Summary of the fixed and residual model terms fitted at each timepoint across germination energy, germination index, and preharvest sprouting for genome wide assocation modeling

| **traita** | **year** | **PM date** | **Q matrix?** | **PCs** | **Fixed effect term(s)b** | **Residual termsb** | **Converged?** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| GE | 2020 | 5 | yes | 2 | Location |  | yes |
| GE | 2020 | 19 | yes | 2 | Location | Location | yes |
| GE | 2020 | 47 | yes | 2 | Location:Rep + Location + Rep |  | yes |
| GE | 2020 | 96 | yes | 2 | Location |  | no |
| GE | 2020 | 152 | yes | 2 | Location |  | yes |
| GI | 2020 | 5 | yes | 2 | Location + Rep |  | yes |
| GI | 2020 | 19 | yes | 2 | Location | Location | yes |
| GI | 2020 | 47 | yes | 2 |  |  | yes |
| GI | 2020 | 96 | yes | 2 |  |  | yes |
| GI | 2020 | 152 | yes | 2 |  |  | yes |
| GE | 2020/2021 | 5 | yes | 2 | Year+ Year:Location |  | no |
| GE | 2020/2021 | 19 | yes | 2 |  | Year | yes |
| GE | 2020/2021 | 47 | yes | 2 | Year:Location + Location |  | yes |
| GE | 2020/2021 | 96 | yes | 2 | Year:Location |  | yes |
| GE | 2020/2021 | 152 | yes | 2 |  |  | yes |
| GI | 2020/2021 | 5 | yes | 2 | Year:Location | Year | yes |
| GI | 2020/2021 | 19 | yes | 2 | Location:Year |  | yes |
| GI | 2020/2021 | 47 | yes | 2 | Year:Rep | Year | yes |
| GI | 2020/2021 | 96 | yes | 2 | Year + Year:Rep |  | yes |
| GI | 2020/2021 | 152 | yes | 2 | Year + Year:replication |  | yes |
| PHS | 2020/2021 | 7 | yes | 2 | Year+ Year:Location |  | yes |
| GE | 2021 | 5 | yes | 2 |  | Location | no |
| GE | 2021 | 19 | yes | 2 |  | Rep | yes |
| GE | 2021 | 22 | yes | 2 |  |  | yes |
| GE | 2021 | 33 | yes | 2 | replication:Row |  | yes |
| GE | 2021 | 47 | yes | 2 |  |  | yes |
| GE | 2021 | 68 | yes | 2 | Location:Row + Row |  | yes |
| GE | 2021 | 96 | yes | 2 | Location:Row | Location | no |
| GE | 2021 | 152 | yes | 2 | Location:Row |  | no |
| GI | 2021 | 5 | yes | 2 |  | Location | yes |
| GI | 2021 | 19 | yes | 2 |  | Rep | yes |
| GI | 2021 | 22 | yes | 2 |  |  | yes |
| GI | 2021 | 33 | yes | 2 | Rep |  | yes |
| GI | 2021 | 47 | yes | 2 |  |  | yes |
| GI | 2021 | 68 | yes | 2 | Location |  | yes |
| GI 0 | 2021 | 96 | yes | 2 | Location:Row + replication | Row | yes |
| GI 0 | 2021 | 152 | yes | 2 | Location |  | yes |
| *Note:*PM date: days after physiological maturity; PCs: Number of Principal components included in the model | | | | | | | |
| aGE: Germination Energy, GI: Germination index, GI 0:unadjusted germination index, PHS: Preharvest sprouting | | | | | | | |
| bRep:Replication of dormancy assay measured within each timepoint; Row: spatial effect of Row in the field | | | | | | | |