











**Figure S5** Integrated plots showing results of independent genomic datasets used to investigate the genetic basis of background dependence of the *sd*<sup>E3</sup> phenotype. Backcross: Average frequency of the ORE (short-wing) allele across four short-wing introgression lines. Modifier deletions: open bars represent deletions with a significant main effect on the *sd*<sup>E3</sup> phenotype; light shaded bars represent deletions in which both the main and interaction effects are significant. DGE: open bars represent genes whose transcript counts are influenced by *sd* genotype; light shaded bars represent genes showing evidence of both an overall effect of *sd* genotype and genotype-dependent allelic imbalance; and dark shaded bars represent genes showing evidence of a genotype-by-background interaction effect; and dark shaded bars represent genes showing evidence of a genotype-by-background interaction effect; and dark shaded bars represent genes showing evidence of a genotype-by-background interaction effect; and dark shaded bars represent genes showing evidence of a genotype-by-background interaction effect; and dark shaded bars represent genes showing evidence of the two genetic backgrounds); light shaded bars represent genes showing evidence of a dark shaded bars represent genes showing evidence of both the main and interaction effect. Binding predictions: open bars represent genes predicted to be overall SD binding targets (in at least one of the two genetic backgrounds); light shaded bars represent genes showing evidence of both overall SD binding and differential affinity between backgrounds. Only genes showing evidence of at least four significant effects across all datasets are shown.