

S006 How ethylene signalling affects female attractiveness
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Reproduction in flowering plants critically relies on an intricate internal fertilization process involving synergid-mediated pollen tube attraction, elimination of the first receptive synergid through programmed cell death (PCD), and sperm cell discharge. While initially a large group of pollen tubes sets out to target ovules, typically only a single pollen tube enters the female gametophyte. The underlying pollen tube block has previously been shown to require gamete-fusion dependent PCD of the second synergid. This implies that a mechanism exists to communicate the fertilization status to other cells. We have studied the role of the gaseous plant hormone ethylene during reproduction. Our results indicate that synergid PCD and gamete fusion are coupled by means of a fertilization-dependent ethylene response cascade and suggest a role for ethylene signaling during seed development.