

### **One ordinary day on the meadow: The life of the anthers.**

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Pollen grains transfer from anthers to pistils is the most important step in sexual reproduction of plants. This process may be very vulnerable because pollen grains cannot be released during wet weather and in case of entomogamous plant, plans are also limited by insect activity. We studied four dominant entomogamous plant species (*Succisa pratensis*, *Centaurea jacea*, *Achillea ptarmica* and *Achillea millefolium*) and we have been demonstrated that anthers are extremely short-lived structures active only severals hours, which development is strongly affected by weather. Anthers budding is circadianly regulated process culminating in the morning. However anthers opening occurred only on sunny weather after drying of dew. In rainy weather anthers opening can be delayed or stopped. Anthers that can't manage to open during one day abort. We have been also demonstrated that different plant species have different strategy for pollen export: - anthers of *Succisa pratensis* are opening very early and quickly by dehiscence and about 90% of pollen is exported during first hour. On the other hand, anthers of plants from family *Asteraceae* form theca (tube from anthers) and pollen grains are slowly displaced from theca by growing style. This could be very important apomorphy of *Asteraceae* because this allows the extension of male activity of these flowers.

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