



The Vegetable Growth Development in Viișoara and its Impact on the Rural Population

Camelia KANTOR
„Babeș-Bolyai” University, Cluj-Napoca, Romania



Introduction

The vegetable growth started to be considered a science and to develop at the same time with other new domains, its development being also imposed as a measure of satisfying the market and the growing number of the consumers. As a consequence, the vegetable growth developed a lot in the last few years. This can be observed by studying the increase of the annual production and the size of the under cropped areas at the same time with the apparition of new growing specialized and advanced systems providing working places for qualified people. If at the beginning the vegetable growth crop was to take a plant from the spontaneous flora and cultivate it on the people's farms, selecting along the years the most productive and resistant to diseases one, later on, new varieties of crops have been created. Nowadays, thanks to the new advanced technologies, it is possible to practice different types of crops more and more complex which need special arrangements and optimal conditions for the plants to grow and improve. Viișoara commune is situated at the confluence of the Large Valley with the Arieș River having a population of around 8.000 inhabitants. Its name (viișoara = little vineyard) comes from the old vineyards that covered the terraces of the structural steep area on the left part of the Arieș River, a few kilometres distance to the village. The village still has an agricultural profile, an increasing number of its inhabitants starting a business by growing vegetables in order to find another alternative to the half-pay solution of the Wires Industry in Câmpia Turzii, where most of the people were working. From the climate point of view, the corridor is affected by the west winds that enter all the Mureș way and through the Poarta Someșană plus the foehn manifestations very common for this area. The area has a moderate-continental climate, with a temperature average of 9,01°C, rainfalls annual average of 51,71mm/m² and the annual humidity average of 88,3%. Spring comes early, but the air streams are still sensed on the Someș Valley. Autumn is usually long, warm and dry. The average and extreme data of the first and the last frost are presented in October, 8th and April, 24th (table 1).

Table 1. The average and extreme data of the first and last frost in Viișoara commune.

Average data	First frost		Average data	Last frost	
	The earliest	The latest		The earliest	The latest
8. X	18. X 1999	13. IV 2000	24. IV	10. IV 2000	7. V 1999

The frost period lasts for around 167 days, the summer has some warm months and winter often registers temperatures of below 25°C.

Viișoara commune is situated in a below humidity area, with an average of annual rainfalls of 51, 71 mm/m². The repartition of the rainfalls during months is unequal, alternating from one year to another.

The rainfalls monthly maximum average quantity registered in July is of 96, 5 mm/ m², and that in March of 21,11 mm/ m². The atmospheric humidity varies from one season to another, the upper value being registered during winter 82-85% and the lower during summer 73-77%. The annual average is of 88,3%. Viisoara area is characterized by a high degree of sky covering. The total number of the days with a covered sky in a year is of 131,6 average and of 111,4 for the days with a clear sky. The sum of the sunny hours is of 1542 in average, the maximum in July with 228 hours, and the minimum in December with 43 hours. The wind blows from all directions, especially from the North West with a frequency of 19,3% and an intensity of 3,8 m/s. The winds from the South and from the North have a lower influence.

As a consequence of the climacteric conditions, the main crops in Viisoara commune have been represented for a long time by the potatoes and early cabbage crops (the Gloria cabbage). Due to the vegetable growth development and the apparition of the vegetable hybrids, people in this area started to cultivate other species obtaining more profitable crops: early cabbage, cauliflower, aubergines, peppers, strawberries, root crops.

In order to better inform and teach people about what and how they can under crop their land, paid PHARE courses have been organized, lectured by teachers from the Cluj-Napoca Horticulture Faculty. The main reason was to provide professional training to the producers regarding the crops technologies for the vegetables growth in Viisoara commune. In the end of these courses, after passing an exam, the participants received diplomas.

In order to obtain a better profit from vegetables growth the producers have to reanalyse the under crop and improve it by giving up the less profitable crops that need hard work and too many people working, such as the early potato under crop, and replace it with other more profitable crops:

- *the early cabbage* crop, by using very early and early cabbage hybrids;
- *the salad* crop;
- *the cauliflower* crop, by using very early and early cauliflower hybrids;
- *radish and green onion*.

The early cabbage is seeded at the end of January and the beginning of February in multiplication greenhouses, solariums with bio combustible beds or hotbeds, with a necessary of 300 g of seeds to produce enough transplants for an area of 1 yield, dropped again after 10-12 days. The planting has to be realized between March, 15th and April, 5th at a 50 cm distance between the rows and 30 cm between the plants, establishing a thickness of 65-70 thousand pl/yield. The harvest starts when the heads have the specific form and weight for the under cropped sort. It can start in May, 20th -30th, until June, 25th -30th.

The obtained production is of 30-40 t/ yield. After the early cabbage crop, it is possible to plant autumn cucumbers, beans and spinach for autumn.

The potato early crop represents the main spring crop in the Viisoara area. In order to plant early potatoes, some works have to be made when preparing the planting material, such as:

- *sorting, obtaining the same brand* in order to eliminate the sick potatoes;
- *disinfection* is made by introducing the potatoes in a formalin solution of 0,5% for 5 minutes, with 1 L of solution being possible to disinfect 5-8 Kg potatoes;
- *germinating* period starts 30-40 days before planting the crop, in spaces like: warehouses, cellars and greenhouses etc. Another method of germination could be to maintain the potatoes in dark conditions at a temperature of 10-12° C for a longer period of time.

The first crop is done in spring, between March, 10th and April, 10th. It can be done manually for the germinating potatoes or mechanized for the non-mechanized ones, obtaining a thickness of 55-70 thousand plants/ha yield, with a necessary quantity of 3.500 kg/yield of potatoes of 30-45 mm diameter.

The harvest begins after 15th of May and can be extended until the end of June. It has 12,5 t/ha yield. The early potato crop can be followed by a vegetable crop such as autumn cabbage or autumn and spring cereals.

After the short presentation of these two crops, one can conclude that:

- after the acquisition of the necessary seeds used to form a crop the advantage is clearly in favour of the early cabbage; even if we buy hybrid seeds, which is more expensive, we still need only 300 g of seeds to form a crop yield;

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- to set up an early potato crop more storing, sorting and germinating space is needed;
- the potato crop needs a lot of working potential and many expenses;
- on the same surface we have approximately the same number of plants, but the early cabbage production is of 30-40 t/ha, while the potato production is of 12t/ha;
- when comparing the advantages of earlier germination, the potato crop doesn't present any advantage, both crops being valued at about the same period of the year.

The inhabitants of Viişoara commune should replace the main autumn crop in this area, represented by the autumn cabbage, in order to increase their income and take advantages from using the land, this crop being successfully replaced by the autumn cucumbers, beans and courgette.

The autumn cucumbers crop is represented by the cornichon type with an early maturity period, high yielding, this crop following the clearing of the previous crop (the early cabbage crop) made in June through direct sowing. In order to form the new crop, the land that is about to be sowed is being firstly ploughed at 18-20 cm and then chemically fertilized. The necessary seed for a crop of 1 ha is of 5-7 kg, sowed directly. A more extended thickness is being insured for the plants, the production level being influenced by the unfavourable autumn conditions. Another method that intended to increase the production is that of using hybrid seeds in order to insure a better production, early maturity, more uniform fruits, with a more commercial aspect and higher resistance to certain diseases and pest.

First of all, the bed is sowed on 2 or 3 rows according to the planting schema 70+40+40/10. After the sowing it has to be irrigated in order to avoid physiological shock phenomenon, it is watered in the morning, evening and during the night.

The treatments against the diseases are applied so to prevent and cure the most frequent disease.

The harvest is done every 2 days, starting with the first days of September, continuing till the first days of frost.

The production is of 5-15 t/ha depending on the quantities of the cucumbers harvest. The harvest is usually made on a 6-9 cm distance. They can be used as pickles.

For the moment the main autumn crop is that of the cabbage. This crop is more developed in hotbeds and less in direct field sowing.

For the production of the transplant the sowing is made between April, 25th and May, 20th for the early sorts and hybrids and between May, 25th and June, 5th for the medium late sorts, the transplant must have 35-40 days. The planting schema used is 70+80/26-30 cm on modelled land and 75*26-30 cm on non- modelled land, with a 45-50 thousand plants/ha thickness. The harvest can be done starting with June, 1st -15th for the sorts with a longer period of vegetation and June, 20th -30th for the medium late one. The crop formed by direct sowing is made during two epochs, the first one at the beginning of April and the second one in the last days of June.

Supplementary watering is to be made if needed, the number of the weeding increasing as a consequence of the rapid development of the weed. The realized production is between 50 and 60 t/ha.

These would be the advantages of the autumn cucumbers crop upon the autumn cabbage:

- in order to form the cabbage crop more transplants are needed, while the cucumbers are directly sowed on the field;
- more workers are needed for the cabbage crop, starting from the sowing and until the harvest;
- the existence of a better market for the autumn cucumbers as compared to the autumn cabbage market.

Conclusions

By replacing the early potato and the autumn cabbage crops with the spring cabbage and the autumn cucumber crops, people inhabiting Viişoara commune would beneficiate of

more advantages such as using less workers, and obtaining approximately the same production on the same area, with the possibility of a better market and prices that could bring a bigger profit.

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