Results of varietal testing of peking cabbage with a repeated planting in Uzbekistan

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Abstract - Peking cabbage is widespread in the countries of South-East Asia. For Uzbekistan, it is a little-known culture. In connection with this, the variety testing of 8 hybrids and 2 varieties of this foreign selection culture was carried out. By results of researches it was revealed that hybrids Sceo Jin F1 and Monoko F1 are the most productive and early ripening.

Key Words: Peking cabbage, sprouts, average head weight, age, variety, hybrid, yield.

1. INTRODUCTION

The Peking cabbage has a high content of nutrients and biologically active substances. This determines its high value as a dietary and curative-prophylactic product. The consumption of Peking cabbage affects digestion and human health.

In the northern provinces of China, the share of Peking cabbage in the consumption of vegetables by the population in the winter months is up to 80%. In Japan, the area under it is 30,000 hectares, in Korea about 70,000, in Germany in certain years it grows to 1,000 hectares. [5,6]

As a cold-resistant culture, Peking cabbage in Uzbekistan is grown in a limited area, mainly in the summer-autumn period when the formation of cabbages occurs during the autumn cool period.

The most important element of the technology of cultivation of any agricultural culture is the proper selection of varieties and hybrids. On the importance of variety in improving yield and quality of Peking cabbage production reported in many scientific investigations. [4,5,6]

The assortment of Peking cabbage in Uzbekistan is not large. The "State register of agricultural crops recommended for sowing on the territory of the Republic of Uzbekistan" includes the Russian variety Xibinskaya and Japanese hybrids Cha-cha F1 and Yuki F1, which are regionalized on the basis of state variety during the spring planting period.

Studies on the selection of varieties of Peking cabbage for repeated planting in Uzbekistan were not conducted. Considering this and the fact that the cultivation of this culture in the summer-autumn period is becoming more widespread, we conducted research in this direction.

2. MATERIALS AND METHODS

Testing of varieties and hybrids of Peking cabbage in the repeated culture was conducted in 2015-2017 in the department of vegetable growing, melon growing and potato growing of Tashkent State Agrarian University. Field experiments were laid on the experimental and investigational base of the research institute of plant growing located in the Qibray district of the Tashkent region.

The soil of the experimental land is located on the upper terrace of the Chirchiq River and is represented by unsealed typical serozem with a deep (6-8 m) groundwater occurrence. [2]

The humus content is 0.86-1.07, the total nitrogen is 0.083-0.101, the phosphorus is 0.092-0.129, and the gross potassium is 1.60-1.80%.

The climate of the zone is continental, dry with a dry hot summer and a humid, unstable winter. It is characterized by large temperature changes in the annual and daily cycles. Aridity is expressed in a small...
amount of precipitation (250-500 ml per year) and precipitation of them mainly in winter-spring period.[2,7]

The temperature regime of air over the years of research was close to the average long-term data with small fluctuations in years. The hottest month was July 2017, the average daily air temperature exceeded the average annual average by 0.8-1.2 °C.

When laying down the experience, they were guided by the method of field experience of B.A. Dospehov. [3]

The subjects of the study were 2 varieties and 8 hybrids of Peking cabbage of foreign selection. The standard was the Russian variety Kibinskaya, which was regionalized in Uzbekistan.

Sprouts of Peking cabbage were grown in a pottery way. At the age of 30 days, the seedlings were planted according to the scheme of 70×30 cm. Variety testing was carried out in 4-fold repetition with the area of the registered plots of 7 m², plots of two rows with a length of 5 m.

For each variety, the dates of planting into the open ground, the formation of heads in 10% of the plants and the technical ripeness of the heads (in 75% of the plants) were marked.

The harvested heads were sorted into commodity and non-commodity items at each collection, each fraction was weighed and counted separately. By weight and number of heads, the commodity and non-commodity yields and the average weight of the head were determined.

3. DISCUSSIONS AND METHODS

It was stated that the Seo Jin F₁ hybrid was the earliest entry into fruiting (from 6 to 19 October) and a friendly harvest (within 13 days). Close to him in early ripeness were hybrids of Monoko F₁, Koraenge F₁, and grade Goblet, whose products began to ripen on October 20-25, and harvest lasted up to 11-14 days. The regioned variety Xibinskaya, hybrids Yuki F₁ and Cha-cha F₁ as well as the Jang Won F₁ hybrid were later ripening. They began fruiting from October 31 to November 7 and their harvest lasted 15-17 days. Hybrids Chunchyubai F₁ and Za Jiao F₁ began fruiting on October 25-28, and their harvest lasted for 13-14 days (Tab 1).

Table 1.

<table>
<thead>
<tr>
<th>Varieties and hybrids</th>
<th>Date of first and last collection</th>
<th>Number of leaves, per set</th>
<th>Average weight of the head, kg</th>
<th>Marketable yield, t/ha</th>
<th>Average % t/ha</th>
<th>k/st.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Xibinskaya st</td>
<td>7/XI-23/XI</td>
<td>24</td>
<td>0,8</td>
<td>20/15</td>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td>Bokal</td>
<td>23/XI-6/XI</td>
<td>18</td>
<td>1,4</td>
<td>20/16</td>
<td>18</td>
<td>5,9</td>
</tr>
<tr>
<td>Jang Won F₁</td>
<td>31/XI-16/XI</td>
<td>31</td>
<td>2,7</td>
<td>20/17</td>
<td>26</td>
<td>0,4</td>
</tr>
<tr>
<td>Cha-cha F₁</td>
<td>3/XI-19/XI</td>
<td>24</td>
<td>1,2</td>
<td>20/16</td>
<td>14</td>
<td>8,8</td>
</tr>
<tr>
<td>Yuki F₁</td>
<td>6/XI-23/XI</td>
<td>28</td>
<td>1,3</td>
<td>20/16</td>
<td>16</td>
<td>8,2</td>
</tr>
<tr>
<td>Seo Jin F₁</td>
<td>6/XI-19/X</td>
<td>30</td>
<td>2,1</td>
<td>20/16</td>
<td>28</td>
<td>8,2</td>
</tr>
<tr>
<td>Monoko F₁</td>
<td>20/XI-31/X</td>
<td>28</td>
<td>2,7</td>
<td>20/16</td>
<td>27</td>
<td>2,7</td>
</tr>
<tr>
<td>Koraenge F₁</td>
<td>20/XI-3/X</td>
<td>3</td>
<td>1,8</td>
<td>20/16</td>
<td>23</td>
<td>6,0</td>
</tr>
</tbody>
</table>

heads and the commercial yield of varieties and hybrids of Peking cabbage in the re-culture (2015-2017)

The time frames for the receipt of products, the number of leaves, the average weight of
It was also found that all the tested varieties, except for the variety Bokal, were superior to the standard variety in the number of leaves formed, the average weight of the heads being formed, tested variety and the hybrids weight without exception exceeded the standard.

By the number of leaves, the hybrids Jang Won F₁, Koraenge F₁, Za Jiao F₁, Seo Jin F₁ were allocated by us is quite obvious. The highest yield is 23-26 thousand USA dollars. This shows that the economic efficiency of cultivation of the hybrids allocated by us is quite obvious.

4. CONCLUSION

1. All tested varieties exceed the standard variety according to the average weight of the heads being formed and the yield.

2. The most fast ripening were the F₁ Seo Jin, Monoko F₁ and Koraenge F₁ hybrids. Regioned in Uzbekistan Xibinskaya variety and the Cha-cha F₁ hybrid and the Yuki F₁ are the most late-ripening ones.

3. Seo Jin F₁ and Monoko F₁ hybrids are recommended as the most productive and early-maturing for cultivation in Uzbekistan’s repeated culture.

REFERENCES:

1. State register of agricultural crops recommended for sowing in the territory of the Republic of Uzbekistan-Tashkent. MSH, 2018, p. 34.


