



Figure 4. Involvement of distinct PRC2 complexes at various stages of plant development. During the plant life cycle, distinct variants of PRC2 (see Fig. 3) control developmental progression. (A) A cleared wild-type ovule harboring the female gametophyte in its center is represented. The FIS-PRC2 represses unknown target genes that control proliferation of the central cell; consequently, in all *fis* class mutants, this cell proliferates in the absence of fertilization. Around fertilization, MEA is also required to maintain expression of the maternal *MEA^m* allele at a low level, but this activity is independent of other FIS-PRC2 components. (B) Section of a wild-type seed harboring embryo and endosperm, enclosed by the seed coat. After fertilization, the FIS-PRC2 is involved in the control of cell proliferation in embryo and endosperm. It maintains a low level of expression of the maternal *PHE1^m* allele and is involved in keeping the paternal *MEA^p* allele silent, although FIS-PRC2 only plays a minor part in its repression. Both parental alleles of *FUS3* are repressed by the FIS-PRC2. (C) Wild-type plant before flowering. The EMF-PRC2 prevents flowering by repressing *FT* and directly represses the floral genes *AG* and *STM*. (D) Wild-type plant after bolting—that is, floral induction induced by appropriate photoperiod and/or vernalization. The former relieves repression by EMF-PRC2 of *FT*, a promoter of flowering, whereas the latter leads to repression of the floral repressor *FLC*, thus inducing flowering. The maintenance of *FLC* repression depends on the VRN-PRC2. (E) Wild-type *Arabidopsis* flower. During flower organogenesis, the EMF complex regulates floral homeotic genes, such as *AG*, which determine the identity of floral organs, and *STM*, which is involved in floral organ development. (A, Courtesy of J.M. Moore and U. Grossniklaus; B, courtesy of J.-P. Vielle-Calzada and U. Grossniklaus; C,D, courtesy of D. Weigel; E, reprinted, with permission, from Page and Grossniklaus 2002, © Macmillan.)