IMPORTANT ECONOMIC CHARACTERISTICS OF CHEESE SAMPLES FROM ICARDA INTERNATIONAL ORGANIZATION

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Abstract. *This article describes the analysis of data on the growth, development, biometric and productivity indicators of 36 samples of pea varieties from the international organization ICARDA in the typical gray soil climate of Tashkent region.*

Keywords: *ICARDA, chickpea, Cicer arietinum L., experiment, variety, seed, protein, stalk, pod, quintal, hectare, yield.*

Usage. Chickpea grain is used in human nutrition, cereals are prepared from grain, various dishes can be prepared, flour is added to pastries, in bread making, 10–20% wheat flour is added to bread making, and artificial coffee is prepared. Grains contain 19-33% of protein, 4-7% of fat, 48-61% of carbohydrates, 2-12% of fiber, 2-5% of ash and vitamins. Organic acids (malic and others) contain in the biomass and hay, therefore, animals are not eaten in pure form. Chickpea is a good preceding crop for field crops; during the growing season, 50-70 kg of biological nitrogen accumulates in the soil.

Table 1. Chickpea sown area, yield and production (FAO data for 2021)

Countries of the world	Sown area, 000 ha	Yield, q/ha	Grain production, 000 tons
In the world	13,500.0	9.7	13,100.0
Australia	2,630.0	10.6	281.2
India	9,547.0	10.4	9,937
Iran	456.0	4.3	200.0
Kazakhstan	67.5	6.6	44.9
Malawi	160.0	8.3	133.9
Mexico	95.8	21.1	202.8
Myanmar	379.0	13.1	499.0
Pakistan	943.0	4.7	446.0
Russia	78.1	10.0	78.5
USA	79.7	10.5	84.2
Turkey	517.7	12.1	630.0
Ethiopia	208.0	20.8	435.1
Uzbekistan	15.0	13.4	20.2

History. Homeland of chickpeas are South-Western Asia. Chickpeas are cultivated in India, Italy, Greece, Bulgaria, Egypt, Algeria, Morocco, Turkey, and Iran. In India, organic acids are

obtained from chickpeas. In Central Asia, chickpeas have long been cultivated. In the world, chickpeas are cultivated on an area of 13.5 million hectares, including in India – 9.6 million hectares. The average grain yield is 9.7 q/ha, and gross production is 13.1 million tons.

Systematics. Chickpea belongs to the legume family – *Fabaceae* to the genus Cicer L. The genus includes 27 species, of which 22 are perennial species. Widely distributed along the Mediterranean. Only one type of chickpea is cultivated – *Cicer arietinum L.* It is cultivated, annual, grassy, widely distributed. Varieties of cultural chickpeas: 1) Southern European – *proles loheneicum G. Pop,* 2) Middle European – *proles franscaucasicum G. Pop.* 3) Anatolian – *proles turcicum G Pop.* To determine the types of chickpeas: the shape of the grain, the color of the grain, branching is determined.

Among the crops grown in our country, one of the plants rich in protein, resistant to heat and drought, which has the property of increasing soil fertility, is the local pea - "Cicer arietinum L." is a plant. Native pea plants have nitrogen-fixing (120 - 150 kg/ha) Rhizobium bacteria in their roots, which absorb free nitrogen from the atmosphere and are readily absorbed by the plant.
Therefore, in order to plant peas on a large scale and make a worthy contribution to increasing its productivity, field experiments were conducted to study the growth, development and productivity indicators of the samples of pea varieties brought from the international organization ICARDA in the conditions of typical gray soils of Tashkent region.

Experiment methodology.

The scientific research work was carried out in 2007-2008 at the agricultural scientific research and educational experimental farm of ToshDAU, located in Qibray district. In the experiment, the local "Uzbekistan-32" variety was controlled, and 35 new variety samples brought from Syria and Turkey were studied.

The main goal of scientific research work is to isolate high-yielding varieties that are resistant to winter, disease, heat and drought from the varieties planted in the autumn season.

800 m3 was irrigated to collect moisture in the experimental field. Then, after 6 days, autumn plowing was carried out at a depth of 28-30 cm, chisel - harrowing. After mulching, the distance between the plows on the MTZ-80 tractor was 70 cm.

Since the seed sent from abroad is very small, the number of replicates in the experiment is 3, each replicate is 10 meters long (3 x 10 = 30 m) and the experimental area (30 x 25.2 (36 x 0.7 = 25.2m) is 756.0 m2 In the fall, pea variety samples were planted on November 5.

Analysis of experimental results.

By the second ten days of February, it was observed that the lawns of pea varieties sprouted. However, the number of plant balls was low in some varieties. It can be estimated that these varieties have a lower level of winter resistance.

Table 2

Important economic characteristics of pea variety samples

№	Varieties name	Plant stem height, cm	The height of the first pod emergence, cm	The number of pods in 1 plant, pcs	1000 seed weight, grams	Grain yield, ts/ha
1	"Uzbekistan - 32" Control type	67,5	16,8	125	361,9	29,2
2	FLIP - 18-10 C	69,8	17,5	118	359,3	25,7
3	FLIP - 18 -11 C	54,3	20,5	97	291,7	20,7

4	FLIP - 18-13 C	46,7	22,1	88	396,5	16,1
5	FLIP - 18-14 C	64,2	16,4	116	376,8	23,6
6	FLIP -18-15 C	67,5	18,5	108	355,9	22,6
7	FLIP -18-16 C	60,1	20,8	97	410,2	20,3
8	FLIP - 18-17 C	41,3	27,4	53	433,4	7,8
9	FLIP - 18-18 C	49,8	23,8	77	342,3	13,6
10	FLIP - 18-19 C	52,6	20,1	96	398,5	20,1
11	FLIP - 18110 C	57,1	18,9	100	352,0	22,5
12	FLIP - 18-11 C	55,3	20,0	112	360,4	23,8
13	FLIP - 18-12 C	62,4	16,1	123	371,6	25,5
14	FLIP - 18 -13 C	57,9	14,8	105	356,7	23,7
15	FLIP - 18-14 C	65,2	20,2	117	346,6	25,3
16	FLIP - 18-15 C	61,2	18,6	108	355,6	23,2
17	FLIP - 18-16 C	48,5	26,4	93	385,4	16,6
18	FLIP - 18-17 C	45,4	22,3	89	368,2	14,6
19	FLIP - 18-18 C	51,8	18,4	97	356,2	15,4
20	FLIP - 01-32 C	77,8	11,9	135	393,1	34,6
21	FLIP -18-20 C	63,0	17,5	117	331,9	28,9
22	FLIP - 04-18 C	71,3	14,0	116	367,1	30,0
23	FLIP - 03-63 C	74,6	12,6	132	374,4	33,3
24	FLIP - 04-24 C	69,7	19,4	117	399,2	25,5
25	FLIP - 18-25 C	65,2	17,8	113	376,1	24,3
26	FLIP - 18-26 C	57,3	21,3	97	366,7	19,7
27	FLIP - 18127 C	63,4	18,7	101	386,0	25,3
28	FLIP - 18-28 C	70,8	17,2	107	360,5	28,1
29	FLIP - 01-63 C	75,6	12,5	128	331,0	33,5
30	FLIP - 18-30 C	62,1	22,4	116	470,2	25,9
31	FLIP - 02-61 C	71,4	13,4	131	401,2	31,9
32	FLIP - 18-32 C	58,4	20,3	114	398,9	25,1
33	FLIP - 18-33 C	60,3	19,6	119	386,8	26,9
34	FLIP - 18-34 C	49,7	25,5	106	341,6	18,4
35	FLIP - 18-35 C	56,5	22,9	110	366,6	19,7
36	FLIP - 18-36 C	61,8	18,5	115	366,0	23,3

It should be emphasized that the low number of plant balls significantly affected the indicators of grain yield.

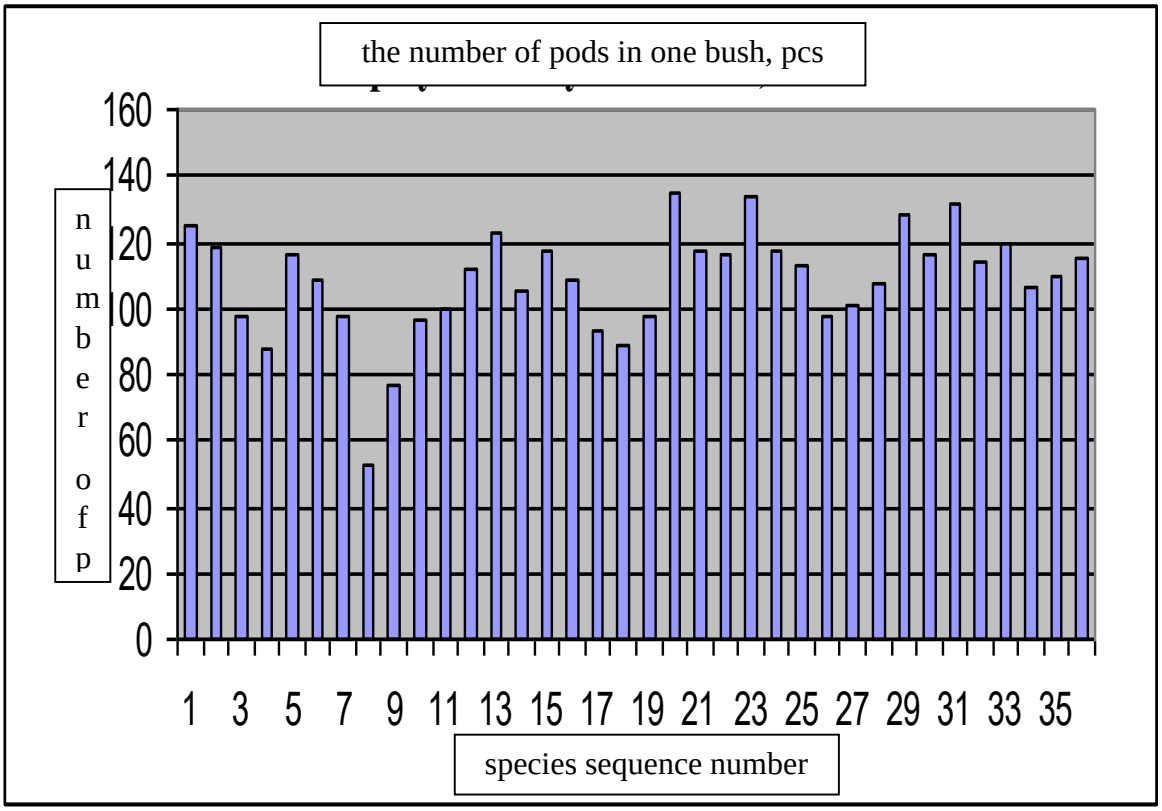
When the stem height of chickpea varieties was determined at the end of the growing season, it was observed that chickpea variety samples had different heights depending on their biological characteristics. Control in samples of the variety inferior to the variety "Uzbekistan - 32": FLIP - 18-17 S - 41.3 cm; FLIP - 18-17 S – 45.4 cm; FLIP - 18-13 S -43.7 cm; FLIP - 18-16 S – 48.5 cm; FLIP - 18-18 S – 49.8 cm; FLIP - 18-18 S - 51.8 cm, and the height of the stem in the following varieties that form an upright stem and form a higher stem compared to the control variety: FLIP - 04-24 S - 69.7 cm; FLIP - 18-28 S – 70.8 cm; FLIP - 04-18 C – 71.3 cm; FLIP -

02-61 C – 71.4 cm; FLIP - 03-63 C – 74.6 cm; FLIP - 01-63 C – 75.6 cm and FLIP - 01-32 C – 77.8 cm. It was found that the height of the stem in the rest of the varieties was average.

In the pea plant, the height of the first pod above the ground on the stem is of great practical importance. Because the location of the first pod is higher than the surface of the earth, it makes it possible to collect the grain crop with the help of combine harvesters, otherwise the harvester organs of the combine harvester may get stuck in the ground and break and not collect the crop. According to the analysis of the received data, the number of pods formed in one plant was the least in the FLIP - 18-17 S variety - 53 pieces, and the most in the FLIP - 01-32 C variety - 135 pieces. Compared to the control variety, FLIP - 18-17 S produced 72 fewer pods, and FLIP - 01-32 C produced 10 more pods.

Chart 1 below shows the important economic characteristics of these varieties:

Diagram 1



When the weight of 1000 seeds was determined by counting, it was found that the varieties had different weights based on their biological characteristics.

For example: the control "Uzbekistan-32" variety had a grain yield of 29.2 t/ha, while the FLIP-18-17 S variety yielded only 7.8 t/ha. In the experiment, compared to the control variety, in the following varieties: FLIP - 01-32 S - 34.6 ts/ha, FLIP - 01-63 S - 33.5 ts/ha, FLIP - 03-63 C - 33.3 ts/ha; FLIP - 02-61 C – 31.9 ts/ha; FLIP - 04-18 C – 30.0 ts/ha yield indicators were found to be high.

Summary. According to the obtained results, high yield FLIP - 01-32 S, FLIP - 01-63S, FLIP - 03-63 C; FLIP - 02-61 C; FLIP - 04-18 C varieties - first propagated in the conditions of typical gray soils of the Tashkent region, and then recommended to farmers and peasant farms for cultivation.

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