Embryo growth in seed development

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Developing embryos of *Phaseolus vulgaris* cv. Semiole proceed through the regulated phases of growth and development involving cotyledon expansion and reserve accumulation, and axis growth. Inhibition of axis growth ensues and quiescence is maintained by abrupt desiccation. Seeds, embryos and axes removed from enclosing fruit tissues are capable of precocious germination. Factors which retard or accelerate precocious germination have been identified with a view to explaining axis growth cessation prior to drying. The role of exogenous ethylene which exerts a powerful antagonism to axis inactivity in late maturation is of particular interest. Two possible mechanisms are being investigated. Ethylene may (a) induce changes in gene expression in axis tissue or (b) cause a perturbation in prevailing water relations which allows resumption of axis growth.