

**Which recurrent selection scheme to improve
mixtures of crop species?
Theoretical expectations**

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**SUPPLEMENTAL MATERIAL
FIGURE S3**

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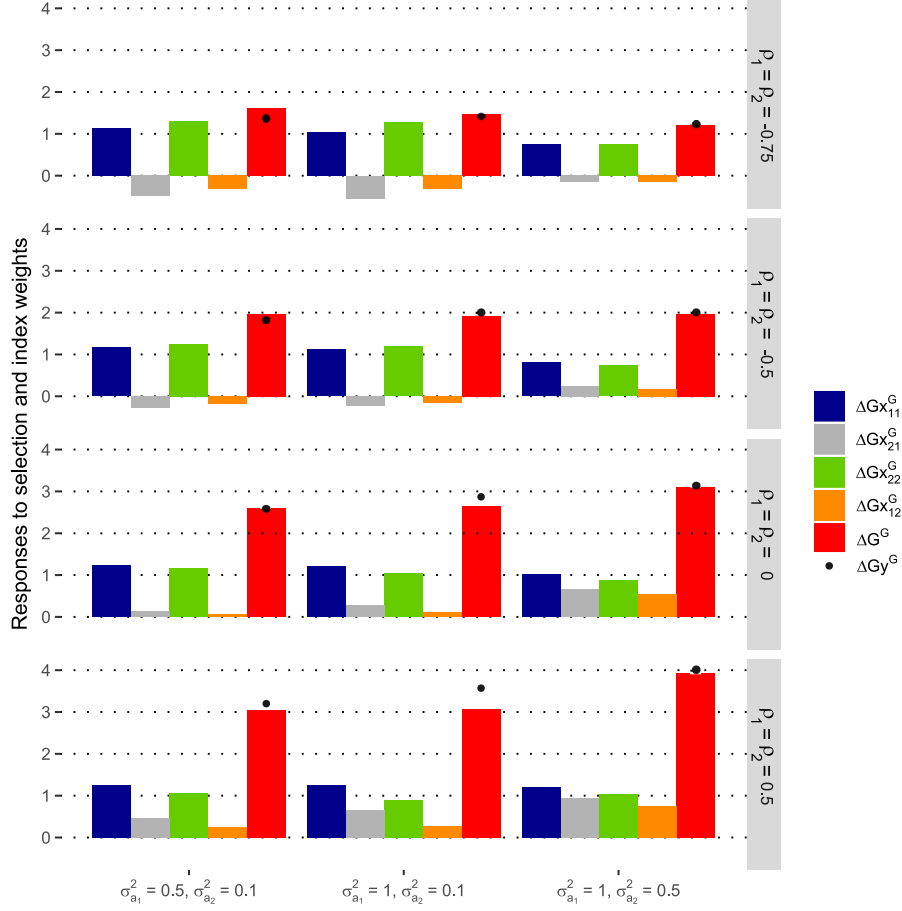


Figure S3 Responses to selection expected after one cycle of parallel recurrent selections in two species for General Mixture Ability with the other species (SGMA) aiming to equate the expected responses of the contributions of the two species to the performance of their mixture. In each species, the selection criterion of a candidate was a linear combination (index) of the observed contributions of its progeny family and of the bulk of all progeny families from the other species with which it is mixed. $\Delta G_{x_{11}}^G$ and $\Delta G_{x_{21}}^G$ are the expected responses to selection in species 1 of the contributions to the performance of the mixture of species 1 and 2, respectively. $\Delta G_{x_{22}}^G$ and $\Delta G_{x_{12}}^G$ are the expected responses to selection in species 2 of the contributions of species 2 and 1, respectively. The pair of indices applied to selections in species 1 and 2 was chosen as the one providing the highest cumulated expected response to selection of the performance of the mixture (ΔG^G) among those providing equal cumulated expected responses of the contributions of the two species ($\Delta G_{x_{11}}^G + \Delta G_{x_{12}}^G = \Delta G_{x_{22}}^G + \Delta G_{x_{21}}^G$). ΔG_y^G is the cumulated expected response to selection of the performance of the mixture when the selection criterion is the observed performance of tested mixtures in each of the two parallel selection processes. The variance of direct effect was set equal to 1 in the two species. $\sigma_{a_1}^2$ and $\sigma_{a_2}^2$ are the variances of associate effects in species 1 and 2, respectively. The correlation between the two species components of the plot error was set to +0.5. See Figure 4 (main text) for the meaning of ρ_1 , ρ_2 and ρ_{12} .