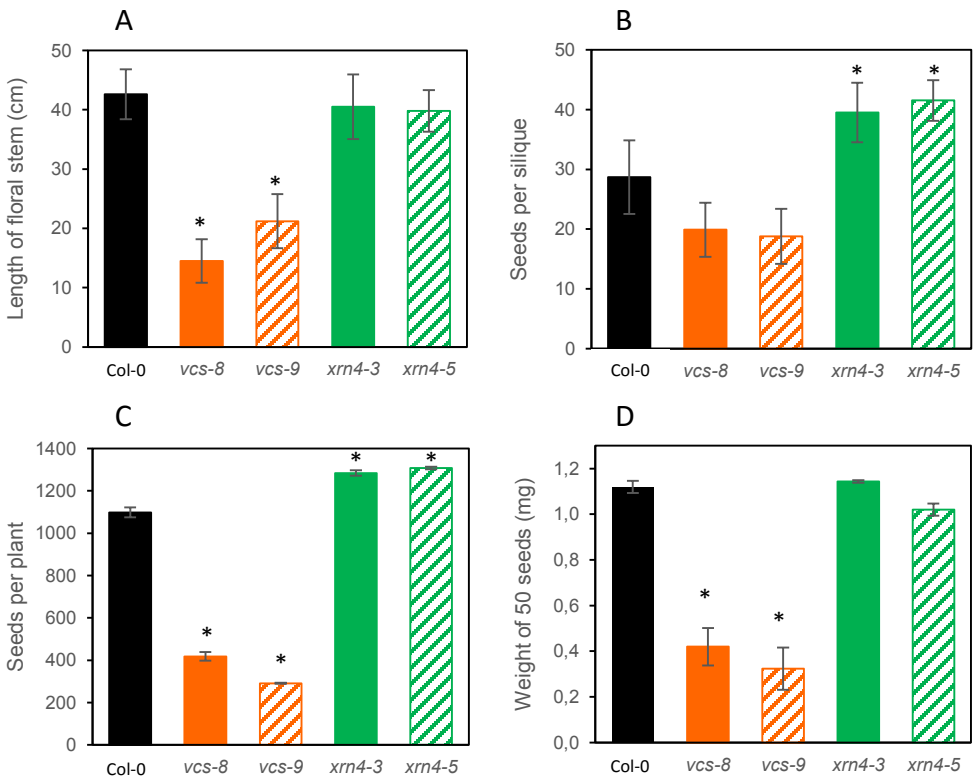
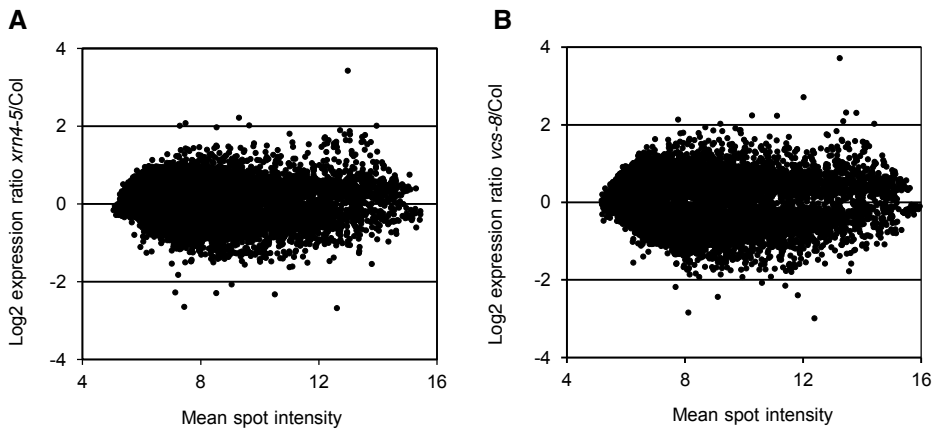
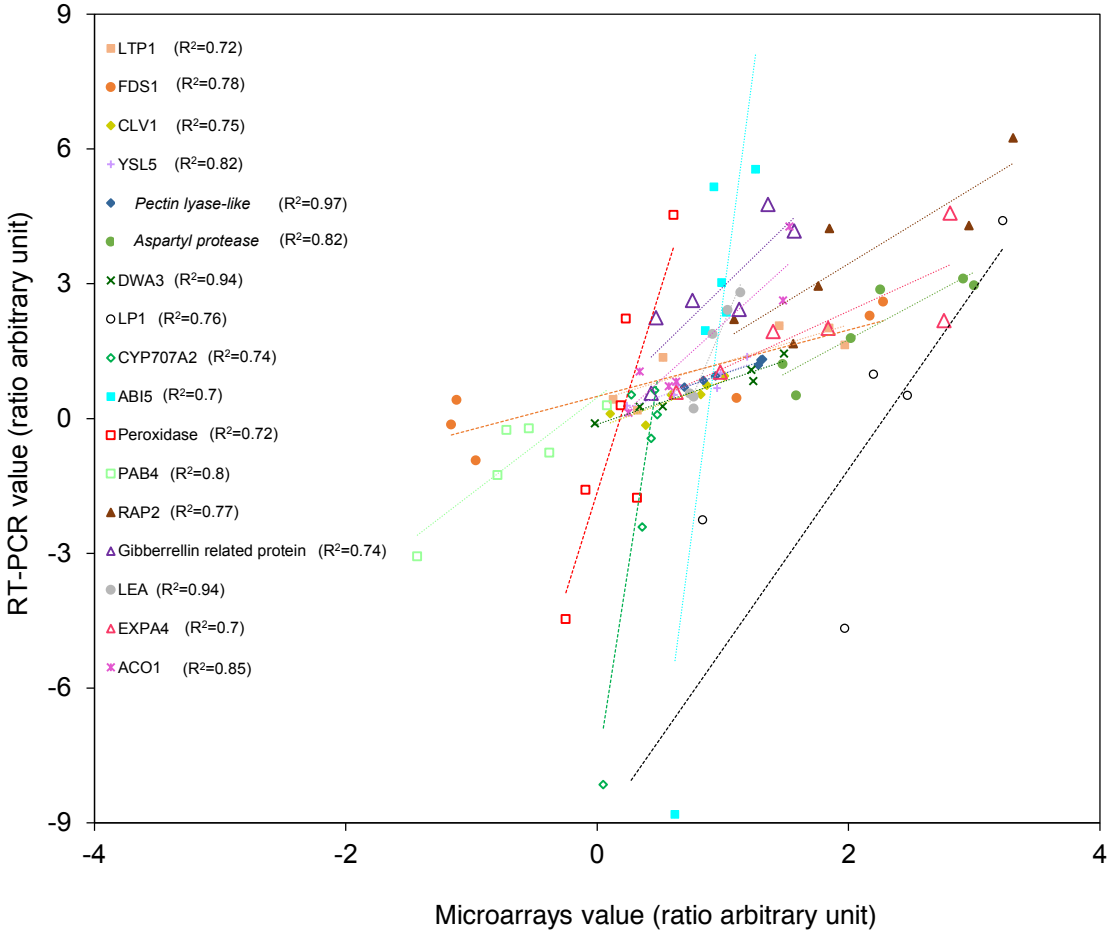


Supplemental Figure 1. Phenotypic Characterization of Growth and Seed Production of Col-0, *xrn4-3, xrn4-5, vcs-8* and *vcs-9* Mutant Plants Grown at 22°C.

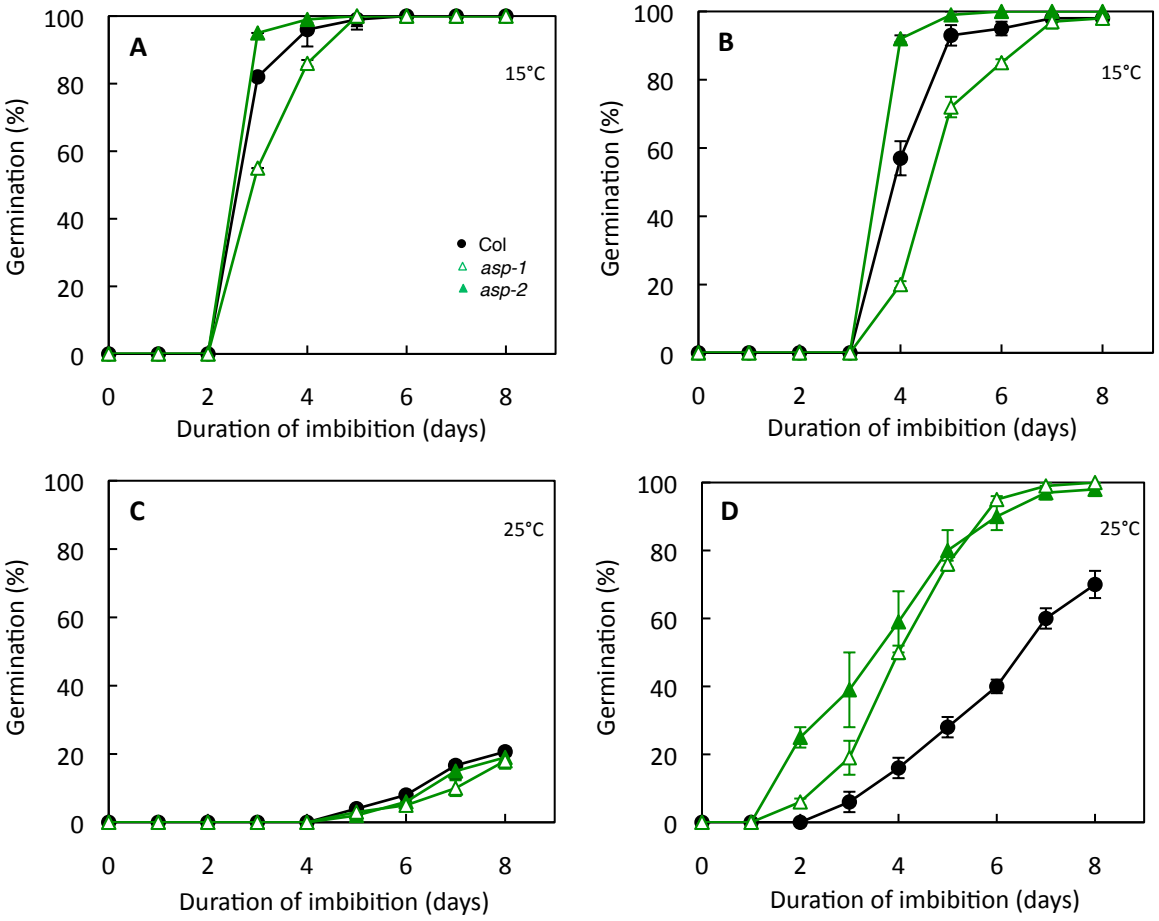
(A) Floral stem measurements. Means ± SE of 10 plants. (B) Number of seeds per silique Means ± SE of 10 siliques. (C) Number of seeds par plant = number of siliques per plant x number of seeds per silique. (D) weight of 50 seeds. Means ± SE of 3 biological replicates. Asterisks indicate a significant difference with the wild type (Anova test and Newman-Keuls Test, p=0.05).



Supplemental Figure 2. MA Plot of Microarray Data of Ratios of Expression between *xrn4-5* Mutant and Col-0 (A) or *vcs-8* Mutant and Col-0 (B) from Seeds after 24 h of Imbibition at 25 °C. Data represented are Log2(expression ratio of *xrn4-5* or *vcs-8* seeds / expression ratio of Col-0 seeds). Positive values of log2(*xrn4-5*/Col-0) and log2(*vcs-8*/Col-0) correspond to transcripts more expressed in *xrn4-5* and *vcs-8* mutant respectively, negative values correspond to transcripts more expressed in Col-0 seeds.



Supplemental Figure 3. Validation of Microarrays Results. Scatterplot showing correlations between microarray results (x-axis) and qRT-PCR experiments (y-axis) on a set of 17 genes: *LTP1* (At1g62500), *FDS1* (At4g25100), *PXL1* (At1g08590), *YSL5* (At3g17650), *pectin lyase-like* (At3g62110), *Aspartyl protease* (At1g66180), *DWA3* (At1g61210), *LP1* (At1g18250), *CYP707A2* (At2g29090), *ABI5* (At2g36270), *peroxidase* (At1g05240), *PAB4* (At2g23350), *RAP2* (At1g22190), *Gibberellin-regulated protein (*At2g14900), *LEA* (At3g0248), *EXP4 (*At2g39700) and *ACO1* (At2g19590) genes (A). The UBQ5 (At3g62250) and At4g12590 genes were used as reference genes. Regression lines are drawn for each gene and the R² values corresponding are indicated within the graph. For each point of qRT-PCR, ratios of log2 (abundance) ND/D were calculated to compare with microarray data. For both methods 3 independent biological samples were used.



Supplemental Figure 4. Effect of ABA and GA on germination of seeds of asp mutants. Germination of freshly harvested seeds of Col-0 (closed circles), *asp-1* (open triangles) and *asp-2* (closed triangles) in darkness at 15°C on water (A) or in the presence of ABA 10^{-6} M (B) and at 25°C on water (C) or in the presence of GA_3 5.10^{-4} M (D). Means ± SD of triplicate experiments are shown.