

## THE BEHAVIOUR OF SOME SPECIES OF APRICOT TREES IN THE CLIMATIC CONDITIONS CHARACTERIZING ORADEA REGION IN 2006

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### Abstract

*The experiment takes 22 species of apricot trees having different periods of ripening of the fruit. The ripening of the fruit is placed at intervals beginning with the first decade of June and going on until the last decade of July. The richest fruit crops were registered at the species: Comandor, Mamaia, Favorit, Sirena.*

**Key words:** apricot species, beginning of the flowering, end of flowering, fruit crop, trunk's section

### INTRODUCTION

The apricot tree is a species of a great value for the regions where it can be grown, being a pretentious species towards the high temperature, this being a restricting factor for the expansion of the species. Trees turn to vegetation after a period of 7-10 days with temperature higher than the biological threshold and the blooming and the forming of the fruits are realized if the temperature is reaching at least 10-12°C (Cociu V., 1993).

During the vegetation period the best temperature is of 20°C. Endurance to lower temperatures depends on the vegetation phase and each organ. The trees well prepared for winter can resist to temperatures up to -26°C, -27°C without damage (Popescu M., 1992). The buds in the phase of growing are destroyed at -12°C, -14°C; when petals appear, only some species resist at -6 degrees C open flowers freeze at -2°C, -3°C and early fruit are affected at -1°C, -2°C. The water demands of the apricot trees are limited, they being able to do very well in the regions with 450-550 mm rainfalls per year. The apricot tree is one of the most pretentious species regarding the light.

In order to ensure the necessary source of light, the apricot type is located on the most exposed soils; the shape of its top crown is chosen so that light can reach all the parts of the trunk, the direction of the lines is oriented towards north-south (Voiculescu N., I. Popescu, D., Teaci, Șt.Puiu, Gh. Amzăr, 1983). Regarding the soil, the demands of this species are reasonable, it does well on most medium and light soils; it can't stand heavy soils or those with excess water, which is one of the apricot tree's premature death causes.

The old type of apricot tree in the region of Oradea consisted in the following types: Big of Cenad, Royal, Luizet, Best of Hungary, Paviot species relatively sensitive at the variations of temperature at the beginning of the spring and not providing crops accordingly.

### MATERIAL AND METHODS

The biological material comprises 22 types of apricot trees, the experience was made in 1999 on a good, clayey soil with 30 - 40% pH 5.5 - 6.5, at a 4/4m planting distance. The climatic factors in 2006 were a yearly average temperature of 10,2 degrees C and 780mm yearly rainfall. In 2006 there weren't registered any climatic accidents, and as a result there being obtained good crops at the species referred to during the experiment.

## RESULTS AND DISCUSSION

They made observations and measurements regarding the phases of the flowering, the growing stage of the fruit, the fruit crops and the surface of the section of the trunk. Flowering at the species of apricot trees taken into consideration in the research took place between the 1st and the 9th of April presenting a maximum intensity of flowering for mark 5 (table 1).

*Table 1*

Phases of flowering and ripening stage of apricots in 2006

| No crt | Ranges                  | Beginning of the flowering | End of flowering | Intensity of flowering | Crop ripen    |                |
|--------|-------------------------|----------------------------|------------------|------------------------|---------------|----------------|
|        |                         |                            |                  |                        | Date          | Number of days |
| 1.     | Mamaia                  | 5.04                       | 8.04             | 5                      | 15-26.07      | 104            |
| 2.     | Silvana                 | 5.04                       | 8.04             | 5                      | 20-30.07      | 106            |
| 3.     | Sirena                  | 5.04                       | 10.04            | 5                      | 20-30.07      | 111            |
| 4.     | Comandor                | 6.04                       | 11.04            | 5                      | 20.07         | 106            |
| 5.     | Favorit                 | 4.04                       | 9.04             | 5                      | 26-30.07      | 105            |
| 6.     | Litoral                 | 4.04                       | 8.04             | 5                      | 26-30.07      | 111            |
| 7.     | Umberto                 | 9.04                       | 14.04            | 5                      | 20-26.07      | 102            |
| 8.     | Callatis                | 4.04                       | 8.04             | 5                      | 15-26.07      | 103            |
| 9.     | Excelsior               | 4.04                       | 8.04             | 5                      | 25.07         | 109            |
| 10.    | Selena                  | 4.04                       | 8.04             | 5                      | 5.07          | 98             |
| 11.    | Olimp                   | 5.04                       | 8.04             | 5                      | 15-20.07      | 100            |
| 12.    | Goldrich                | 3.04                       | 7.04             | 5                      | 15-20.07      | 101            |
| 13.    | Venus                   | 3.04                       | 7.04             | 5                      | 15.0715-20.07 | 99             |
| 14.    | Cea mai bună de Ungaria | 1.04                       | 7.04             | 5                      | 15.07         | 102            |
| 15.    | Skaha                   | 3.04                       | 7.04             | 5                      | 20-26.07      | 99             |
| 16.    | Sulina                  | 3.04                       | 7.04             | 5                      | 6-15.07       | 99             |
| 17.    | Saturn                  | 3.04                       | 9.04             | 5                      | 6-15.07       | 92             |
| 18.    | CR 2-63                 | 3.04                       | 8.04             | 5                      | 15.07         | 94             |
| 19.    | Neptun                  | 3.04                       | 7.04             | 5                      | 26.07         | 99             |
| 20.    | Sulmona                 | 4.04                       | 7.04             | 5                      | 26.06-6.07    | 110            |
| 21.    | Harcot                  | 3.04                       | 7.04             | 5                      | 26.06-6.07    | 110            |
| 22.    | NJA 19                  | 3.04                       | 7.04             | 5                      | 26.06-06.07   | 110            |

Very good crops were registered at the following types: Comandor (23 t/ha), Mamaia (20,0 t/ha), Favorit (19,4 t/ha ), Sirena (19,0 t/ha), poor crops were registered at Goldrich (9,7 t/ha), Sulmona (10,6 t/ha) types (table 2). The end of flowering was between 7<sup>th</sup> and 14<sup>th</sup> of April. The earliest was Best of Hungary type 1st-7<sup>th</sup> of April and the last was Umberto 9<sup>th</sup>-14<sup>th</sup> of April. The ripening of the fruit took place between the 2<sup>nd</sup> of June and the 30<sup>th</sup> of July for the Harcot and NJA19 types and between the 26<sup>th</sup>- 30<sup>th</sup> for Selena, Sulmona, Litoral, Callatis types. Fruit crop was between 15.5 kg tree for Goldrich type and 37.2 kg tree Comandor type.

Table 2

## Fruit crops at the species of apricot trees

| No crt                          | Range                   | Fruit crop kg/tree | Fruit crop t/ha | Difference compared to witness kg/tree | Difference compared to witness t/ha |
|---------------------------------|-------------------------|--------------------|-----------------|--|-------------------------------------|
| 1.                              | Mamaia                  | 32,0               | 20,0            | +9,7                                   | +6,1                                |
| 2.                              | Silvana                 | 25,0               | 15,6            | +2,7                                   | +1,7                                |
| 3.                              | Sirena                  | 30,5               | 19,0            | +8,2                                   | +5,1                                |
| 4.                              | Comandor                | 37,2               | 23,2            | +14,9                                  | +9,3                                |
| 5.                              | Favorit                 | 31,0               | 19,4            | +8,7                                   | +5,5                                |
| 6.                              | Litoral                 | 21,7               | 13,6            | -0,6                                   | -0,3                                |
| 7.                              | Umberto                 | 20,0               | 12,5            | -2,3                                   | -1,4                                |
| 8.                              | Callatis                | 25,5               | 15,9            | +3,2                                   | +2,0                                |
| 9.                              | Excelsior               | 20,0               | 12,5            | -2,3                                   | -1,4                                |
| Average (Witness of experiment) |                         | 22,3               | 13,9            | -                                      | -                                   |
| 10.                             | Selena                  | 18,6               | 11,6            | -3,7                                   | -2,3                                |
| 11.                             | Olimp                   | 21,7               | 13,6            | -0,6                                   | -0,3                                |
| 12.                             | Goldrich                | 15,5               | 9,7             | -6,8                                   | -4,2                                |
| 13.                             | Venus                   | 18,6               | 11,6            | -3,7                                   | -2,3                                |
| 14.                             | Cea mai bună de Ungaria | 19,2               | 12,0            | -3,1                                   | -1,9                                |
| 15.                             | Skaha                   | 25,5               | 15,9            | +3,2                                   | +2,0                                |
| 16.                             | Sulina                  | 25,6               | 16,0            | +3,3                                   | +2,1                                |
| 17.                             | Saturn                  | 18,6               | 11,6            | -3,7                                   | -2,3                                |
| 18.                             | CR2-63                  | 18,0               | 11,2            | -4,3                                   | -2,7                                |
| 19.                             | Neptun                  | 18,0               | 11,2            | -4,3                                   | -2,2                                |
| 20.                             | Sulmona                 | 17,0               | 10,6            | -5,3                                   | -3,3                                |
| 21.                             | Harcot                  | 18,0               | 11,2            | -4,3                                   | -2,7                                |
| 22.                             | NJA19                   | 12,5               | 7,8             | -9,8                                   | -6,1                                |

The surface of the trunk's section in 2006, the 5th year from planting the surface, the trunk section was between 37,7 cm<sup>2</sup> at Neptun type and 91,5 cm<sup>2</sup> for Mamaia type (table 3). The average surface (Witness) of the section of the trunk was 63,0cm<sup>2</sup> and the types Mamaia, Umberto, Best of Hungary, Saturn, Sulina, Skaha had the surface of the trunk's section larger than the witness with 8,3 cm<sup>2</sup> to 32,1 cm<sup>2</sup>.

The other 12 types having the surface of the trunk's section smaller than that of the Witness, the difference between them is from -0,2cm<sup>2</sup> and -25,3cm<sup>2</sup>.

Table 3

The surface of the trunk's section at the species of apricot trees studied in 2006

| No<br>crt | Ranges                          | Surface of the trunk's section |                           |
|-----------|---------------------------------|--------------------------------|---------------------------|
|           |                                 | cm2                            | Difference to the witness |
| 1.        | Mamaia                          | 95,1                           | +32,1                     |
| 2.        | Silvana                         | 78,2                           | +15,2                     |
| 3.        | Sirena                          | 76,9                           | -20,9                     |
| 4.        | Comandor                        | 42,1                           | -20,9                     |
| 5.        | Favorit                         | 74,6                           | +11,6                     |
| 6.        | Litoral                         | 54,6                           | -8,4                      |
| 7.        | Umberto                         | 92,1                           | +29,1                     |
| 8.        | Callatis                        | 62,8                           | -0,2                      |
| 9.        | Excelsior                       | 58,2                           | -4,8                      |
| 10.       | Selena                          | 60,7                           | -2,3                      |
|           | Average (Witness of experiment) | 63,0                           | -                         |
| 11.       | Olimp                           | 48,2                           | -14,8                     |
| 12.       | Goldrich                        | 43,2                           | -19,8                     |
| 13.       | Venus                           | 53,1                           | -9,9                      |
| 14.       | Cea mai bună de Ungaria         | 74,7                           | +11,7                     |
| 15.       | Skaha                           | 71,3                           | +8,3                      |
| 16.       | Sulina                          | 71,9                           | +8,9                      |
| 17.       | Saturn                          | 73,9                           | +10,9                     |
| 18.       | CR2-63                          | 40,8                           | -22,2                     |
| 19.       | Neptun                          | 37,7                           | -25,3                     |
| 20.       | Sulmona                         | 50,9                           | -12,1                     |
| 21.       | Harcot                          | 48,2                           | -11,8                     |
| 22.       | NJA19                           | 77,6                           | +14,6                     |

## CONCLUSIONS

The flowering took place in the 1st and the 2nd decade of April for about 4-5 days depending on the species. The ripening of the fruit was placed at intervals during 30-31 days beginning with the last decade of June and going on until the last decade of July.

Among the species that have been studied, the most productive proved to be the Comandor with a crop of 37,2 kg/tree, Mamaia with 32,0kg/tree, Favorit with 31 kg/tree, being species with late ripening; the species with early ripening were Harcot 18 kg/tree, CR 2-63 18 kg/tree.

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