BIOLOGICAL AND MORPHOLOGICAL CHARACTERISTICS OF POTATOES

Pirimqulova Muxabbat Xayitovna
Termez Institute of Agrotechnology and Innovative Development
Mamarajabov Samandarbek Faxriddinovich
Termez Institute of Agrotechnology and Innovative Development

https://doi.org/10.5281/zenodo.7110460

Abstract. *This article contains information about the morphological, biological, physiological characteristics of potatoes.In addition, brief information is given about the history of the emergence and cultivation of potatoes.*

Keywords: *potatoes (lot. Solanum tuberósum), truffle, species plantarum, solanine, chernozem, sod-podzolic, gray forest, vitamins v1, v2, v6, c, rr, d, carotene, nitrogen, phosphorus, potassium, centners.*

БИОЛОГИЧЕСКАЯ И МОРФОЛОГИЧЕСКАЯ ХАРАКТЕРИСТИКА КАРТОФЕЛЯ

Аннотация. *В данной статье приведены сведения о морфологических, биологических, физиологических особенностях картофеля. Кроме того, даны краткие сведения об истории возникновения и возделывания картофеля.*

Ключевые слова: *картофель (лот. Solanum tuberósum), трюфель, виды plantarum, соланин, чернозем, дерново-подзолистый, серый лесной, витамины в1, в2, в6, с, рр, д, каротин, азот, фосфор, калий, центнеры.*

INTRODUCTION

Potatoes (lat. Solanum tuberosum), a type of perennial plant belonging to the genus Solanum (Solanum), belonging to the Solanaceae family . Potato tubers are an important food product. The fruit is poisonous due to the content of solanine in the fruit.The modern scientific name of potatoes was introduced into science in 1596 in the work of Caspar Baugin ‘ Botany’.Later K.Linney used the name in his work "specialties Plantarum"(in 1753).At different times, other authors created a synonym for potato species and published other scientific names.The Russian word "potato" - comes from the term kartoffel. Tartufo is a word that in turn comes from ‘Truffle’, tartufolo, in Italy. For this reason, there are many colloquial and local names for potatoes.

MATERIALS AND METHODS

Botanical and morphological features:

The potato plant is 50-80 cm tall, with 3-6 stems.In the lower ground part of the stem, underground branches appear - begonias potatoes on stolons. Potatoes are white to red in color and come in a variety of shapes. A notch on the surface-new stems will sprout from their eyeballs next year. The root is of the popuk root type. The leaves are divided into pairs of feathers, from yellowish-green to dark green. The flower is 2-sex, white, light purple in color, 2-3, sometimes 4. In the conditions of Uzbekistan, flower sheaths of many varieties of potatoes are shed and do not bloom. Pollinated by itself and from the outside.The STEM is bare, ribbed. Part of the stem immersed in the soil forms long shoots (15-20 in length, 40-50 CM in some varieties). In the underground part of the stem, underground shoots grow from the axils of primitive leaves, giving rise to new tubers (modified shoots). At the ends of the stolons, tubers develop, which are essentially nothing more than swollen buds, the entire mass of which consists of cells with a thin-walled edge filled with starch, and the outer part consists of a thin layer of

Cork tissue. Tubers ripen in August-September. . The fruit is a 2-sled, multi-seeded, succulent Berry.The fruit is a multi-seeded, dark green, poisonous 'Berry' with a diameter of 2 cm, similar in shape to a small tomato.The green vegetative parts of the plant contain alkaloid solanine, which protects the plant from damage by bacteria and insects. For this reason, green potato tubers cannot be eaten.

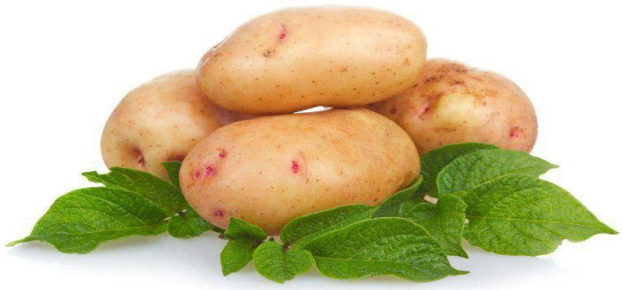
Flower Leaf Fruits root fruit

RESULTS

Biological and physiological characteristics:

Potatoes are propagated vegetatively — by small tubers or parts of tubers (and for breeding-by seeds). They are planted to a depth of 5-10 cm.The germination of Root shoots in the soil begins at 5-8 °C (the optimum temperature for potato germination is 15-20 °C). For photosynthesis, stem, leaf growth and flowering, the haror is 16-22 °C, and the tubers are constantly at night air temperature to a high temperature of 10-13 °C (20 °C and above at night) ensures its normal growing development.In plants with a sharp decrease in yield,seed develops from rootstocks. For seedlings and young plants, the temperature is damaged when it is cold -2 °C.The transpiration coefficient of one Bush of potatoes is on average 400-500 gr per week.The plant consumes a lot of water during flowering and tuberization (formation of feathers). But excess moisture is harmful to potatoes, the ripening period is 60-150 days. Potatoes are divided into fast-ripening (60-65 days from germination to maturity), medium-fast-ripening (70-80 days), medium-late-ripening (120 days), late-ripening (130-150 days) varieties, depending on the ripening periods. It is propagated by sowing the legume and seeds. Gives a bountiful harvest on lands with black or loamy soil. In the system of crop rotation of potatoes, cabbage, cucumbers, melons and legumes are grown on Loose land from crops.When growing potatoes, the seed is yarovized for 20-40 days (a niche outlet is provided in a special light room).Many nutrients are consumed to form the stem part and tubers.Potatoes especially from the period of maximum growth of the vegetative mass and the beginning of root formation, plants from 1 hectare are taken from the soil: 100-175 kg of nitrogen, 40-50 kg of phosphorus and 140-230 kg of potassium.And the yield is 200-250 centners. Potatoes are used as food and fodder, as well as raw materials in obtaining starch, alcohol, glucose, dextrin and other products. Potato thistle contains 75-80% water, 23.7% dry matter, including 17.5% starch, 1-2% protein, 0.5% sugar, 1% mineral salts, as well as vitamins V1, V2, V6, c, RR, D and provitamin A (carotene), and the peel contains a poisonous substance — solonin.The best soils for potatoes are: chernozem, sod-

podzolic, Gray forest, dried peat . By mechanical composition-Sandy, light and medium loam. The soil for potatoes should be loose: in compacted soil, small and deformed tubers are formed. The best fertilizers for our plant are potassium salts, then bone meal, lime, rotted manure (not acidic, for example, mixed with the same lime). The abundance of nitrogen fertilizers in the soil is not limited, since it does not harm the formation of tubers contributes to the rapid growth of potatoes.

DISCUSSION

Culture, distribution and history

America

The homeland of potatoes is South America, where you can still find wild potatoes. The introduction of potatoes into the crop (primarily through the exploitation of thickets) is about 9-7 thousand years ago in present-day Bolivia. The Indians not only ate potatoes, but also worshiped it, considering it an animated creature.It is noted that in the Inca calendar there was the following method of determining the day: the measure was the time spent on cooking potatoes, equal to about an hour.

Europe

Potatoes were first introduced to Europe (Spain), probably by Ciesa de Leon, in 1551, when he returned from Peru. The first evidence of the consumption of potatoes also applies to Spain: in 1573, potatoes were introduced to Seville. Later, the culture spread to Italy, Belgium, Germany, the Netherlands, France, Great Britain and other European countries. First, potatoes were considered an ornamental plant and poisonous plant in Europe. In 1806, Václav Matey Kramerius wrote in the Prague postal newspaper that "an earthen Apple is a root ball or edible potato is a Native American plant." Antoine August Parmantier finally proved that potatoes have high taste and nutritional properties. With his service, the penetration of potatoes into the French provinces, and then into other countries, began. During parmantier's lifetime, this made it

possible to overcome frequent famine in France and remove scabies. There are several dishes named after Parmantier, the main ingredient of which is potatoes.

In Uzbekistan

In the conditions of Uzbekistan, it is grown only for nutritional purposes. Early potatoes are planted in late February March, in the southern regions even in late autumn (October-November), the late may-late June. Potato rows are loosened several times during the growing season, watered every 7-10 days (7-8marta), watered every 8-10 days (10-15 times), Fed in the norm by 500-800 m2/ha. The main varieties planted in Uzbekistan: Scorpio - was issued at the Uzbek Institute of scientific research on vegetable, vegetable crops and potato growing and zoned in the Republic since 1996. Medium-sized, scaly red, Yeti white, with deeper pores, rounded ,average weight of 100-130gr, Zarafshan — created at the Samarkand Agricultural Institute and zoned from 1985, fast-growing, fertile, low-starch varieties began to be planted in the Republic. Oblong-oval in shape, pale yellow, smooth, lush nutritious varieties were created at the Uzbek Institute of scientific research on vegetable, vegetable crops and potato growing.Zoned, medium late, heat-resistant varieties in the Republic since 1995: Knotaks are white, round, Yeti are white, the pores are deeper, the' Umid "variety with an average weight of 110-130 gr was created' at the Uzbek Institute of scientific research on vegetable, vegetable crops and potato growing", zoned from 2001, suitable for cultivation in the early and late periods, The Shape of the plumage is elongated-oval, several varieties of the Yeti yellow type are created.

CONCLUSIONS

This article contains information about the morphological, biological, physiological characteristics of potatoes.In addition, brief information is given about the history of the emergence and cultivation of potatoes. The importance of potatoes in the world of vitality, which remains in human life, is much greater. from Bulart , it is of great importance in food, pharmaceutical, light industry, Animal Husbandry and, moreover, in many areas.

REFERENCES

1. Balashev N.I., Zeman G.O., Vegetables , T., 1977;
2. Abdukarimov D., Safarov T., Ostanakulov T., Dala harvest selection , breeding as well as genetics basics , T., 1989.
3. Khaitovna P.M., Faksriddinovich M.S. Technology of growing cauliflower // Texas Journal of Interdisciplinary Research. - 2022. - T . 6. - S. 8-10 .
4. https://scholar.google.com/citations?view_op=view_citation&hl=ru&user=Buztwd0AAAAJ&authuser=1&citation_for_view=Buztwd0AAAAJ:u-x6o8ySG0sC
5. https://scholar.google.com/citations?view_op=view_citation&hl=ru&user=Buztwd0AAAAJ&authuser=1&citation_for_view=Buztwd0AAAAJ:2osOgNQ5qMEC
6. https://scholar.google.com/citations?view_op=view_citation&hl=ru&user=Buztwd0AAAAJ&authuser=1&citation_for_view=Buztwd0AAAAJ:qjMakFHDy7sC