^d + \beta_\ell^v + (\beta^d \beta^t)_{jk} + (\beta^d \beta^v)_{j\ell} + (\beta^d \beta^v \beta^t)_{jk\ell}$$

$$\ln [\mathbb{E} (Y_{ijkl} \mid \text{density, variety, training})] = \beta_0 + D_j + V_\ell + (DT)_{jk} + (DV)_{j\ell} + (DVT)_{jk\ell}$$

$$\text{logit}(P_{ijkl}) = \beta_0 + \beta_j^d + \beta_\ell^v + (\beta^d \beta^t)_{jk} + (\beta^d \beta^v)_{j\ell} + (\beta^d \beta^v \beta^t)_{jk\ell}$$

$$\text{logit}(P_{ijkl}) = \beta_0 + D_j + V_\ell + (DT)_{jk} + (DV)_{j\ell} + (DVT)_{jkl}$$

$$\begin{cases} \text{Block :} & \gamma_{oi} \sim \mathcal{N}(0, \sigma_1^2) \\ \text{Variety :} & \gamma_{oij} \sim \mathcal{N}(0, \sigma_2^2) \\ \text{Training :} & \gamma_{oijk} \sim \mathcal{N}(0, \sigma_3^2) \end{cases}$$