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MAIN TRENDS IN THE DEVELOPMENT OF INDIA-US RELATIONS OVER THE LAST DECADE

Rano Tuychiyeva Almamatovna
Doctor of Philosophy in Political Sciences,
Uzbekistan state university of world languages,
Department of Social Studies,
Tashkent, Uzbekistan,
Email: rano-tuichiyeva@mail.ru,
tel.: +998974046454
https://doi.org/10.5281/zenodo.7107922

Abstract
This thesis examines the dynamics of bilateral and multilateral cooperation between India and the United States of America against the background of global geopolitical changes in recent years, the important directions identified in the development of mutual relations, and the impetus for strengthening cooperation. It is dedicated to the analysis of the main factors and existing shortcomings, the expected prospects for the relations between the two countries.
Keywords: strategic partnership, trade, defense, security, artificial intelligence, Indo-Pacific region

INTRODUCTION

The US is India's most comprehensive strategic partner, and the two countries cooperate in many areas, including trade, defense, multilateral intelligence, cyber space, civil nuclear energy, education and health. As they enter the new decade, they have set a new agenda for cooperation in the Indo-Pacific region, seeking to be "free and open".

Geopolitical changes in recent years and the Covid-19 pandemic have led to a prospective assessment of bilateral relations. Cooperation on emerging technologies, education, national security and defense, space and cyber security, counter-terrorism, trade, humanitarian assistance and disaster relief, infrastructure financing, and a rules-based order in a free and open Indo-Pacific have been identified as the main directions in the development of India-US relations in the coming years.

Today, bilateral defense cooperation is being streamlined, reducing bureaucratic obstacles, conducting new military exercises, and reinvigorating the defense trade and technology initiative.

At the same time, in recent years, two multilateral strategic groups - India-Australia-Japan-US Quartet (QUAD), revived in 2017, and Israel-India-UAE-US Group of Nations established in 2021 West Asia Four (I2U2) managed to expand its activities in a short time. These quartets have become the best format for India and the US to pursue purposeful multilateral cooperation with like-minded democracies, especially the focus of the West Asian quartet on technological cooperation has gained particular potential.

The withdrawal of American troops from Afghanistan has reduced its dependence on Pakistan for roads, and now India and the United States have begun to expand joint efforts to fight against terrorist groups in Pakistan. Also, India and the United States have begun to strengthen cooperative relations with regional advanced countries to meet the need for infrastructural investments in the Indo-Pacific and to have a credible alternative to China's Belt and Road initiative.

The main part

Emerging technologies and national security

India-US technology cooperation has been growing in recent years, and the two sides signed several new agreements in 2021. Specifically, in March 2021, the India-US Science and Technology Forum's Artificial Intelligence Initiative (USIAI) will focus on cooperation in artificial intelligence, including bilateral research and development, healthcare, smart cities, agriculture, aimed at the development of research areas in the field of energy and production. In September 2021, US President J.Biden and Indian Prime Minister N.Modi discussed expanded cooperation in the fields of space security, cyber security, health security, semiconductors and next-generation communication technologies. They also agreed to coordinate mutual efforts to respond to cyber threats through addressing vulnerabilities and threats in cyber space, dialogue, joint meetings, training and sharing of best practices. This meeting defined areas of action in two domains - cyber security and artificial intelligence.

Cyber security

In recent years, the rise of cyber-attacks, including ransom ware, spyware campaigns and other malicious activities, has raised concerns about the resilience of critical infrastructural and digital assets. As just one example, the Indian Emergency Response Team (CERT-In) reported that 1.4 million cyber security incidents occurred in India in 2021, making India one of the countries that experienced the highest number of cyber attacks in Asia this year.

The overall cyber resilience of industry, government and communities is critical, and the nature of the cyber security threats facing India and the US also has a geopolitical dimension. A clear indication of the growing importance of cyber security in India-US bilateral cooperation is that the India-US National Security Dialogue Senior Officers' Meeting was held in January 2022 with the main objective of strengthening cooperation in cyber security and critical infrastructure focused on strengthening.

Building core defense and security cooperation

In 2016-2020, India and the US held the "2+2" defense and foreign ministers' dialogue, and during this period three major military agreements were signed - the Memorandum of Agreement on Logistics Exchange (LEMOA), the Communications Interoperability and Security Agreement (COMCASA) and the Basic Exchange and Cooperation Agreement (BECA). They allow for the mutual provision of logistics supplies and services, the transfer and use of encrypted communication equipment, and the development of geographic intelligence exchange. During the same period, the two sides also signed the Helicopter Interoperability Agreement (HOSTAC) and the General Security of Military Information Agreement (GSOMIA), which allows the US government to share classified information with the Indian defense establishment.) and the Industrial Security Agreement (ISA) were also signed.

In October 2020, the US National Security Commission on Artificial Intelligence emphasized that India should be viewed as a force that maintains US technological ties in the Indo-Pacific. It was also proposed to create a US-India strategic technological alliance for defense and security. In March 2021, the US-India Artificial Intelligence Initiative (USIAI) was launched in collaboration with the Science and Technology Committee of India and the US State Committee. USIAI has started organizing symposia on artificial intelligence in healthcare, agriculture, urban planning, education, energy and transportation. While the USIAI has promoted knowledge sharing between relevant stakeholders in the two countries, perhaps due to US wariness of India's relationship with Russia, ties in this direction have slowed.

India's reference to the Ukraine crisis that all countries have equal rights indicates that the US attitude towards India on this issue may soften. In April 2022, US Secretary of State Blinken said that "today we are able and ready to partner with India in almost every area - commerce, technology, education and security" "he states.

At the moment, India and the US are developing dialogue on various areas of security - maritime security, space security, internal security, cyber security and strategic security - within the framework of expanded and military exercises. The Joint Working Group on Combating Terrorism and the Interagency Working Group on Defense Trade Development are active. India currently deploys a permanent representative in Bahrain with the US Central Command and the US has been invited to join India's naval exercise MILAN. In addition, a US liaison officer has been deployed to the Information Fusion Center-Indian Ocean Region Group (IFC-IOR) in Gurugram, India.

In 2020, when the crisis began on the China-India border, the Trump administration provided India with two modern surveillance drones and cold weather support equipment. Some prominent US lawmakers and government officials have also condemned China's aggression along the Line of Control.

US arms sales to India continue. Between 2008 and 2018, India purchased US defense equipment worth more than USD 20 billion, while the last major defense deal was signed in 2020 and included 24 submarines worth more than USD 3 billion for the Indian Navy helicopter and purchased six Apache helicopters for the Indian Army. Negotiations are underway to supply India with US armed drones, and India plans to sign many defense deals in the future as part of its military modernization programme.

China's increasingly aggressive behavior, particularly the disputed Sino-Indian border, is prominent among the broader and more pressing issues in India-US cooperation. The 2020 border crisis was the deadliest in more than 40 years of fighting, and both countries continue to deploy troops along their borders. J.Biden administration and the US Congress openly condemn China's aggressive tactics along its borders with India, and this indicates that the US is ready to provide India with the capabilities and intelligence it needs to protect its territorial integrity. China is expanding its infrastructure along the eastern sector of Arunachal Pradesh's border with Tibet and still claims 90,000 sq km of border territory. Instead, the US reminds Beijing that it recognizes India's sovereignty over Arunachal Pradesh.

In October 2020, the US P-8 maritime surveillance aircraft was flown to an Indian military base for the first time. Since this year, the Malabar Sea exercise has been held between Australia, India, Japan and the USA. India and the US are planning to conduct naval exercises in the Indian Ocean under India's Andaman and Nicobar Command.

In 2017, the revival of the India, Australia, Japan and the USA Quartet, in 2019 the holding of military exercises called "joint sails" between India-Japan-USA-Philippines through the South China Sea, in 2021 the new India- The announcement of the Israel-UAE-US quadrilateral dialogue, the India-Japan-US trilateral agreements, etc., are to preserve India's strategic autonomy and strengthen a more flexible strategic partnership with important strategic countries and from the past of non-alignment while reflecting the goals of distancing, it also reflects the world's transition from centuries of military treaty alliances to more flexible and functional coalitions.

Emerging concerns in counterterrorism

The establishment of the India-US Joint Task Force on Counter-Terrorism and the establishment of dialogues between the US and India in this regard have increased the importance of counter-terrorism in the bilateral diplomatic mechanisms. These institutional efforts have played a crucial role in bridging existing gaps in counter-terrorism geopolitics between the two countries. These gaps include differences in India's views on the fight against the Islamic State (ISIS) in Syria, the overthrow of Al-Qaddafi in Myanmar, and US efforts to resolve the 2011 conflict in Libya.

Overall, there is great scope for India and the US to cooperate in the fight against terrorism, particularly in South Asia. Apart from the traditional areas of counter-terrorism, a joint comprehensive approach to counter-terrorism by India and the US should focus on the financing of terrorist groups. While India and the US have worked on various aspects of counter-terrorism, the prohibition of terrorist financing in South Asia – Hawala – continues to elude the formal financial system. Another potential aspect of India-US cooperation in the fight against the financing of terrorism is the careful examination of the channeling of donations to terrorist groups located in the region from West Asia to Pakistan.

Among other areas of concern for both countries, increased propaganda, recruitment and financing of the use of cyber-attacks by terrorist groups remains another major challenge. In addition, in recent years, the use of encryption technologies such as VPN and TOR by terrorist groups in South Asia has become a major concern of security institutions. India and the US should work together to counter these trends by partnering with tech companies.

Bilateral trade and global value chains

India and the US have important economic ties. First, the US is India's largest trading partner, with bilateral trade hitting a record high of US$19 billion in 2019. The US is also the largest source of foreign investment in India, with inward investment flows of $48.2 billion, and the growing trade and investment relationship not only complements their strategic partnership, but also shapes the emerging economic architecture in the Indo-Pacific gives the opportunity. Facilitating direct investment for trade in key sectors and encouraging the participation of multinational corporations in bilateral trade and production are set as strategic trade plans.

A trade and global supply chain strategy for the US and India cannot be effective without a commensurate plan for investment. Without investment from leading US firms or partner firms in Western Europe and East Asia, India's integration into global value chains, particularly high-tech sectors, will remain difficult.

Attracting large amounts of direct investment from the US to India can stimulate bilateral trade in key sectors. The US government has taken various measures over the years to support trade with India in key areas such as nuclear energy (eg. the India-US Nuclear Deal), natural gas and defense equipment (eg. the India-US Defense Technology and Trade Initiative) in the frame.

For now, it's a little difficult to say that the idea of American firms diversifying from China to India is coming to fruition. Of the few US firms that have branched out from China, most have chosen Vietnam, with only a few investing in India.

In some sectors, Indian companies have a huge presence in global markets. For example, India's telecommunications industry ranks second in the world, pharmaceuticals ranks third, automobile manufacturing ranks fourth, and chemicals trade ranks sixth. In other sectors such as electronics, engineering goods, capital goods and agriculture, India attracts less investment flows and therefore finds it difficult to compete, trade or negotiate favorable

terms in the global market. However, recent analysis shows that electronics exports are on the rise, with India expected to export electronics worth Rs 16 billion in 2021.

Over the past few years, the US has been taking steps to respond to geopolitical and economic imperatives to shift and redirect supply chains away from China. India will benefit from some of these measures. With an improved business environment and government cooperation, it will be possible to strengthen supply chains that support the Indian and US economies and their strategic interests.

Summary

The US has proven to be a reliable partner in advancing India's regional and global multilateral interests, including at the United Nations. As the geostrategic landscape continues to change, both India and the US are seeking to further align their strategies in the Indo-Pacific and beyond. Over the past two decades, India and the US have increasingly aligned their bilateral and multilateral agendas to achieve synergy between their individual interests and global goals. These analyzes identify five areas that require special attention from India and the US: emerging technologies and national security, defense cooperation, prioritization of bilateral and multilateral interests, counter-terrorism, and trade promotion. . The focus on these areas is expected to shape the trajectory of India-US relations to a large extent over the next decade. At the same time, this requires unprecedented coordination with not only bilateral, but also regional and global stakeholders. Under these five specific sector ambitions, sub-domains of cooperation for both countries are expected to be created.

The following recommendations are put forward for the further development of India-US cooperation in the specified areas:

1. Strengthen cooperation on emerging technologies and artificial intelligence, as data regulation, information sharing, and privacy protection become critical to maintaining national security.
2. Strengthen coordination on multilateral and international issues, including prioritizing bilateral and multilateral strategic dialogue that has been developing in recent years.
3. Continue cooperation in the fight against terrorism. Incorporating security and defense issues into the emerging technology agenda, such as focusing on defining common principles for AI defense applications.
4. Increase investment in each other's economies to boost bilateral trade and encourage multinational corporations to participate in these initiatives.
5. Greater coordination among ministries working **on cyber security, especially to identify appropriate partners on specific issues.**

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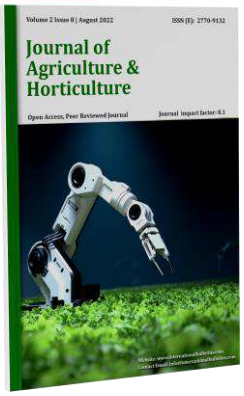

RELATIONSHIPS BETWEEN SOIL RESIDUES AND THE COLLECTION SYSTEM

Botirov Mirzokhid Ismonkhojaevich[1]
[1]Associate Professor of Fergana Polytechnic Institute
Sh. Akramov[2]
[2]Doctoral student of Fergana Polytechnic Institute
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Abstract. The preservation and improvement of soil fertility is an urgent task today. To do this, it is necessary to plant intermediate and secondary crops between and after the main crops. This allows a large amount of organic residue to remain in the soil after harvest. As a result of their decay, the amount of soil humus, total and mobile nutrients increase.

Keywords: main crop, secondary crop, intermediate crop, soil, humus, mobile nutrients, nitrogen, phosphorus, potassium, root, root.

INTRODUCTION

Today in the world it is becoming urgent to keep the soil fertility clean and increase its productivity. A growing world population will require greater yields from existing agricultural land to meet food demand. In many cases, this leads to a sharp decrease in humus and other organic substances in the soil. The main factor in solving these problems is the organization of alternating planting. It is an urgent task to include leguminous crops that leave nutrients in the soil and crops that leave a large amount of organic waste in the rotation system.

Such deficiencies are also present in our republic, increasing the production of crops in order to meet the needs of the population leads to a decrease in the amount of available humus and nutrients in the soil. A lot of work is being done by the state to solve this problem. Also, steps are being taken to further improve the current basic 1:1 crop rotation system. For this purpose, winter wheat is planted together with alfalfa, and after wheat grain is harvested, alfalfa is grown in the field as a repeat crop.

In addition, today it is recommended to switch to a 2:2 rotation system. In this case, if cotton is planted for two years in a row, wheat is planted for two years. This allows intercropping and repeated planting between main crops. As a result, a large amount of plant residue remains in the soil.

LITERATURE ANALYSIS AND METHODOLOGY

Kh. Baykabilov [1; 35-36-b] states that legumes and intermediate crops compact the soil less than alfalfa. Their small root systems increase a certain amount of humus and organic matter in the soil during the growth of the plant, and improve the water-physical condition of the soil.

In Egypt, a two-year rotation is generally accepted [9], in which 4 crops are planted - 2 winter and 2 summer: cotton is planted one year later. In this rotation, the following rotation of crops is used: cotton seeds are sown in March, cotton is plowed and wheat is sown in November. After the wheat ripens and is harvested (in May), the land is rested for a short time. At the end of July or beginning of August, corn is sown, after which the field is occupied by Egyptian beans (bersim) in November.

Bullock D. [5; 309-326-b], several types of crop rotation are used in the cotton growing regions of the United States, mostly without alfalfa. 1) In this case, cotton, spring legumes, then autumn legumes take turns with corn, soybeans, etc., the weight of cotton is 33.4%. 2) In this method, cotton occupies half of the cultivated land. 1st-2nd year cotton, 3rd year spring legumes and fall, 4th year corn partner spring legumes. In both cases, after cotton, winter wheat can be alternated with spring legumes or Japanese pea.

According to the data [10] in the People's Republic of China, depending on the natural and economic conditions, cotton is planted alternately with different crops. In most cases, in the north-western and northern regions of the country, the following planting rotation was adopted:

a) cotton is planted in spring (April), winter wheat is sown between the rows of cotton in late August and early September, after wheat, corn, soybeans and other legumes are grown as repeat crops.

b) cotton is sown in spring, legumes are planted in cotton in August, and chumiza is used after harvesting legumes the following year.

In the central cotton-growing regions of this country, cotton is planted between wheat fields as a repeat crop. In eastern China, before picking cotton, yellow clover is sown in the middle of cotton, which is plowed in as a green manure in the spring. After that, rice is grown. There are a number of other crop rotation methods.

Based on the results of the experiments conducted in the state of Iowa, D. Karlen, T. Berry and others [6; 22 p.], according to the information provided by the cultivation of fodder on the basis of crop rotation, increased the fodder base for livestock and improved the chemical properties of the soil. First of all, the soil environment has changed positively, the amount of NPK and other nutrients in the soil has increased.

The root system of alfalfa reproduces mycolytic bacteria, which suppress parasitic fungi and actinomycetes from the soil. According to scientists [7; 8] in the first old irrigated soil, they counted 12,400 fungal colonies, in the three-year alfalfa field, this indicator was only 700 colonies.

M.T. Tojiev [2; 340-342-b], winter wheat left behind 43.7-45.7 ts/ha of stem and root residues in the 0-50 cm layer of the soil, and 45.1 ts/ha in corn planted as a repeated crop. organized.

B.M. Khalikov [4; 102-104-b] in repeated crops, using mineral fertilizers in amounts of N60, P30, K30 kg/ha, created conditions for the optimal growth and development of mung beans, beans and soybeans, and the yield was proportionally 2.0; found that it increases by 3.2 and 2.9 ts/ha.

G.Sh. Orinboeva in his experiments conducted in the conditions of the grassland soils of the Fergana region [3; 165-b] of repeated crops-corn, mung beans, beans and soybeans in three years on average proportionally 38.2; 15.5; 12.7 and 23.3 tons/ha of grain and 307.3 (blue mass), 32.2; 12.3 and 33.5 ts/ha of hay yield can be obtained, the total amount of stubble and root residues is 52.2; 45.5; 32.9; 15.8 in composition, making 42.4 ts/ha; 65.2; Total nitrogen accumulation of 34.8 and 39.6 kg was determined.

RESULTS

Table 1

Experience system

№	Crop type	Intermediate and repeated crop type	Mineral fertilizer standards		
			N	P	K
1	In a 1:1 crop rotation system cotton: wheat	Corn	100	70	50
2			150	100	70
3		Soya	100	70	50
4			150	100	70
5	Cotton+intermediate harvest	Rye	100	70	50
6			150	100	70
7	Cotton+intermediate harvest	Rye+ green peas	100	70	50
8			150	100	70
9	Wheat + repeated cropping	Corn	100	70	50
10			150	100	70
11	Wheat + repeated cropping	Soya	100	70	50
12			150	100	70

Note: mineral fertilizers are calculated only for intermediate and repeated crops.

Table 2

Field experiment Agrochemical properties of field soil

№	Soil layer, sm	Gumus	Total nitrogen	Total phosphorus	Mobile form mg/kg		
					$N\text{-}NO_3$	P_2O_5	K_2O
	Initial (before experiment)						
1	0-30	0,964	0,118	0,156	26,2	33,2	240
2	30-50	0,764	0,084	0,092	22,4	26,4	220
3	50-70	0,484	0,056	0,084	14,3	19,6	160
4	70-100	0.476	0.052	0,068	13,7	18,4	140
	Post-Experience (after one rotation, 4 years)						
1	0-30	1,0234	0,176	0,178	29,8	34,7	250
2	30-50	0,8432	0,121	0,118	24,9	28,5	230
3	50-70	0,5467	0,078	0,095	15,2	20,6	180
4	70-100	0,5213	0,050	0,789	14,7	19,5	160

Table 3

The amount of roots and angiz remaining in the soil during one rotation period, t/ga

№	At the expense of intercropping			Repeat crop			Total by rotation
	root	angiz	total	root	angiz	total	
1	-	-	-	2,4	3,8	6,2	6,2
2	-	-	-	3,1	4,2	7,3	7,3
3	-	-	-	1,2	1,8	3,0	3,0
4	-	-	-	1,9	2,3	4,2	4,2
5	1,8	2,2	4,0	2,6	4,2	6,8	10,8
6	2,1	2,5	4,6	3,4	4,4	7,8	12,4
7	2,1	2,4	4,5	2,7	4,3	7,0	11,5
8	2,3	2,7	5,0	3,6	4,7	8,3	13,3

9	2,3	2,6	4,9	2,3	2,6	4,9	9,8
10	2,5	2,9	5,4	3,1	3,9	7,0	11,4
11	2,6	3,2	5,8	1,3	2,1	3,4	9,2
12	2,9	3,6	6,5	2,1	2,6	4,7	11,2

DISCUSSION

Field experiments were carried out using a 2:2 crop rotation system to maintain and increase soil fertility (Table 1). In order to study this, as a control, we controlled the 1:1 rotation system, which is currently widely implemented in our republic. Experiment options consist of 12 options and are arranged in one tier. If cotton is planted in it for two years, wheat is planted for two years. Between the first and second year of cotton, which is the main crop, rye and rye+green peas are grown as intercrops. For two years, the wheat plant is planted in this field in a row, after wheat, a repeat crop is planted for two years. Corn and soybeans were selected as repeat crops. Also, mineral fertilizers for intermediate and repeated crops are given in two different rates. For the main crops, mineral fertilizers were fertilized according to the annual rate.

We took soil samples from the 0-30, 30-50, 50-70 and 70-100 cm layers of the soil before and after the experiment and analyzed them agrochemically. These data are presented in Table 2, in which humus, total nitrogen, total phosphorus and mobile forms of nutrients (N-NO3; P205 and K2O) were determined. Analyzing these obtained data, we observed that proper crop rotation and intercropping between main crops and subsequent planting of repeated crops improved the soil agrochemically. For example, the amount of humus in all studied layers of the soil increased from the beginning, respectively 1.023; 0.843; We found that it was 0.546 and 0.521%. It was also observed that the amount of total nitrogen and total phosphorus increased. This was especially evident in the amount of mobile nutrients in the soil. We found that the content of nitrate nitrogen increased from 26.2 to 29.8 mg/kg, mobile phosphorus increased from 33.2 to 34.7 mg/kg, and exchangeable potassium increased from 240 to 250 mg/kg in the tillage (0-30 cm) layer of the soil. In the course of the experiment, we calculated the amount of roots and shoots remaining in the field after one rotation (4 years) of crops in the field, and after sowing and harvesting the crops in between and after the main crops. We present these data in Table 3. According to him, in the control options 1-4, since the rotation of crops was one year, no intermediate crop was planted and only a repeat crop was planted after winter wheat. This table shows the amount of roots and shoots remaining after repeated crops. In options 1 and 2, where corn was planted as a repeated crop and mineral fertilizer was applied to it in the amount of N100R70K50 and N150R100K70 kg/ha, the amount of roots and shoots in two years was 6.2 and 7.3 t/ha, respectively. In the 3rd and 4th options, where soybeans were planted as a repeated crop and mineral fertilizers were used as above, their amount corresponded to 3.0 and 4.2 tons.

In the 5th and 6th variants studied in the experiment, rye was planted as an intercrop between cotton and mineral fertilizer was applied in the amount of N100R70K50 and N150R100K70 kg/ha. As a result, 4.0 t/ha and 4.6 t/ha of roots and shoots were left after intercropping in the 5th option, and 4.6 t/ha in the 6th option. In the 3rd and 4th years of the experiment, winter wheat was planted in this field, only corn was planted as a repeat crop, and two types of mineral fertilizers were used as above. As a result, 6.8 and 7.8 t/ha of roots

and tubers were left in two years. In one rotation period, the amount of roots and roots left by plants in options 5 and 6 was 10.8 and 12.4 t/ha, respectively.

In the next 7th and 8th variants of the experiment, as an intermediate crop between cotton crops, green peas were planted with rye, and the rates of mineral fertilizers were set as those of the previous variants. As a result, it was determined that the amount of roots and roots remaining in the soil after intermediate crops was 4.5 and 5.0 t/ha, respectively. Even when two years of repeated cropping after winter wheat, roots and stalks remain, they are 7.0; It was 8.3 t/ha. During one rotation period (in 4 years), a total of 11.5 and 13.3 t/ha of roots and shoots were achieved in the 7th option and 13.3 t/ha in the 8th option.

Options 9, 10, 11, and 12, where winter wheat was previously planted in the rotation, were followed by corn and soybeans. It was observed that the amount of roots and shoots left after the harvest of the repeated crop was slightly less in the 11th and 12th variants than in the 9th and 10th variants. For example, in options 9 and 10, the amount of root and root is 4.9, respectively; As for 7.0 t/ha, in options 11 and 12 it was 3.4 and 6.3 t/ha. It was observed that in these variants, when intercrops were planted after cotton, the amount of root and stem remaining from them was more than in the previous variants. Because cotton and catch crops are grown well after repeated cropping. As a result, it was achieved that a large amount of organic residue remains. According to these options, the amount of roots and shoots remaining from intermediate crops is 4.9, respectively, according to the options; 5.4; It was 5.8 and 6.5 tons. The amount of roots and shoots left during the rotation period is 9.8, respectively; 11.4; It was 9.2 and 12.8 t/ha.

CONCLUSION

In order to increase the productivity of existing irrigated lands in our republic, it is necessary to organize the rotation of agricultural crops. In the experiment, the 2:2 crop rotation system was studied, in which the rotation of agricultural crops was studied on a scientific basis. Crops are grown in rotation for 4 years, the main crops are cotton and winter wheat. If cotton is planted in one field for two years, the catch crop is planted once. After that, two years of winter wheat are planted, and after they are harvested, they are replaced by two years of corn and soybeans as a repeat crop. As a result, an increase in the amount of humus and all kinds of nutrients in the soil is achieved. In particular, it was observed that it increased even more in the tillage (0-30 cm) and under-tillage (30-50 cm) layers of this soil.

When the amount of roots and shoots remaining in the soil after the main, intermediate and repeated crops was studied, it was 9.2 t/ha to 13.3 t/ha during one rotation. The highest amount of roots and tubers was 13.3 t/ha in option 8, where cotton was first planted for two years, rye and chickpeas were planted as intermediate crops, and mineral fertilizer was applied in the amount of N150R100K70 kg/ha. Also, in option 12, where winter wheat is planted for two years, then soybean is planted as a repeat crop, then cotton is planted for two years, and mineral fertilizer is applied in the amount of N150R100K70 kg/ha to the intermediate and repeat crops, a total of 12.8 t/ha of organic residue remains.

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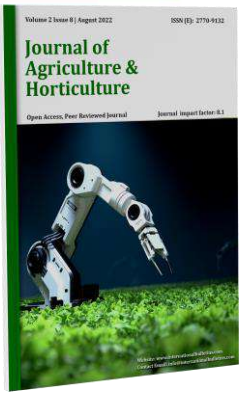

СОЯНИНГ ҲОСИЛИНИ КОМБАЙНДА ЙИҒИШТИРИШГА МОС НАВЛАРИНИ АЖРАТИШ

M.K.Lukov
candidate of agricultural sciences
A.P.Shamanov
independent researcher
J.B.Kuziboyev
students
L.A.Izzatullayev
students
https://doi.org/10.5281/zenodo.7157227

Аннотация

Ушбу мақолада бир хил тупроқ шароитда экиб ўстирилган соянинг 7 нави ва 4 намуналари ўсимликларининг туп шакли, пояси узун лиги, биринчи ҳосил шохининг юр юзасидан баландлиги, пишиш даврида донларнинг сочилувчанлиги, ҳосилдорлиги каби қимматли хўжалик белги –хусусиятларини ўрганиш асосида, нав намуналарининг ҳосилини комбайнда йиғиштиришга мослиги ҳақида маълумотлар берилган.

Annotation

In this article, based on the study of valuable economic traits, such as the shape of the stem, the length of the stem, the height of the first harvesting branch above ground level, the dispersion of grains at maturity, the productivity of 7 varieties and 4 samples of soybean plants grown in the same soil conditions, provides information on the suitability variety samples for harvesting by a combine harvester.

Калит сўзлар

Соя, комбайн, соя навлари, ҳосил, дуккакли-дон, дуккак, мой, оқсил, витамин, уруғ, дуккаклар чатнаб кетади, ён шохлар.

Keywords

Soybean, harvester, soybean varieties, crop, legumes, legumes, oil, protein, vitamin, seeds, chat pods, side branches.

Introduction: Soy is one of the oldest crops in the world. The reason why soybean is a valuable leguminous crop is that its seeds contain a large amount of 35-52% protein, 12-27% oil, various vitamins A, B, C, D, E and a number of enzymes. Soy protein consists of easily soluble fractions (up to 94%), and contains a large amount of non-exchangeable amino acids, lysine amino acids are 9 times more than in wheat flour, 2-3 times more than in wheat flour, 2-3 times more, than wheat flour. more than in cow's milk, and 2 times more than in beef.`

Three types of protein products are produced from soybeans: concentrates with a protein content of 70%, isolates (up to 90% protein) and products with a consistency similar to meat products. These products are much cheaper than real ones and are not inferior to them in terms of nutritional value and digestibility. Soybean oil has a pleasant taste and good culinary properties; it contains physiologically active full-saturated fatty acids, which are indispensable for the body.

Soya dunyoning 70 ga yaqin davlatida yetishtirilib, keyingi 25-30 yilda uning ekin maydoni 30 barobar, urug‘chilik 6 barobar oshdi. 2022-yilda dunyoda ekin maydoni 110

million
gektarni tashkil etadi, bu O‘zbekiston Respublikasida istiqbolli ekin bo‘lgan soyadan oshib, uning ekin maydoni yil sayin ortib bormoqda.

Soybean is grown in about 70 countries around the world, and in the next 25-30 years, its sown area increased 30 times, and seed production increased 6 times. In 2022, the sown area in the world will

be 110 million hectares, which exceeds soybean, which is a promising crop in the Republic of Uzbekistan, and its sown area is increasing every year.

Доступность: Из-за своей биологии выращивание соевых бобов в условиях жаркого климата и низкой влажности несколько затруднено. 17-25 0С - благоприятная температура в период цветения-семенообразования сои. В Сурхандарьинской области температура летом в отдельные дни превышает 47 0С. Кроме того, влажность воздуха очень низкая. Во время созревания зерна сортов сои происходит рассыпание стручков чатнаба и семян. Этот индикатор в основном появляется в жарких условиях.

In addition, the branches of the first harvest on the main stem are at a height of 17 cm above ground level. if it is placed no higher than when harvesting, the combine knives will not be able to harvest the first harvesting branch, and the first harvesting branch will remain at the bottom. Because of this, a certain part of the crop will die. Combine harvesting also depends on the shape of the variety bush. The shape of the bush of the plant in some varieties is hollow, it grows upright.

The shape of the bush in some varieties is flat, and the fact that the lateral branches are located close to the surface of the earth, sometimes recumbent, makes it difficult to harvest with a combine.

In view of the foregoing, the first harvest of branches with a straight-growing, non-lodging stem is 17 cm. An urgent issue is the selection and selection of soybean varieties located at a height of more than 100 m2, which do not fall off when the crop ripens and do not crumble grains, with high productivity rates.

Research objective: based on the study of valuable economic traits of different varieties and samples of soybeans grown in the same soil conditions, it is necessary to identify varieties suitable for combine harvesting and continue their selection and seed production.

Scientific news: the suitability of new varieties and samples of soybeans for harvesting with a combine harvester has not been studied in the Surkhandarya region, where in the south of Uzbekistan there is a very hot climate and very low air humidity.

Materials and methods: Field experiments. It was held on the basis of the educational and experimental farm of the Termez Institute of Agrotechnologies and Innovative Development. The soil of the experimental site is desert-sandy, the water level is 5-7 m. There are very few nutrients. In the experiment, 2 reproductions of seeds of soybean Genetik-1, Oltintoy, Beda, Slavya, Selena, Fovarit and samples of Vavilov, Mars, DilHUZ-100, TAIRI-1 were sown. The area of Paikalchi is 48 sq.m. The experiment consists of 3 returns. On the experimental plot, the same agrotechnical conditions were created for the correct

evaluation of variety samples. The studies were carried out according to UzPITI (2007), ITI of leguminous crops (2014) and generally accepted methods.

Research results: according to 2021-2022 data. (Table 1) indicators of the growing season and morphological organs of different soybean varieties and accessions differed. It has been established that the vegetation period of the studied varieties ranges from 85 to 105 days, and it has been determined that varieties with a vegetation period of -85 days belong to ultra-early varieties, varieties with a vegetation period of up to 100 days. days belong to early

ripening varieties, and with a growing season of up to 110 days belong to early ripening varieties (Table 1).

It has been observed that soybean varieties differ sharply from each other in the formation of plant organs. The height of the plants of the newly studied varieties Selena, Slavya Vavilov and samples of Mars, Dilhuz, TAIRI-1 is 80 cm. It was higher than in tall varieties, the same pattern was observed, the location of the first productive branch on the stem was 17 cm above ground level. In the studied varieties and samples, after the ripening period, the pods cracked and the grain dispersion was 4-5 points.

The trunk is long. after the maturation phase, the non-disintegration of the grains was 5 points, the 1st pod in the lower part of the stem at a height of 17 cm from the ground level. 32 centners/ha from varieties suitable for harvesting at altitude, more crops were grown.

It should be noted that the dispersion of grains in legumes does not depend on the height of the plant, the shape of the stem, and the location of the first productive branch above ground level. soybean harvesting varieties, in order to be harvested in a combine, soybean variety is tall, the first productive branch is 17 cm above ground level, located above, it is necessary to have complex characteristics, such as non-scattering of grains after the ripening phase.

Conclusion: the harvest of soybean varieties Optima, Slavya, Selena, Vavilov and samples of Mars, TAIRI-1 in the ripening phase on nutrient-poor desert sandy soils of the Surkhandarya region, the first harvest on a stem 17 cm from the surface of the branch. Due to its height, it is suitable for harvesting these varieties and samples in a combine.

It is desirable to develop the selection of varieties suitable for combine harvesting and to increase the initial seeds of these varieties.

Table 1
Suitability of different varieties of soybeans for harvesting in a combine harvester

№	Varieties and Samples	Growing period, day	The variety is a bush shape	Plant height, cm	The height of the 1st harvest branch from the ground level, cm.	Grain dispersion during ripening, score	Average yield, s/ha	Suitability for harvestin combine harvester
1	2	3	4	5	6	7	8	9
1	Genetik-1 (standart)	86	noise	48	13	4	24, 3	average
2	Beda	104	common	68	17	4	25,5	average
3	Oltintoj	87	common	57	12	5	28,2	average
4	Vavilov	110	noise	93	22	5	32,3	very good
5	Mars	92	noise	102	21	5	33,1	very good
6	Dilhuz-100	84	common	91	19	5	27,8	good
7	Optima	110	common	77	16	4	29,4	good
8	Selena	104	noise	82	22	5	30,5	very good
9	Slaviya	108	noise	88	22	5	32,4	very common
10	Fovarit	101	noise	66	18	4	28,6	good
11	TerAIRI-1	87	noise	108	23	5	34,7	very good
	TSD_{05}						1,4 s/ha	

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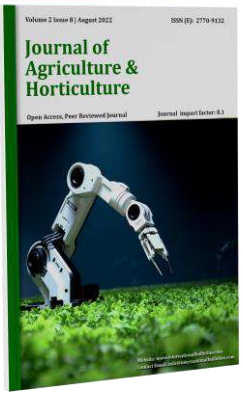

ИНТРОДУКЦИЯ ПРОДУКТИВНЫХ СОРТОВ ТЫКВЫ (CUCURBITA PEPO VAR. MELOPEPO).

Кенжаева Толгоной Рахмоновна
Термезский институт агротехнологии
и инновационного развития
(Ассистент)
Телефон: 99-572-91-33
kenjayeva67@mail.ru
Мамарасулова Яйра Алишеровна
Телефон: 94-002-504
Омонова Латофат Базаровна
omonovalatofat842@gmail.com
студенты 2 ступени
https://doi.org/10.5281/zenodo.7157279

Абстрактный. В данной статье описано растение патиссон в разных климатических условиях Узбекистана. Условия посадки и ее роста, развития, урожайности, а также погодные условия подчеркивается влияние условий. Патиссон — однолетнее растение семейства тыквенных, чаще всего встречающееся в виде куста. Средняя урожайность Белые-13 составляет 16/га, а сойчи 17 ц. Кроме того, НЛО Уайт и Умбералл имеют более высокую урожайность, чем другие сорта, которые составляют 15 тонн и 15,1 тонны.

Annotation. In this article, results of Uzbekistan. Planting for different periods and its growth, development, yield, as wele as the impact of weather conditions were presented. Squash is e one-yearplant of the family of zucchini, mainly shrut, rarely found in the form of a whip. The results shoved that average yield of «White -13» control was 16 tons/ha and it was 17 tons/ha in “Solnyshko”. Further more, “NLO White” and «Umberal» had a high yield compared to the other varieties and hybrids, accounted for 15 tonsh/a and 15.1 tons/ha, respectively.

Ключевое слово. Паттисон. Производительность. Образцы Вар. Период прорастания. Влияние температуры. Процент всхожести. Сортировка. Наблюдательная работа в открытом поле.

Keyword. Patisson. Produktivity. variety samples. Sprouting time. The effect of temperature. Germination percentage. Variety selection. Open field observation.

Из-за высоких вкусовых качеств тыквенной культуры ее издавна возделывали в Средней Азии, был самым важным и любимым продуктом своего народа. Люди здоровы тыквенные растения занимают особое место в создании образа жизни, и

Он известен с древних времен своими целебными свойствами и богат витаминами. Плоды полисовых культур используют в свежем виде для употребления в пищу и как сырье для переработки в промышленности, а также как сочный корм для скота. Это также важно в лечении. Мякоть плодов патиссона содержит легкоусвояемый сахар и применяется при лечении почек, печени и сердечно-сосудистых заболеваний. Важно использовать мякоть патиссона как противовоспалительное средство, а отвар его семян как глистогонное средство. Плоды патиссона содержат белки, жиры, углеводы, витамины и другие минералы.

- жиры – 0,1 г,
- натрий – 14 мг,

- Фосфор-12 мг,
- углеводы 4,1 г,
- Моно и дисахариды - 4,1 мг,
- кобальт- 1 мг,
- Бор - 19,7 мг
- насыщенные жирные кислоты - 0,041
- органические кислоты 0,1г,
- витамин В4-7,3 мг,
- витамин В9 – 30 мг, витамин С – 23 мг,
- кальций- 13 мг, кремний- 29 мг,
- натрий – 14 мг, фосфор – 12 мг,
- фосфор – 12 мг, моно- и дисахариды – 4,1 мг,
- кобальт – 1 мг

Патиссон богат витаминами и минералами и содержит следующие витамины.

Витамин С-25,6%,

кремний - 96,7%.

Витамин С в окислительно-восстановительных реакциях, иммунной системе участвует в его функционировании, предотвращает дефицит железа. Патиссон нормализует деятельность кишечника, останавливает всасывание холестерина. Поэтому его рекомендуют в качестве диетического питания для профилактики ожирения, атеросклероза и сахарного диабета.

Патиссон полезен при запорах, сердечно-сосудистых заболеваниях и сахарном диабете. Благодаря большому количеству веществ, содержащихся в Патиссоне, он помогает лечить пациентов с тромбозами, ишемической болезнью, варикозным расширением вен и атеросклерозом. Эти фрукты помогают очистить печень и кишечник благодаря богатому содержанию аминокислот. Витамины и аминокислоты повышают иммунитет человека. Семена патиссона используются в косметике для регулирования работы сальных желез.

Распространены сорта Патиссона Заркокил и Белые-13. Патиссон (Cucurbita pepo var. patisson), тыква — однолетнее растение, относящееся к семейству тыквенных, прямостоячее кустовидное разветвленное растение. Корень хорошо развит. Стеблевые и листовые полосы относительно толстые. Листья некрупные, шероховатые, 3- или 5-гранные.

Цветки однодомные, однополые, крупные, желтого цвета, расположены поодиночке на стеблях. Плод – тыква, мелкая, звездчатая. Края коричневые. Цвет свежесобранных плодов светло-зеленый, желтизна крупных плодов становится бледной, на поверхности некоторых плодов могут появляться светло-зеленые пятна или полосы. Их плоды едят через 2-4 дня. Патиссон теплолюбивое растение. Патиссон высаживают под пленку в первой декаде февраля, а в открытый грунт – в первой декаде апреля. Расстояние между рядом и кустом 70х70 или 80х80 см. В каждое гнездо высевают по 4-5 семян, после прорастания ростков их собирают при образовании настоящего листа.

В период вегетации рядки размягчают, подкармливают и поливают. Патиссон требователен к воде. Ухаживал как за тыквой. Плод содержит 6,0-6,5% сухого вещества, 2,5-2,9% сахара и витаминов. Семя содержит масло и сантанин. Урожайность 150-200

ц/га. В основном употребляют в пищу солеными и консервированными (6-8-дневные плоды), крупные являются хорошим кормом для скота. В Узбекистане с 1988 года возделывается патиссон сорта Аква-13. Его продуктивность 110-159 ц/га. Patisson pathia по-гречески означает пафос-боль, а pate по-французски означает тыкву или пирог. Калорийность сырых патиссонов составляет 19 ккал на 100 г продукта, из них:

1. Белки – 0,6 гр.
2. Жиры-0,1 гр.
3. Углеводы-0,1 гр.
4. Вода-92 гр.
5. Пищевые волокна – 1,3 гр.

Витамины на 100 г:

- тиамин, В 1-0, 03 мг
- Рибофлавин, В2 - 0,04 мг
- Аскорбиновая кислота, С – 23 мг
- Никотиновая кислота, РР- 0,25 мг

Каждые 100 грамм

1. Кальций- 13 гр.
2. Натрий - 14 гр.
3. Кальций - 203 гр
4. Фосфор-12 мг

Строение стебля большинства сортов тыквы схоже с тыквой по делению на две группы, т.е. образующие стебли и побеги возможный Тыквы, патиссоны и овощи среди тыкв а тыквы относятся к тем, что образуют куст. Все они производят серет плоды и выращивается в открытом грунте.

Патиссон — однолетнее растение, относящееся к семейству тыквенных. Дикое состояние неизвестно. Лист патиссона толстый, опушенный. Цветы желтые. При выращивании Патиссона мужские цветки раскрываются первыми и остаются неопыленными. Поэтому мужские цветки не дают плодов. Есть несколько причин, по которым плоды не образуются.

- высокая температура при опылении;
- отсутствие пчел-опылителей и других насекомых;
- неправильное использование средств против вредных насекомых;

Плод патиссона представляет собой многосемянную ложную ягоду, то есть тыкву. их вес колеблется от 10 до 80 грамм. Патиссон в жаркую и теплую погоду хорошо растет. Меняется в прохладную погоду. Гибель при температуре 0-1 градус возможный необходимая температура во время цветения и плодоношения Патиссона это 28-32 градуса. Если температура упадет до 12-15 градусов, цветок уйдет он перестает расти и постепенно засыхает, устойчив к засухе. Это их характерно не только малое потребление воды, но и из почвы через корни это также зависит от количества поглощаемой воды. Плод — тыква. Из фруктов в форме солнца и блюдца. Цвет бледно-желтый, иногда зеленый есть пятна и полосы. Патиссон высаживают гнездовым способом. Интервал посева 70- Должно получиться 80 см. Плоды Патиссона срезают, когда они молодые, прежде чем они станут большими. потому что кожура молодых плодов мягкая и мякоть нежная. Патиссон маленький плод - тыква. Пластинчатые ребристые плоды в возрасте 5-10 дней.

их используют в пищу, в консервированном виде они имеют отличные вкусовые качества. Спелый прошедший патиссон становится грубым.

Кожица патиссона шершавого содержит вещество под названием пансир, очень твердое и не пригодное для употребления в пищу. Его используют в качестве корма для животных. Новый 2-4-дневные тыквы длиной 3-5 см для маринования, диаметром 6-10 см В возрасте 5-10 дней используют для засолки. Патиссон созрел Зрелые плоды используются в качестве корма для животных. Патиссона плод - жирный, и его также выращивают в открытом грунте. Фрукты в молодости его собирают до того, как он треснет, потому что кожура молодых плодов мягкая, а мякоть нежная будет. Патиссон следует выращивать на солнечном, но защищенном от ветра месте,будет уместно. Все виды теплолюбивые и нежные растения. Патиссон выращивают на небольших площадях в южных регионах нашей страны. Культиваторы в междурядьях осуществляют с помощью культиваторов КОП-4,2, КПХ-4,2, КПХ-2,8, МО, КПОСХ-2,8. В 1-ю обработку между рядами культиватор следует поливать воздухом за 7-8 дней до плодоношения и 4-5 дней в период плодоношения для получения однобокого плоского черенка и высокой урожайности. Количество поливов 500-600 м3 на гектар перед плодоношением и 400-500 м3 во время уборки. Яровую культуру с непрерывным периодом плодоношения высевают 9-11 раз на почвах с близкой инфильтрацией воды, фильтрацией воды глубокой. а в почвах поливают 13-16 раз. Лето, которое дает урожай за относительно короткий промежуток времени и урожай поливают 8-11 раз, в зависимости от уровня уровня воды. Паттисон ее срезают через 2-3 дня для маринования. Для засолки и жарки - 5-7 дней. отключен. щипать связку фруктов, готовых к сбору, пальцами или ножницами можно удалить разрезанием. Опрокидывание или сдавливание палака во время уборки урожа это невозможно, так как это отрицательно сказывается на его росте и снижает его продуктивность. обранные плоды собирают в корзину или мешок и сразу в соответствующие места будет отправлено. Сбор патиссона вручную — очень сложный процесс. Эти культуры включает 60-70% себестоимости продукции. Стоимость рабочей силы платформа сбора ПОУ-2 от ручного подборщика уменьшить в 1,2-1,5 раза, овощи добиться с помощью номеронабирателя АТС-1 и комплексного транспортера ТШП-25 возможный Собирайте урожай и гребите с помощью платформ и конвейеров между ними очищают от растительности. Это навесное устройство выполняется с использованием Проход занят площадкой или конвейером с учетом ширины.

Технология посадки. Патиссон можно выращивать на небольших участках в южных регионах. Один на культиватор в 1-ю обработку в междурядьях двусторонняя плоская резка и получение высокого урожая до тех пор, пока плоды не будут готовы поливать по воздуху следует каждые 7-8 дней до начала плодоношения и каждые 4-5 дней в период плодоношения. Количество поливов 500-600 м3/га до плодоношения, уборки урожая. а при весеннем просачивании с непрерывным нерестовым периодом 400-500 м3 близок к 9-11 раз семена, посаженные в поля, расположены глубоко а в почвах поливают 13-16 раз. Лето, которое дает урожай за относительно короткий промежуток време и урожай поливают 8-11 раз, в зависимости от уровня уровня воды. Паттисон ее срезают через 2-3 дня для маринования. Для засолки и жарки - 5-7 дней. срезается, кисть готовых к сбору плодов прищипывается пальцем или ножницами можно удалить разрезанием.

Во время уборки нельзя опрокидывать или прижимать палак, так как это негативно сказывается на его росте и снижает его урожайность. Собранные плоды собирают в корзину или мешок и сразу в соответствующие места будет отправлено. Сбор патиссона вручную — очень сложный процесс. Эти культуры включает 60-70% себестоимости продукции. Стоимость рабочей силы Платформа сбора ПОУ-2 от ручного подборщика уменьшить в 1,2-1,5 раза, овощи добиться с помощью номеронабирателя АТС-1 и комплексного транспортера ТШП-25 возможный Собирайте урожай и гребите с помощью платформ и конвейеров между ними очищают от растительности. Это навесное устройство выполняется с использованием Проход занят площадкой или конвейером с учетом ширины.

Перед сборщиками платформа передвигается со скоростью 0,1-0,2 км в час. Рабочие собирают урожай вручную и кладут его в ящик или ведро на платформе. Площадку периодически рыхлят, когда она достигает края грядки. На выращивание семенной культуры уходит 3-4 месяца.Поэтому летом их выращивать нельзя семена высевают в начале мая. Во избежание опыления семенами воздушная изоляция должна быть не менее 1000 м на открытой местности и 500 м на защищенной территории.

Сортировку в семеноводческих технологиях проводят после начала цветения и 2-3 раза после уборки зеленых плодов. Зарубежные гибриды можно определить по изменению окраски и твердости скорлупы. Семена отбирают или убирают за один прием комбайном МОП-1,4, платформой ПТ-3,5. Отделенные и промытые семена сушат при влажности 9%. Семена Патиссона собирают вручную. Затем их ферментируют в небольшом количестве воды в течение 1-2 дней.

В самоочистительных машинах К-21, К-531, К-541, в пневмоколонке ОНС-2,

МСС-2,5 очищают в пневмостоле и сортируют по сортам. Плоды патиссона – многосемянные ложные ягоды, то есть тыквы, их масса колеблется от 10 г до 80 г. Патиссон хорошо растет в жаркую и теплую погоду. Меняется в прохладную погоду. Температура может умереть при 0-1 градусе. Необходимая температура во время цветения и плодоношения патиссона 28-32 градуса. Если температура опускается до 12-15 градусов, цветок увядает, уходит, перестает расти и постепенно засыхает. Устойчив к засухе. Их качество зависит не только от малого расхода воды, но и от количества воды, поглощаемой из почвы через корни. Овощная культура Патиссон - однолетнее травянистое растение.

Перед сборщиками платформа передвигается со скоростью 0,1-0,2 км в час. Рабочие собирают урожай вручную и кладут его в ящик или ведро на платформе. Площадку периодически рыхлят, когда она достигает края грядки.На выращивание семенной культуры уходит 3-4 месяца. Поэтому летом их выращивать нельзя. Семена высевают в начале мая. Во избежание опыления семенами воздушная изоляция должна быть не менее 1000 м на открытой местности и 500 м на защищенной территории. Сортировку в семеноводческих технологиях проводят после начала цветения и 2-3 раза после уборки зеленых плодов. Зарубежные гибриды можно определить по изменению окраски и твердости скорлупы. Семена отбирают или убирают за один прием комбайном МОП-1,4, платформой ПТ-3,5. Отделенные и промытые семена сушат при влажности 9%. Семена Патиссона собирают вручную. Затем их ферментируют в небольшом количестве воды в течение 1-2 дней. В самоочистительных машинах К-21, К-531, К-541, в пневмоколонке ОНС-2, МСС-2,5 очищают в пневмостоле и сортируют по

сортам. Плоды патиссона – многосемянные ложные ягоды, то есть тыквы, их масса колеблется от 10 г до 80 г. Патиссон хорошо растет в жаркую и теплую погоду. Меняется в прохладную погоду. Температура может умереть при 0-1 градусе. Необходимая температура во время цветения и плодоношения патиссона 28-32 градуса. Если температура опускается до 12-15 градусов, цветок увядает, уходит, перестает расти и постепенно засыхает. Устойчив к засухе. Их качество зависит не только от малого расхода воды, но и от количества воды, поглощаемой из почвы через корни. Овощная культура Патиссон - однолетнее травянистое растение завод. Его привезли из Америки в 17 веке 200 лет назад это было даже в Сибири культивируется. Последние 10 февраля выращивать Патиссон под пленкой сажают днем. Проросшие саженцы берут в стаканчики. Чашки 10 должен быть см глубиной. Смешивается с торфом, древесной стружкой и песком. наполненный Состав должен быть в соотношении 5:4:1. Сначала почвенная смесь положите его в стакан и перемешайте, чтобы он был готов. Добавьте к этой смеси добавляют 5 г сульфата калия, 6 г суперфосфата, 7 г сульфата аммония и 6 г извести. Готовый раствор тщательно перемешивают и заливают. 2-3 семени на 1 стакан вкладывается, затем накрывается пленкой. После этого температура днем 22-25 градусов, ставится в месте где ночью 15-17 градусов дует ветер и меняется воздух должен стоять. Семена, растущие под пленкой, иногда поливают небольшими порциями. ты должен стоять. Не забывайте проветривать теплицу после полива. Через 1, 1,5 недели откройте рассаду в теплице в первую неделю марта. посажены в поле.

При выращивании Патиссона в домашних условиях или под пленкой через 20-30 дней затем дает 2 или 3 настоящих листа. В открытом поле конец марта и апрель посадили на головы. Почва, в которой посажено растение, должна быть хорошо защищена. Если почва будет соленой, растение будет расти очень плохо. В почву для этого следует смешать необходимые удобрения и создать нейтральную среду. Если эта тыква в поле, Если посажены патиссон, огурец и кабачок, патиссон на этом месте сажать нельзя. Подготовить землю к посадке лучше осенью.

- Если почва торфяная, внесите в нее чайную ложку калия на глубину 20-25 см. сульфат, 2 кг органического удобрения, 2 столовые ложки опилок и одна чайная ложка следует добавить суперфосфат. Это соответствует 1 квадратному метру.
- Если почва песчаная, осенью ее следует перекопать лопатой на 2-3 кг. необходимо добавить торф, опилки, суперфосфат. Это соответствует 1 квадратному метру.
- Если почва черная, добавить 1 столовую ложку порошка суперфосфата, 2 кг древесины необходимо вносить натуральное минеральное удобрение – золь из стружки и древесного кустарника.

В конце марта, когда температура достигает 14-15 градусов, поле пропалывают. готовится, посадка патиссона в основном зависит от температуры почвы. Совместите отверстия подготовка помогает прогреть почву. Оплодотворение. Появление горьких веществ в составе тыквы связано с нарушением водного режима. Скорее всего, почва долгое время остается сухой. При этом азотные и фосфорные удобрения замерзают, не впитываясь. Полив тыквенных культур следует проводить регулярно. Поливать нужно, не расправляя листья. В жаркую погоду растения следует поливать 2-3 раза.

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