

BLOSSOMING TIME AND RHYTHM OF THE *F.RUPICOLA* AND *F.PRATENSIS* SPECIES

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The work was dedicated for research of the blossoming rhythm of *Festuca rupicola* Heuff. and *Festuca pratensis* Huds. species in the flora of Azerbaijan. It has been identified that *F.pratensis* belongs to the group of the morning grasses, blooms between 4:00-10:00, in the condition of 30 °C temperature and 80 % of relative humidity. Although some authors include this specie to the group of twice blossoming grasses, in our researche the mass blossoming was observed in morning period. Blossoming of *F.rupicola* goes in porsion way. It repeates 5-6 time in a day. Blossoming reaches to its maximum when the ambient temperature is more than 30 degree and relative humidity is below 60%.

Keywords: *F.rupicola*, *F.pratensis*, *Festuca*, blossoming rhythm

It is determined that the blossoming features of every cereal species depend on the time of the day and weather condition, also every cereal species has certain the blossoming rhythm connected with the temperature and relative humidity. This concept was discovered at the end of XIX by Gordon and Hildebrand (Sergeyeva 1989).

Investigations showed that the daily rhythm of blossoming, if even has deviations connected with weather condition, is characteristic properties of the species and reveals changes within its certain frame. Therefore daily blossoming rhythm can be used as additional determining sign in number disputable issues of cereal taxonomy (Prokudin 1977).

The results of the study of daily blossoming rhythm are of importance not only for taxonomy and also in evolution meaning.

The study of daily blossoming rhythm of polymorph cereal species showed the antecological differences within species which reveals biological isolation within species (population, ecotype). On base of this, it was proposed that "the demarcation of daily pollination period of populations stipulates their isolations and systematic differentiations that is the beginning of sympatric speciation" (Panomaryev, Rusakova 1968, Prokudin 1977, p.13).

Then concept was studied for different species of *Festuca* genus by Panomaryov (1960), Tveretinova (1969), Xudyakova (1968), Sergeyeva (1989), Musayev (1991).

The study of the time, rhythm and frequency of the blossoming was carried out by the Ponomaryev's method (1968).

Concrete number of flower group of every previously selected species was taken under continuous observation during blossoming time of this species. The number of opened flowers is controlled in every 15-20 minutes. Temperature and humidity are measured by humid meter at the same time. The opened flowers are cut during the counting process that will not be confused with the other newly blossoming flowers.

In the research of the rhythm of blossoming of *F.pratensis* the first acts in the group of flowers were noted on 10-18 May (Graphic 1). First pollens were observed on 19-22 May. Maximum blossoming are observed at 7:00-8:00 am. This time an average temperature is 11-15°C and the relative humidity is around of 80%. The temp of blossoming is different. The whole blossoming of flower group takes 7-8 days. Sometimes additional blossoming around 2:00-4:00 pm is observed.

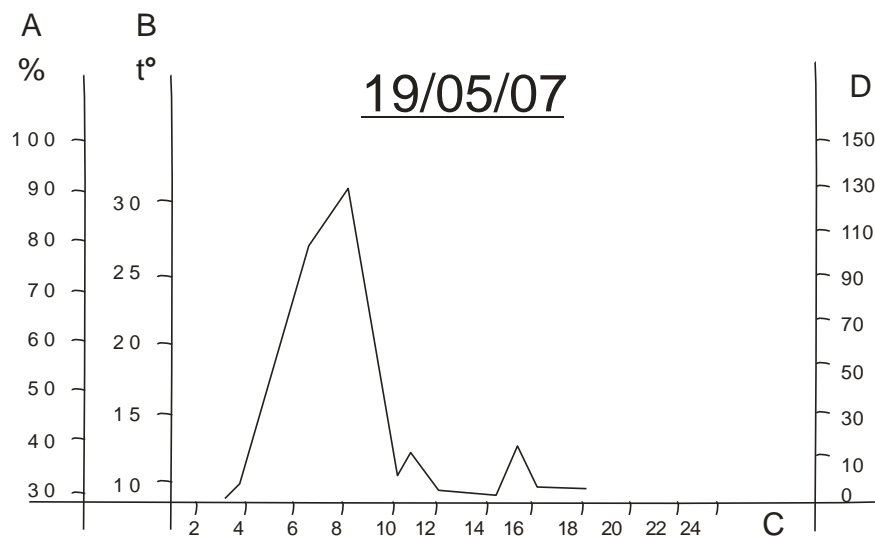
In the classification of Panomaryev *F.pratensis* is referred to both morning cereals and cereals twice blossoming per day due to abovementioned peculiarities.

The difference in blossoming period and daily rhythm of *F.pratensis* is not observed in Azerbaijan flora on various zones. But it can be noted that in East zones relatively earlier blossoming is observed.

Thus, *F.pratensis* species with characteristic mesophytic signs has blossoming

rhythm occurring at relatively low temperature and high relative humidity. It can be

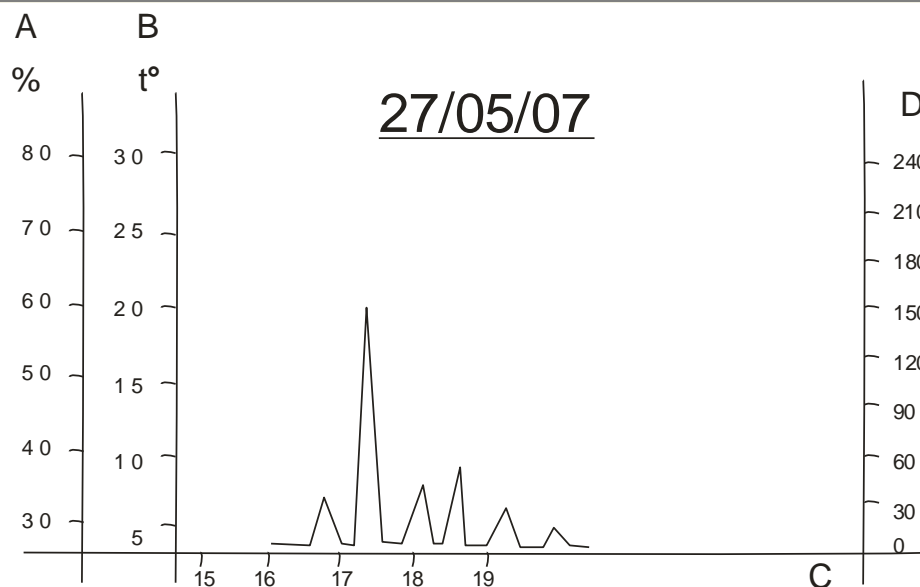
shown as graphic with parameters of day time, temperature and humidity.



Graphic 1. The blossoming rhythm and frequency of *F. pratensis*. A) Relative humidity, B) Ambient temperature, C) Hours, D) The number of flowers

The blossoming of *Festuca rupicola* Heuff occurs by portion way (Graphic 2). First, several flowers are blossomed in sepa-

rate brooms. Then, flower chaffs are separated and pollens are appeared.



Graphic 2. The blossoming rhythm and frequency of *F. rupicola*. A) Relative humidity, B) Ambient temperature, C) Hours, D) The number of flowers

About 75-90% flowers are opened in a few minutes. Then, approximately during 10 minutes the pollination is occurred.

Such a mass pollination is repeated 5-7 times in 15-20 minutes. The values of the daily blossoming rhythm for *F.rupicola* were tested at 22⁰C and 64% relative humidity.

Based on analysis of daily blossoming rhythm of *F.rupicola* can be conclude that this species shows the acute xerophytic properties. As the blossoming of *F.rupicola* occurs by portion way with intervals at the day time with very high temperature and very low relative humidity, which is the important adaptation in phylogenesis.

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