

Floral polymorfism in fagopyrum mill

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Abstract

Study of genetic regulation of flower development is one of rapidly developing areas of floral development biology. In addition to artificial mutants, defective in the individual genes and controlling the development program of the flower, the taxa with a high level of polymorphism in the flower structure can be used as the models, one of which is the family Polygonaceae Juss. We have studied the flower structure in three different species of the genus Fagopyrum Mill, being a part of the above family. We have revealed a high flower structure variability both in number of flower bodies and in their mutual positioning in the studied species *F. esculentum*, *F. tataricum* and *F. giganteum*. The rate of typical flower structure was 60.6 to 90.1% in different specimens. In addition to typical type, we have also distinguished the most frequent types of flower structure. Changes in the number of flower bodies have most commonly affected an androecium, which sustains the theory of bipolar spatial pattern of flowers of the family Polygonaceae. We have revealed a high flower structure variability in both age-old and modern diploid and tetraploid varieties of *F. esculentum*. Short-columnar types prevail among the abnormal flowers. The greatest diversity in the flower structure was observed at the beginning of flowering. During this stage of formation, the abnormal flowers had ones with increased number of bodies prevailing; with decrease in the floral meristem volume during flowering there was observed a prevalence of abnormal flowers with signs of stamens and pistils reduction. *F. giganteum* often had such variants of flower structure with signs common to mutants defective in genes that are responsible for floral meristem formation. In addition to variability by the number of flower bodies, *F. tataricum* had a type of variability determined by underdevelopment of the outer stamens anthers with autogamous pollination, typical of this kind of buckwheat.

Keywords

Fagopyrum, Flower formula and diagram, Polymorphism and morphogenesis of a flower