

## **Różnicowanie się organów generatywnych u roślin dwupiennych**

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### **Differentiation of generative organs in dioecious species**

#### **Summary**

Flowering plants are mostly hermaphroditic (i.e. bear both stamens and pistils). In the course of evolution such progenitors have repeatedly given rise to species with separate male and female individuals. Plants display a great variety of sexual systems that could be reduced to three types: 1) the two sexes occurring on separate plant; 2) both sexes occurring in the same individual; 3) a combination of the former possibilities. Gender is determined by genotype, but the mechanisms of determination are extremely diverse among species. The determinants of sexual phenotype range from sex chromosomes (*Silene latifolia*), through hormonal regulation (in *Cucumis sativa*), to pheromonal contacts (between fern gametophytes). *Salix viminalis*, as a dioecious species, revealed sexual dimorphism (occurring in a flowering stage). In their breeding as a short-rotation energy crop, an early determination of sex would be necessary to remove, for agronomic reasons, the male plants. Within *Salicaceae* a multi-locus sex determination system is the main model of sexual differentiation. Despite the fact that a great progress has been achieved in identification of genes that regulate sex expression, future efforts will be necessary to recognize these processes at the molecular level.

#### **Key words:**

sexual determination, monoecy, dioecy, sex chromosomes

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