

Description for the general public

Auxin is a plant hormone, that is highly dependent from tissue and molecular context. In cells of stamens and pistils of developing flowers it cooperates with miR167-regulated auxin response factors ARF6 and ARF8 and coordinates cell division and elongation, which leads to synchronized development and functioning of these flower parts. On the other hand, this hormone is involved in abscission zone formation on pedicels of flowers designated to be dropped, which results in abscission of this organ. We believe these two phenomena are interrelated and improper functioning of auxin and elements of signal transduction pathway of this hormone in pistils and stamens trigger flower abscission. This project aims to answer this question by investigation, if tissue localization of auxin as well as transcripts of *ARF6*, *ARF8*, *MIR167* in stamens and pistils is different in yellow lupine (*Lupinus luteus*) flowers undergoing abscission and maintained on plant at various stages of their development, and whether change in the patterning of these agents leads to reversal of flower fate. In the future this study will result in the development of a method for reducing the amount of falling lupine flowers which will lead to increased yield and attractiveness of this plant to farmers.