Plant development is strongly influenced by temperature. Other factors affect plant development to smaller extent. Plant development is affected by rate of enzymatic reactions which depend on temperature surrounding plant. Temperature and time are integrated into thermal time which is defined as sum of temperatures above temperature at which development ceases which is called base temperature. Cardinal temperature at which is the rate of plant development highest is called optimal temperature. When temperature exceeds optimum temperature rate of plant development, rate of development diminishes in higher rate than it increased between base and optimum temperature. Thermal time is mostly being used in agriculture for rate of development prediction, for optimizing crop yield, for prediction of particular developmental stage of weeds. There are also works that focus on wild plants. The easiest way to study temperature effect on plant development is to study leaf development. Rate of leaf appearance on the main stem and its reciprocal called phyllochron (duration separating appearance of two successive leaves) are plant development characteristics most frequently used. Use of thermal time instead of calendar days improved considerably prediction of plant phenological events. The goal of this bachelor thesis was to describe