

Bi6570 Mikroevoluce a speciace rostlin (podzim 2022)

3. Reprodukční bariéry

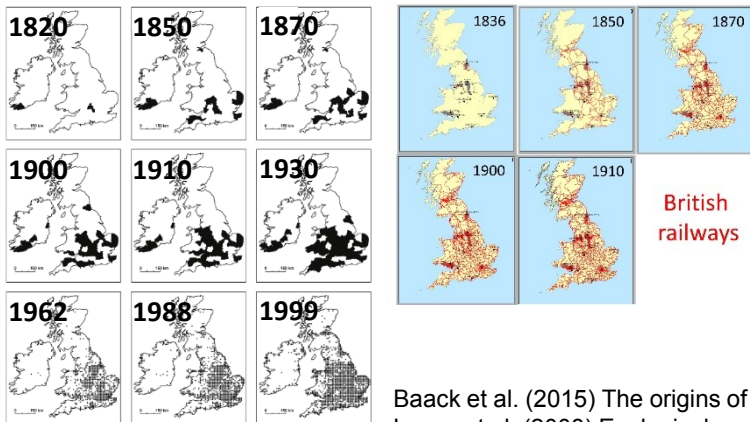
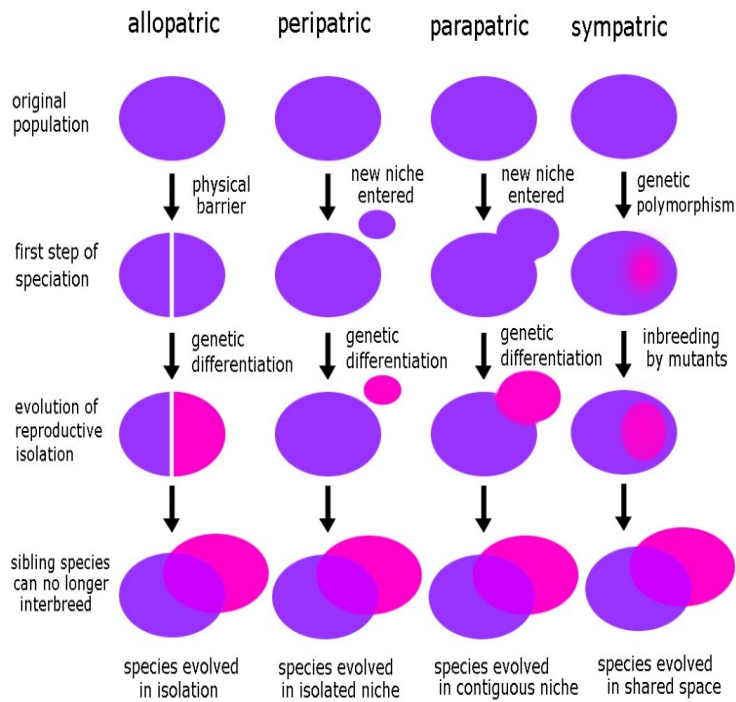
František Zedek

Bi6570 Mikroevoluce, speciace a taxonomie rostlin (podzim 2020)

3. Reprodukční bariéry

František Zedek

Plant speciation, reproductive barriers



Helianthus annuus
mesic soils

H. petiolaris
sandy soils

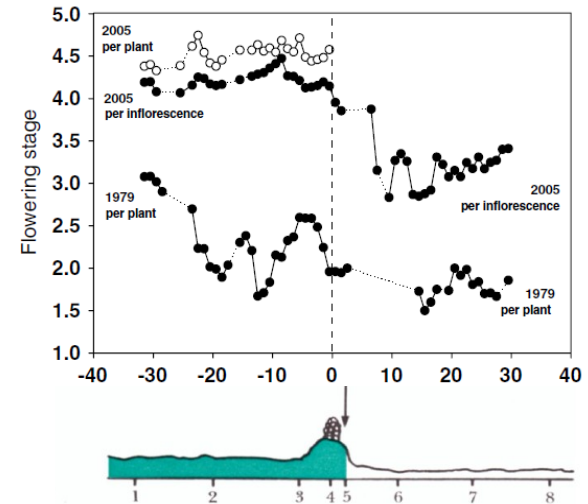
H. anomalus
sand dune

H. deserticola
desert floor

H. paradoxus
salt marsh

EMPIRICAL EVIDENCE: ECOLOGICAL ISOLATION

Reciprocal transplant experiments indicate that synthetic and natural hybrids favored in hybrid habitats.



Trelogan lead and zinc mine in Wales abandoned in 1911.

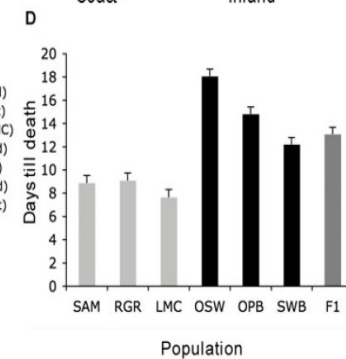
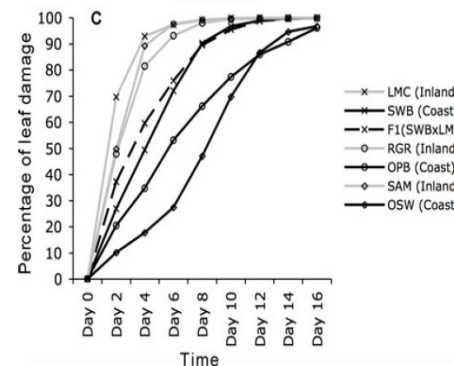
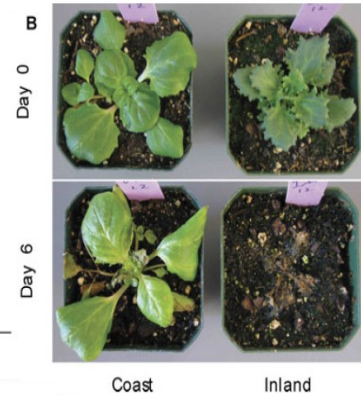
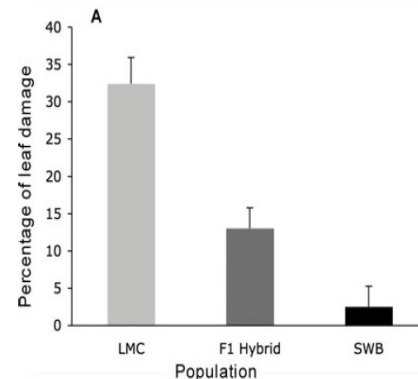
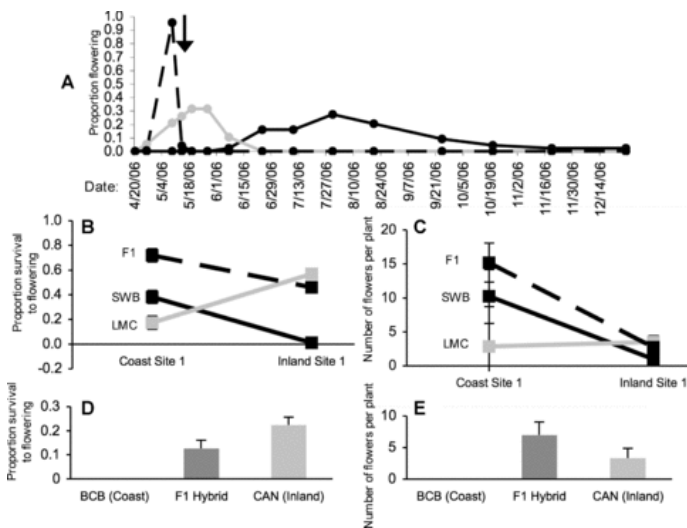
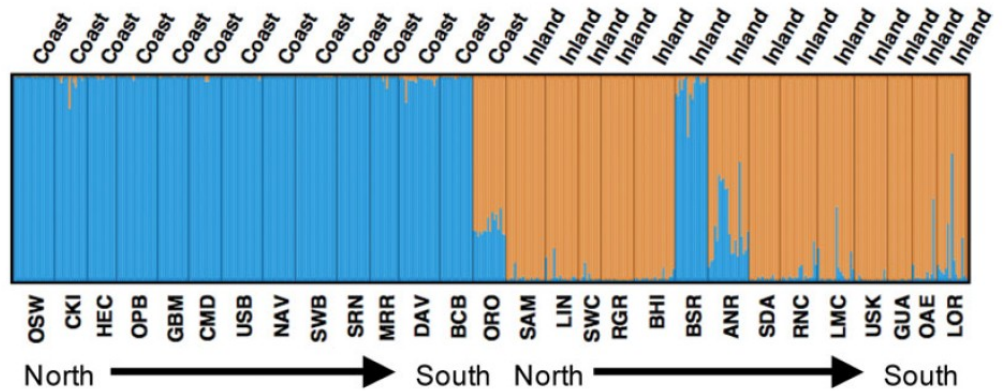
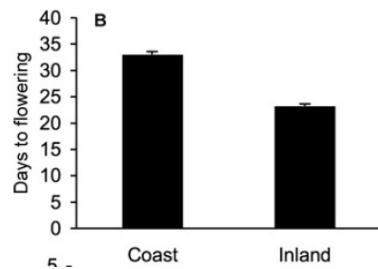
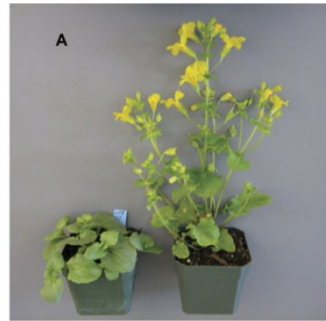
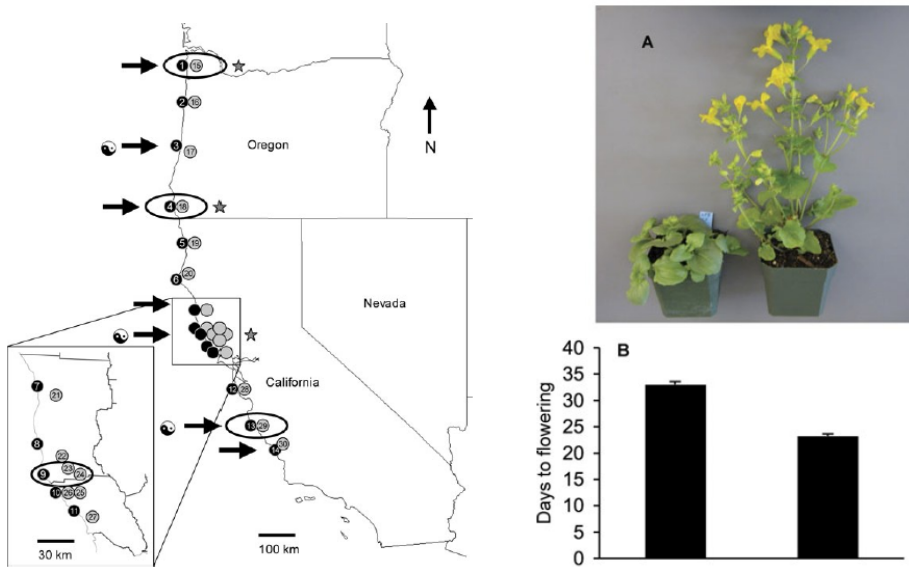
Baack et al. (2015) The origins of reproductive isolation in plants. *New Phytologist* **207**: 968–984.

Lowry et al. (2008) Ecological reproductive isolation of coast and inland races of *Mimulus guttatus*. *Evolution* **62**: 2196–2214.

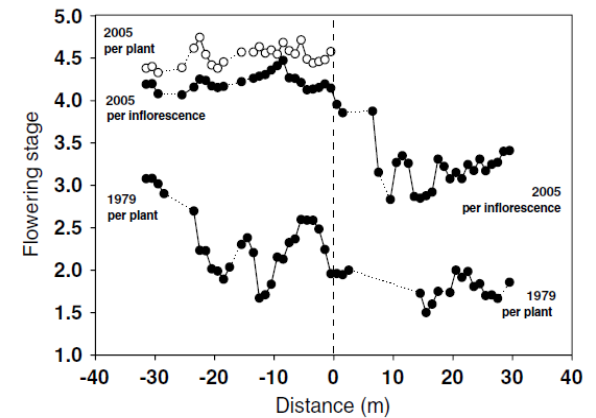
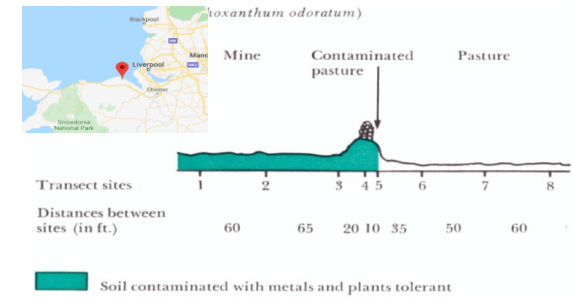
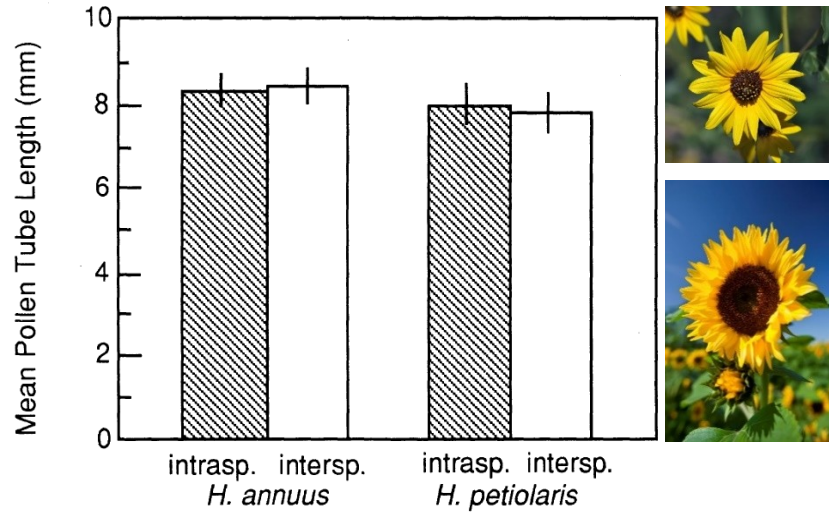
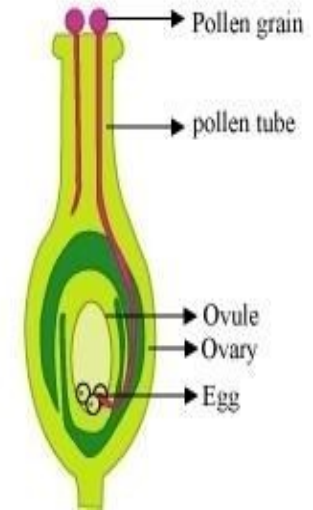
Rothfels et al. (2015) Natural hybridization between genera that diverged from each other approximately 60 million years ago. *Am. Naturalist* **185**:433–442..

Prezygotic barriers

Local adaptation causing a prezygotic barrier between coastal and inland populations of *Mimulus guttatus* (Phrymaceae)



Prezygotic barriers



Baack et al. (2015) The origins of reproductive isolation in plants. *New Phytologist* **207**: 968–984.

Bucholz et al. (1935) Pollen-Tube Growth of Ten Species of *Datura* in Interspecific Pollinations. *PNAS* **21**: 651-656.

Riesberg et al. (1995) Interspecific Pollen Competition as a Reproductive Barrier Between Sympatric Species of *Helianthus* (Asteraceae). *Am J Bot* **82**: 515-519.

Antonovics (2006) Evolution in closely adjacent plant populations X: long-term persistence of prereproductive isolation at a mine boundary. *Heredity* **97**: 33-37.