Stages in the Life Cycle of Fast Plants

Stage	State	Condition	Dependency
A. seed	• quiescence (dormant embryo)	• suspended growth of embryo	• independent of the parent and many components of the environment
B. germinating seed	• germination	• awakening of growth	• dependent on environment and health of the individual
C. vegetative growth	• growth and development	• roots, stems, leaves grow rapidly, plant is sexually immature	• dependent on environment
D. immature plant	• flower bud development	• gametogenesis — reproductive [male (pollen) and female (egg)] cell production	• dependent on healthy vegetative plant
E. mature plant	• flowering • mating	• pollination — attracting or capturing pollen	• dependent on pollen carriers; bees and other insects
F. mature plant	• pollen growth	• gamete maturation • germination and growth of pollen tube	• dependent on compatibility of pollen with stigma and style
G. mature plant	• double fertilization	• union of gametes • union of sperm (n) and egg (n) to produce zygote (2n) • union of sperm (n) and fusion nucleus (2n) to produce endosperm (3n)	• dependent on compatibility and healthy plant
H. mature parent plant plus embryo	• developing fruit • developing endosperm • developing embryo	• embryogenesis — growth and development of endosperm and embryo • growth of supporting parental tissue of the fruit (pod)	• interdependency among developing embryo, endosperm, developing pod and supporting mature parental plant
I. aging parent plant plus maturing embryo	• senescence of parent • maturation of fruit • seed development	• withering of leaves of parent plant • yellowing pods, drying embryo • suspension of embryo growth, development of seed coat	• seed is becoming independent of the parent
J. dead parent plant plus seed	• death, desiccation • seed quiescence	• drying of all plant parts, dry pods will disperse seeds	• seed (embryo) is independent of parent, but is dependent on the pod and the environment for dispersal

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