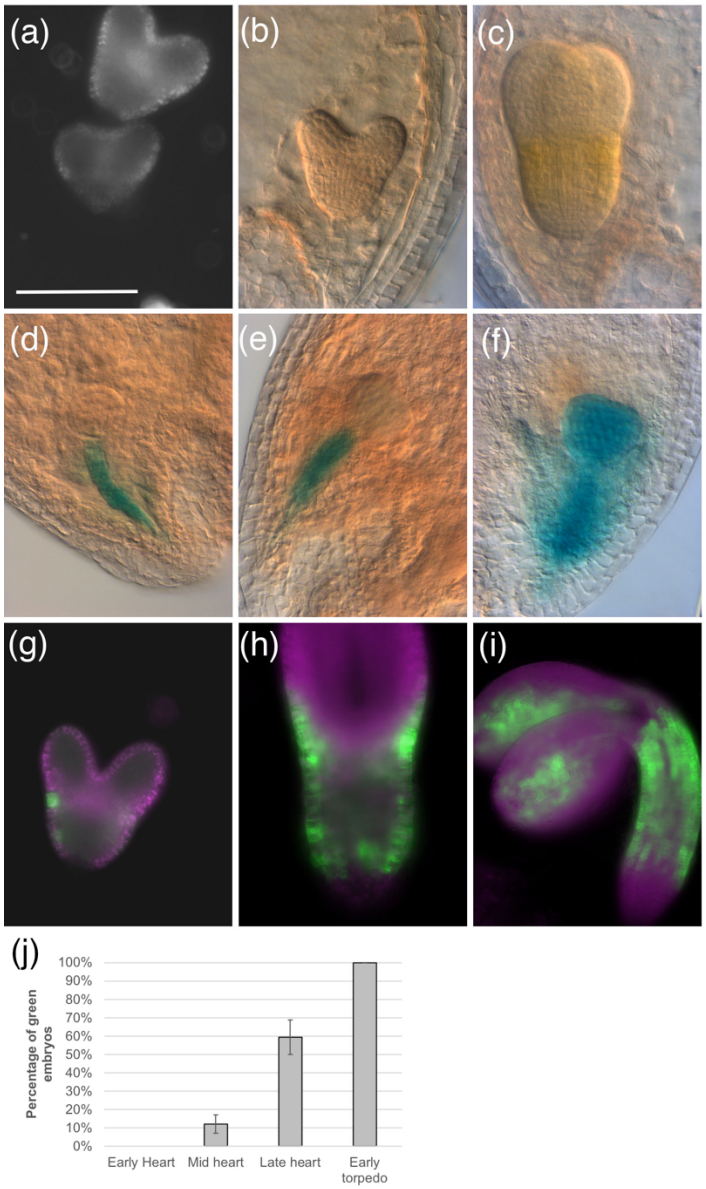

Figure S1: Greening and expression of maturation reporters in wild type embryos.

(a-c) Greening. (a) Chlorophyll autofluorescence in an early heart (below) and heart (above) stage embryos, showing accumulation primarily in the protoderm. (b) DIC image of a white heart stage embryo. (c) DIC image of a late heart embryo, showing the appearance of greenish color in the hypocotyl. (d-f) Expression of *FUS3p:GUS*. (d) Late globular and (e) early heart stage embryos showing only suspensor staining. (f) Heart stage embryo staining in the suspensor and embryo proper. (g-i) Expression of *At2S3p:GFP*. (g) Late heart stage embryo expressing in only a few cells of the protoderm. (h) Mid torpedo stage embryo, expression now occupies the entire hypocotyl. (i) Bent cotyledon stage embryo, expression has spread to the cotyledons, and it will eventually cover the entire embryo. Magenta represents chlorophyll autofluorescence. Scale bar: 100 µm for A-H, 200 µm for I. (j) Reproducibility of the protocol to score embryo greening by clearing. Three replicates of Col wild type grown at different times (means ± SE).

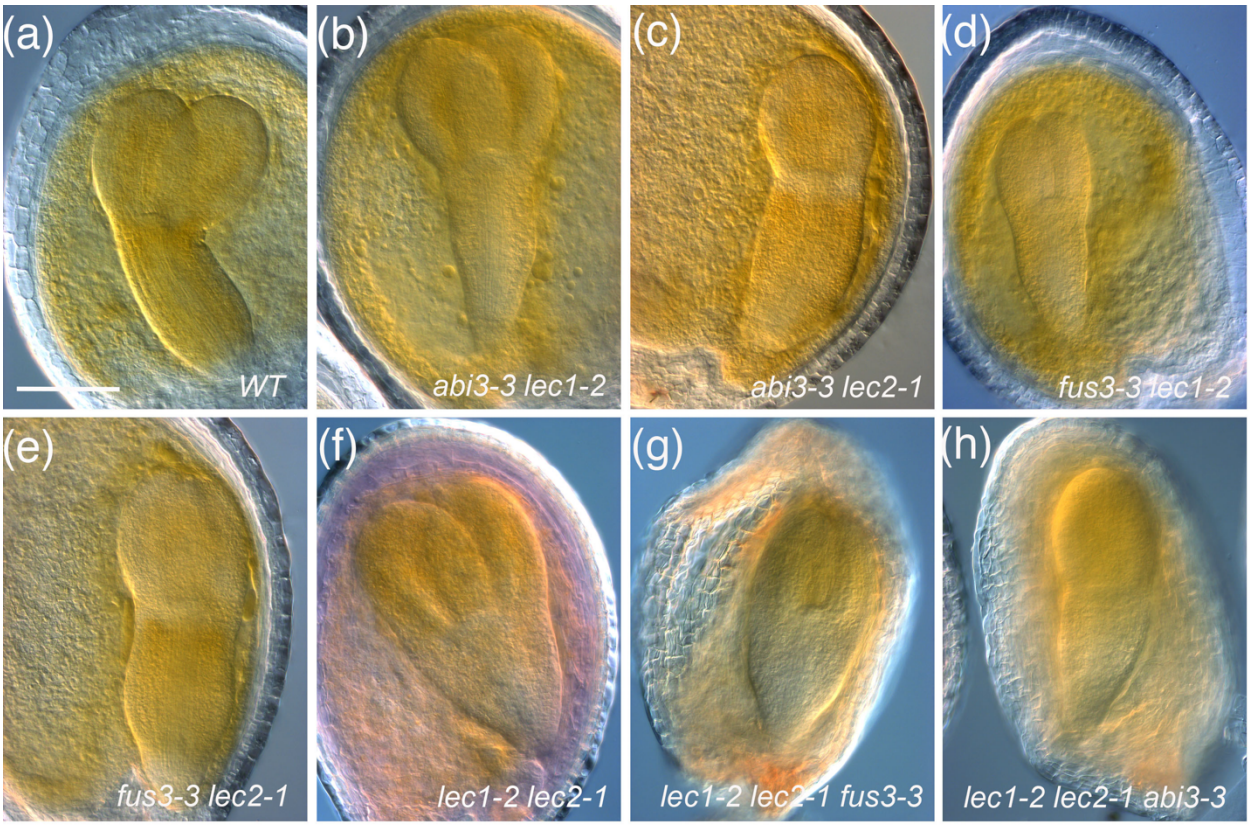

Figure S2: Distribution of chlorophyll in older *lafl* double and triple mutants.

Images of cleared seeds at around the late torpedo stage. (a) Wild type Col, (b) *abi3-3 lec1-2,* (c) *abi3-3 lec2-1,* (d) *fus3-3 lec1-2,* (e) *fus3-3 lec2-1,* (f) *lec1-2 lec2-1,* (g) *lec1-2 lec2-1 fus3-3,* (h) *lec1-2 lec2-1 abi3-3.* Note the white hypocotyl in combinations with *lec1-2* (b, d, f, g, h) and patchy chlorophyll in combinations with *lec2-1* (c, e, f, g, h). In (f) the purplish color is anthocyanin that has leached from the embryo. Scale bar: 75 µm for all.

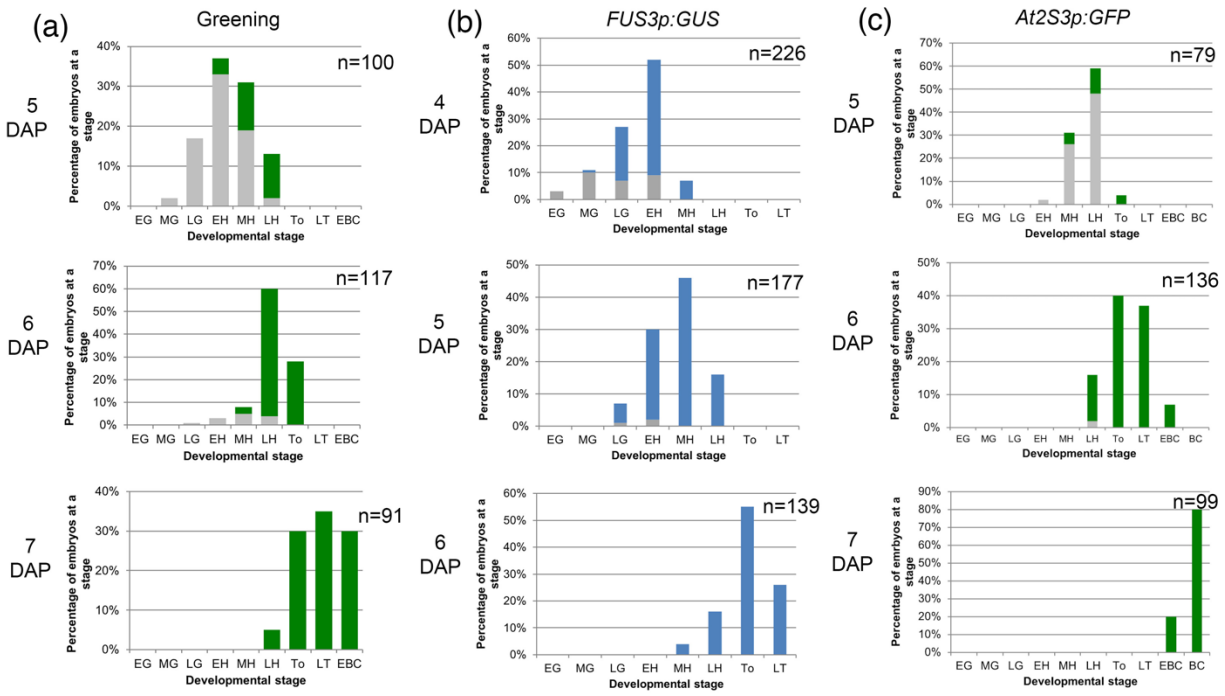

Figure S3: Greening and expression of maturation reporters in *FUS12* wild type backgrounds at different times after pollination.

(a-c) Distribution of embryo stages in *FUS12* siliques at different times after pollination. Stages: E; early; M: mid; L: late; 16C: 16-cell; G: globular; H: heart; T: torpedo (To: early/mid torpedo); BC: bent cotyledon. (a) Embryo greening. Gray bars denote white embryos, green bars green embryos. (b) Expression of *FUS3p:GUS*. Gray bars denote GUS- embryos, blue bars GUS+ embryos. (c) Expression of *At2S3p:GFP*. Gray bars denote GFP- embryos, green bars GFP+ embryos.

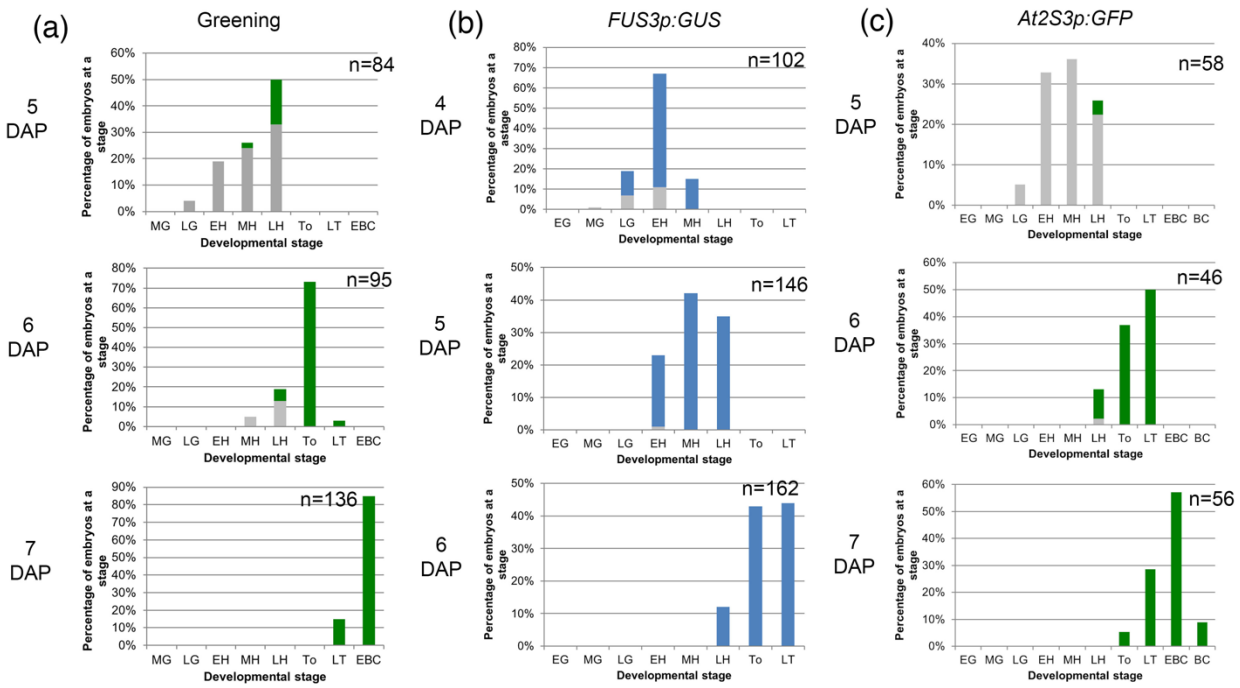

Figure S4: Greening and expression of maturation reporters in *TIL1* wild type backgrounds at different times after pollination.

(a-c) Distribution of embryo stages in *TIL1* siliques at different times after pollination. For details see legend to Figure S3.

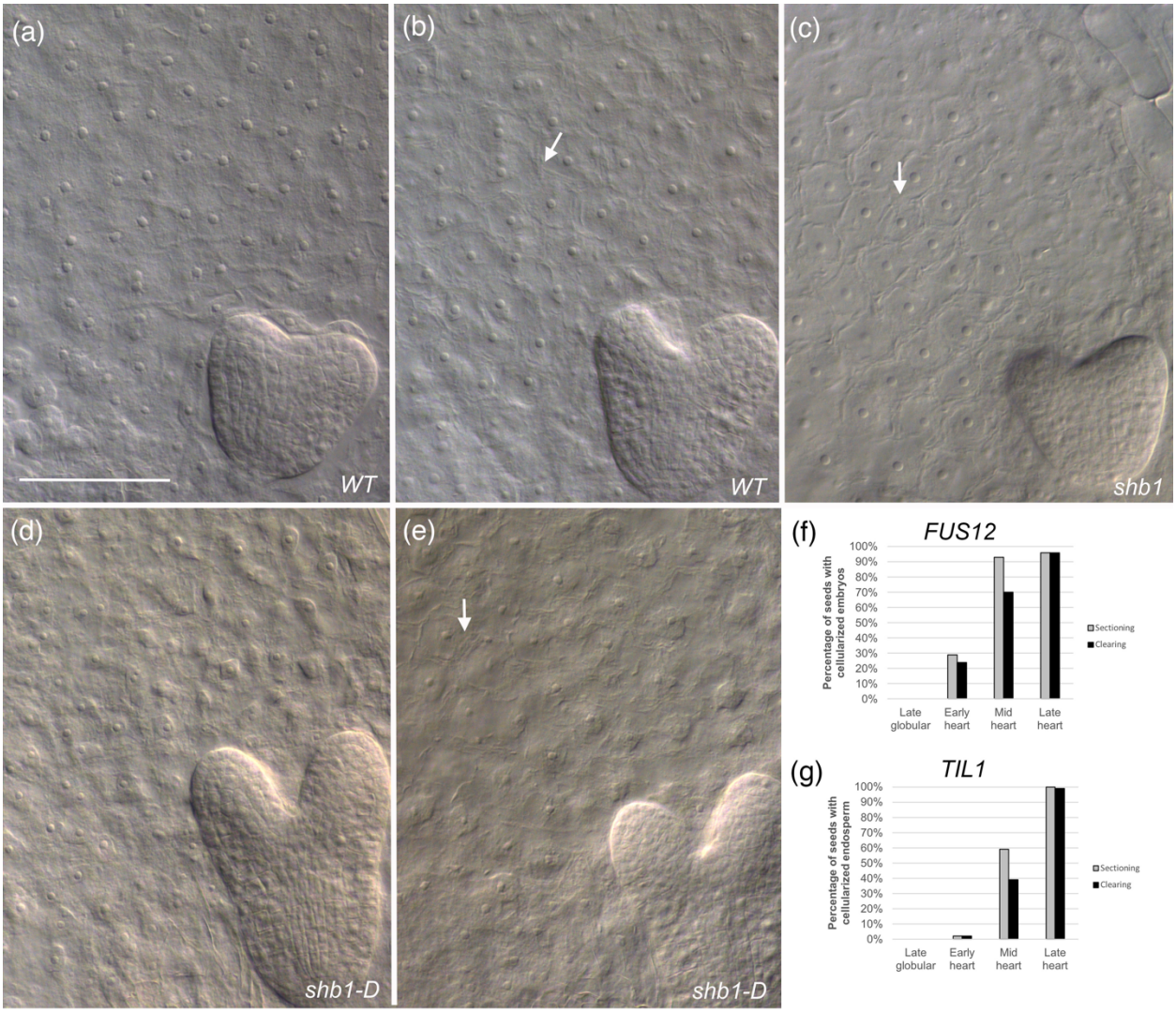

Figure S5: Endosperm cellularization

Images of seeds cleared with Hoyer's, under DIC optics. (a) Wild type heart stage, uncellularized endosperm. (b) Wild type late heart stage, cellularized endosperm. (c) *shb1* early heart stage, cellularized endosperm. (d) *shb1-D* late heart stage, uncellularized endosperm. (e) *shb1-D* very late heart stage, endosperm is partially cellularized (upper left side of the image). Cell walls in the endosperm are clearly visible in (b), (c), (e) (arrows). It was not possible to get good images of the cellularized early torpedo stage *shb1-D* seeds. Scale bar: 50 μm for all. (f, g) Side-by-side comparison of the methods used to determine endosperm cellularization: sectioning and staining of paraffin-embedded material and clearing with Hoyer's. (f) *FUS12* (wild type) background, (g) *TIL1* (wild type) background.