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STUDY AND EVALUATION OF WHITE CLOVER SAMPLES AS A SOURCE MATERIAL FOR SELECTION IN THE CONDITIONS OF PRECARPATHIAN

One of the most common perennial legume grasses of Precarpathian, a valuable component of grass mixtures in improving natural hayfields and creating cultivated pastures is white clover *(Trifolium repens* L.*)*. It tolerates trampling and grazing by animals, is more winter hardy, and by protein content do not concede to red clover and hybrid clover. Due to the ability of nitrogen fixation thanks to presence of nodule bacteria on its roots, the agrophysical, agrochemical and biological properties of the soil are improved. An important role in the formation of the productivity of white clover belongs to the variety, which is achieved by conducting selection work, the first and main stage of which is the study and evaluation of initial material.

The data of scientific research carried out on the experimental basis of Precarpathian Department of Scientific Research of the Institute of Agriculture of Carpathian Region of NAAS for 2021 are presented. The material for the study were 24 collection samples of white clover of various ecological and geographical origin. The initial evaluation of the collection material on the main economic and valuable features was carried out.

According to one-year data, the duration of the growing season of the studied samples was 126–134 days. The plant height was 20.4–29.4 cm, daily growth – 0.23–0.28 cm, leafiness of plants – 30.0–61.1 %. The yield of green mass on average for two mowes was 2.05–3.10 kg/m^2 and the yield of dry matter was 0.302–0.420 kg/m^2. The highest yield of green mass had such samples as UJ 0600796 – 3.10 kg/m^2, PFZ 00372 – 3.00 kg/m^2, UJ 0600658 – 3.05 kg/m^2, PFZ 02112 – 3.02 кг/m^2 and dry matter −UJ 0600691 – 0.404 kg/m^2, UJ 0600796 – 0.420 kg/m^2, PFZ 00372 – 0.417 kg/m^2, PFZ 02314 – 0.410 kg/m^2, UJ 0600658 – 0.414 kg/m^2. The seed productivity of collection samples was from 9.80 to 14.50 g/m^2. The analysis of the structure of the seed productivity showed, that the diameter of the head of the studied samples was from 19.5 to 28.0 cm, the number of flowers in one head – from 42.3 to 83.3 pcs, the number of seeds in one head – from 43.6 to 110.5 pcs, the weight of 1000 seeds – 0.55 – 0.78 g.

Keywords: white clover, variety, selection, collection nursery, initial material, productivity.

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Вивчення та оцінка зразків конюшини повзучої як джерела вихідного матеріалу для селекції в умовах Передкарпаття

Однією з найбільш поширених багаторічних бобових трав Передкарпаття, цінним компонентом травосумішок при поліпшенні природних сінокосів і створенні культурних пасовищ є конюшина повзуча *(Trifolium repens* L.*)*. Вона добре переносить витоптування і випасання тваринами, є більш зимостійка, а за вмістом білка не поступається конюшині лучній та конюшині гібридній. Завдяки здатності до азотфіксації за рахунок наявності на її коренях бульбочкових бактерій поліпшуються агрофізичні, агрохімічні й біологічні властивості ґрунту. Важлива роль у формуванні продуктивності конюшини повзучої належить сорту, що досягається за рахунок ведення селекційної роботи, першим і основним етапом якої є вивчення та оцінка вихідного матеріалу.

Представлено дані наукових досліджень, проведених на експериментальній базі Передкарпатського відділу наукових досліджень Інституту сільського господарства Карпатського регіону НААН за 2021 р. Матеріалом для досліджень були 24 колекційні зразки конюшини повзучої різного еколого-географічного походження. Проведено первинну оцінку колекційного матеріалу за основними господарсько цінними ознаками.

За однорічними даними, тривалість вегетаційного періоду досліджуваних зразків становила 126–134 доби. Висота рослин була 20,4–29,4 см, добовий приріст – 0,23–0,28 см, облиствленість – 30,0–61,1 %. Врожайність зеленої маси в середньому за два укоси становила 2,05–3,10 кг/м^2, а вихід сухої речовини – 0,302–0,420 кг/м^2. Найбільший врожай зеленої маси мали зразки UJ 0600796 – 3,10 кг/м^2, PFZ 00372 – 3,00 кг/м^2, UJ 0600658 – 3,05 кг/м^2, PFZ 02112 – 3,02 кг/м^2, сухої речовини: UJ 0600691 – 0,404 кг/м^2, UJ 0600796 – 0,420 кг/м^2, PFZ 00372 – 0,417 кг/м^2, PFZ 02314 – 0,410 кг/м^2, UJ 0600658 – 0,414 кг/м^2. Насіннєва продуктивність колекційних зразків була від 9,80 до 14,50 г/м^2. Проведений аналіз структури врожаю насіннєвої продуктивності показав, що діаметр головки досліджуваних зразків становив від 19,5 до 28,0 см, кількість квіток в одній головці − від 42,3 до 83,3 шт., кількість насінин в одній головці – від 43,6 до 110,5 шт., маса 1000 насінин – 0,55–0,78 г.

Ключові слова: конюшина повзуча, сорт, селекція, колекційний розсадник, вихідний матеріал, продуктивність.

Introduction. In the agriculture of different countries of the world, the most common fodder crops that solve the problem of increasing the production of plant protein and increasing soil fertility are legumes [13, 26]. Nowadays, the lack of digestible protein in fodder can be minimized if the specific weight of perennial leguminous grasses in field sowing is 80 %. These grasses are able to provide high-protein fodder from early spring to

late autumn, are a reliable means of protecting the soil from erosion processes, enrich the soil with organic matter, improve its structure, use nutrients from difficult-to-dissolve forms from deeper horizons, improve the nitrogen balance due to its biological fixation [2, 3, 11]. Therefore, perennial leguminous grasses guarantee the entry of organic mass into the soil environment, and with it, the main elements of plant nutrition, much more than annual fodder plants [28, 29]. Among the most common perennial leguminous grasses in Ukraine (alfalfa, safflower, white and yellow sweet clover, bird's-foot trefoil, meadow clover), creeping clover has a special value as a leguminous component for meadow and field grass seeding [14, 25].

Creeping or white clover (*Trifolium repens* L.) is a perennial plant from the legume family (*Fabaceae*) of the leguminous order (*Fabales*). The plant is short, 10–30 cm tall. It has a long, creeping, branched stem that takes root at the nodes. The root system is branched and penetrates the soil up to 1 m. The foliage is high, the inflorescences are white or pale pink heads. The seeds are small, yellow in color [1].

According to the type of economic use, creeping clover is hay-pasture, pasture and pasture-hay. Creeping clover of the hay-pasture type – tall, bush is upright, has large leaves, its stems are weakly or moderately rooted, grows quickly in spring and after mowing. The pasture type is a low-growing, small-leaved population, the bush creeps along the ground, the stems grow well and take root. The plants of the pasture-hay type are medium-ripening, have medium-sized leaves, a raised bush shape, stems take root well, and grow back quite quickly after mowing.

Creeping clover is a valuable pasture plant. Its advantage over other leguminous grasses is its high nutritional value, resilience, resistance to trampling, durability (it can grow in a grass stand for 8–10 years), tolerates grazing well and grows quickly after digestion. Trampling by animals does not suppress the herbage of creeping clover, but on the contrary, increases the growth of pasture forage. It is well eaten by all types of livestock and does not cause tympanitis. It makes it possible to obtain 350–400 c/ha of green mass in 4–5 cycles of grazing. The quality of fodder from creeping clover is higher than from meadow clover, since there are no stems in the cut mass, it consists of leaves and petioles, and is willingly eaten by all types of animals in a green and dry state [30].

As one of the valuable perennial legumes, clover is a good tool for increasing soil fertility. Due to the presence of nodule bacteria on its roots, it has a high nitrogen-fixing capacity, accumulating 100–300 kg/ha of nitrogen annually in the above-ground mass. Nitrogen accumulated in the

roots and post-harvest residues of clover, after their decomposition in the soil, is well absorbed by other plants, so this crop is a good precursor for other rotation crops [6, 8, 12, 22].

Creeping clover is a multipurpose field crop. It is most often sown in grass mixtures with grasses such as meadow ryegrass (*Lolium perenne* L.), meadow fescue (*Festuca pratensis* L.). When used for grazing, such grass mixtures are more productive than with other types of clover. They provide high and stable collections of dry matter with a better ratio of protein, carbohydrates, are easily dried and ensiled [4, 7, 18, 21].

An important factor in increasing the efficiency of clover sowing is the introduction into production of high-yielding varieties of the intensive type, which ensure an increase in the yield of green mass, dry matter, seeds and product quality. Many varieties of creeping clover were created in Belarus (Dukhmiany, Charodiei, Matvei, Volat), Lithuania (Nyamuniai, Suduvyai), Germany (Lirepa, Liflex, Jura, Merlin), Denmark (Klondike, Rivendell), the Netherlands (Tasman) [19].

The State Register of plant varieties suitable for distribution in Ukraine for 2022 (as of January 27, 2022) includes 7 varieties of creeping clover, of which 3 varieties are represented by Ukrainian selection (Danaia – Institute of Fodder and Agriculture of Podillia National Academy of Sciences, as well as Lishnianska and Skhidnychanka – Institute of Agriculture of the Carpathian Region of the National Academy of Sciences) [10]. These are varieties for pasture and pasture-haymaking use, early and medium-ripening, highly productive.

Considering the great value of creeping clover, the expansion of its cultivated areas should become an important task of agricultural production. In this regard, breeders of Precarpathia are working on creating varieties of this crop with increased fodder and seed productivity, which would be characterized by rapid regrowth of grass after mowing and grazing, resistant to adverse environmental factors, varieties of various types of use [23, 24].

With the creation of new varieties, the problem of valuable raw material as an inexhaustible source of genetic diversity of traits and properties always remains in the center of attention. Starting material in breeding is any genetic material that the breeder can use in his practical work to create new varieties that would meet the purpose of the breeding program. Source material can be: collections from the National Center of Plant Genetic Resources of Ukraine and National Banks of other countries, selection varieties of domestic and foreign selection, natural populations, hybrid material, mutant and polyploid forms, etc. [5, 27]. The value of the source material for selection is very important. It is the basis for the

selection of samples that are well adapted to local soil and climatic conditions and have the potential to transmit valuable traits to their descendants in their heredity. In this regard, the mobilization of the genetic diversity of the original forms is the first and very important stage on the way to the creation of varieties. This is the most responsible stage of the breeding process, which determines the final result of the breeder's work. The larger and more diverse the source material, the more effective the selection work will be. When creating new starting material, it is important to involve more distant forms – carriers of valuable genes, which makes it possible to significantly expand the genetic base of breeding material. Preference should also be given to local samples and populations, as they are adapted to the climatic conditions of the growing region. For this purpose, the collection material of various ecological and geographical origin is studied and evaluated and the best samples are involved in further selection work [9, 15, 16].

Materials and methods. In order to study and evaluate the source material, we established a collection nursery of creeping clover. The research was conducted in 2021 at the experimental base of the Transcarpathian Department of Scientific Research of the Institute of Agriculture of the Carpathian Region of the National Academy of Sciences (the village of Lishnia, Drohobytsky District, Lviv Region).

The soil is typical for the indicated region, drained by potter's drainage, sod-medium podzolic, surface-glazed, medium-acid loam formed on deluvial sediments, the arable (0–20 cm) layer of which is characterized by the following agrochemical parameters: humus content (according to Tyurin) – 1.22 %, pH of salt extract (potentiometric method) – 4.6, hydrolytic acidity (according to Kappen-Hilkovits) – 4.23 mg-eq. per 100 g of soil, Hr (sum of absorbed bases) – 11.8 mg-eq. per 100 g of soil, mobile forms of phosphorus (according to Kirsanov) – 118 mg, exchangeable potassium (according to Kirsanov) – 82 mg, easily hydrolyzed nitrogen (according to Kornfield) – 108 mg per 1 kg of soil.

24 creeping clover samples of different ecological and geographical origins served as the research material. The Skhidnychanka variety was taken as the standard (Table 1).

Preparation and tillage of the soil for sowing the creeping clover collection were generally accepted for the Precarpathian zone. The predecessor – perennial grasses. Planting of experimental plots was carried out manually, by summer sowing without a cover. The registered area of the site is 1 m^2. In the spring, clover plants were fed with mineral fertilizer in

the form of nitroammofoska, loosening of the rows, weeding from weeds was carried out.

1. Researched samples of creeping clover of the collection nursery in 2021

National catalogue No.	Institution's registration number	Samples	Country of origin	Received from
1	2	3	4	5
UJ 0600799 (St)	PFZ 00507	Skhidnychanka	Ukraine	IACR
	PFZ 02125	ID from v. Dotnuviai (4 row 16 bush)	Ukraine	IACR
	PFZ 02233	GP № 1079×№ 1080	Ukraine	IACR
UJ 0600692	PFZ 01081	GP Lishnianska × Dotnuviai	Ukraine	IACR
	PFZ 01761	ID from v. Gomelska	Ukraine	IACR
UJ 0601027	PFZ 01785	ID GP AO_{425}× Lishnianska	Ukraine	IACR
UJ 0600691	PFZ 01080	MD from v. Dotnuviai	Ukraine	IACR
	PFZ 02110	GP Skhidnychanka × Atoliai	Ukraine	IACR
	PFZ 00490	GP Milka × Lishnianska	Ukraine	IACR
UJ 0601031	PFZ 01792	ID from v. Kirovska	Ukraine	IACR
UJ 0600636	PFZ 00705	№ 1347	Lithuania	LIZ
UJ 0600796	PFZ 00483	ID GP Regol × Lishnianska	Ukraine	IACR
	PFZ 00372	Sprynt K-46143	Russia	BIP
UJ 0600156	PFZ 00847	Danaia	Ukraine	ІКСGP
	PFZ 02314	ID from v. Rivendell	Ukraine	IACR

1	2	3	4	5
	PFZ 02124	ID from v. Dotnuviai (4 row 40 bush)	Ukraine	IACR
UJ 0600659	PFZ 00651	MD GP Lishnianska × Volat	Ukraine	IACR
UJ 0600658	PFZ 00650	ID GP Lishnianska × Otavnyi	Ukraine	IACR
	PFZ 02112	ID from v. Bitunai (12 bush 4 row)	Ukraine	IACR
	PFZ 00142	K-34	Poland	BIP
UJ 0600437	PFZ 00497	DP	Ukraine	IACR
UJ 0600810	PFZ 01308	Nemuniai	Lithuania	LIZ
UJ 0600648	PFZ 00797	Dotnuviai	Lithuania	LIZ
UJ 0600440	PFZ 00499	DP	Ukraine	IACR
UJ 0600634	PFZ 00703	Atoliai	Lithuania	LIZ

Note: ID – individual selection; MD – mass selection; GP – hybrid population; DP – wild population;– Institute of Agriculture of the Carpathian Region; ICSHP – Institute of Fodder and Agriculture of Podillia; LIZ – Lithuanian Institute of Agriculture.

The planting of the collection nursery and the research in it were carried out in accordance with the "Methodology of scientific research in agronomy" [17] and "Methodology of selection of perennial leguminous and cereal grasses in Transcarpathia" [20].

The samples were evaluated according to the main economic and valuable characteristics. During the growing season, phenological observations were made. Accounting for the yield of green mass and the yield of dry matter was carried out using the haystack method (2 mowes) in the phase of the beginning of flowering, the yield of seeds – as it reaches maturity (the phase of full ripeness) by threshing, wiping, cleaning and weighing separately from each plot. Statistical processing of fodder and seed productivity data was carried out by the method of variance analysis on a PC using a special application program for Windows 98.

Results and discussion. Weather conditions in 2021 were typical for Precarpathia and favorable for the growth, development and formation of clover productivity. So, the beginning of spring growth of plants was observed on March 26, full growth on April 5. After the end of wintering,

the density of creeping clover crops was in the range of 54–62 plants/m^2. Pasture maturity occurred after 32 days (April 26), and mowing maturity after 75–77 days (June 8–10). On the basis of the obtained data, the collected material was conditionally divided into two maturity groups by the duration of the growing season from the beginning of spring growth to the economic maturity of the seeds: 1) medium maturity – 126–130 days (11 samples); 2) late ripening – 131–134 days (13 samples).

Biometric measurements showed that the height of creeping clover plants when used for haymaking in the first mowe ranged from 20.4 to 29.4 cm, the daily growth rate was 0.23 to 0.28 cm. The tallest specimens were UJ 0600156, PFZ 02124, UJ 0600659, UJ 0600658, UJ 0601031, PFZ 02110.

An important indicator that characterizes the structure and quality of the green mass of perennial grasses is the leafiness of plants. After all, it is the leaves that contain the largest amount of nutrients. According to the research results, the collection of creeping clover is conditionally divided by us into samples that had a low level of foliage – 28.4–38.2 % (8 samples), an average level of foliage – 40.7–50.5 % (7 samples) and samples with high leafiness – 51.3–61.1 % (9 samples). Samples UJ 0600796 (60.2 %), PFZ 00372 (61.1 %), UJ 0600691 (57.1 %), PFZ 02124 (56.2 %), PFZ 00142 (56.0 %) had the best foliage.

The yield of green mass and the yield of dry matter are the most important criteria for the selection of samples for use as parental components in breeding for productivity. According to one-year data, 15 samples exceeded the green mass standard by 0.03–0.78 kg/m^2. The following samples had the highest yield of green mass on average for two mowes: UJ 0600796 – 3.10 kg/m^2, PFZ 00372 – 3.00 kg/m^2, UJ 0600658 – 3.05 kg/m^2, PFZ 02112 – 3.02 kg/m^2.

In terms of dry matter yield, 17 samples exceeded the standard Skhidnychanka variety by 0.001–0.094 kg/m^2. The highest yield of dry matter on average for two mowes was noted in varieties UJ 0600691 – 0.404 kg/m^2, PFZ 02110 – 0.390 kg/m^2, UJ 0600796 – 0.420 kg/m^2, PFZ 00372 – 0.417 kg/m^2, PFZ 02314 – 0.410 kg/m^2, UJ 0600658 – 0.414 kg/m^2, PFZ 02112 – 0.400 kg/m^2 (Table 2).

2. Forage productivity and its structural elements of creeping clover samples in the collection nursery, 2021

No. of National catalogue or institution's registration	Height of plants, cm	Foliage, %	Vegetation period duration, days	Green mass yield		Dry matter yield	
				kg/m^2	± to St	kg/m^2	± to St
UJ 0600799 (St)	24,5	48,0	130	2,32	–	0,326	–
PFZ 02125	24,0	35,2	134	2,20	-0,12	0,312	-0,014
PFZ 02233	24,1	50,5	134	2,55	+0,23	0,341	+0,015
UJ 0600692	22,4	51,3	134	2,50	+0,18	0,335	+0,009
PFZ 01761	22,0	48,1	130	2,60	+0,28	0,373	+0,047
UJ 0601027	26,6	30,0	126	2,10	-0,22	0,302	-0,024
UJ 0600691	26,4	57,1	130	2,65	+0,33	0,404	+0,078
PFZ 02110	28,2	46,6	130	2,80	+0,48	0,390	+0,064
PFZ 00490	25,8	44,4	132	2,46	+0,14	0,359	+0,033
UJ 0601031	28,0	30,1	132	2,05	-0,27	0,308	-0,018
UJ 0600636	22,3	40,7	130	2,40	+0,08	0,350	+0,024
UJ 0600796	21,0	60,2	134	3,10	+0,78	0,420	+0,094
PFZ 00372	21,0	61,1	132	3,00	+0,68	0,417	+0,091
UJ 0600156	29,4	38,2	128	2,30	-0,02	0,310	-0,016
PFZ 02314	27,3	51,8	130	2,75	+0,43	0,410	+0,084
PFZ 02124	29,0	56,2	128	2,37	+0,05	0,319	-0,007
UJ 0600659	28,0	52,1	128	2,85	+0,53	0,338	+0,012
UJ 0600658	28,0	45,0	130	3,05	+0,73	0,414	+0,088
PFZ 02112	21,1	42,0	132	3,02	+0,70	0,400	+0,074
PFZ 00142	20,8	56,0	134	2,15	-0,17	0,327	+0,001
UJ 0600437	20,4	32,3	132	2,25	-0,007	0,332	+0,006
UJ 0600810	25,0	28,4	130	2,18	-0,14	0,318	-0,008
UJ 0600648	22,3	36,1	132	2,12	-0,20	0,322	-0,004
UJ 0600440	21,2	52,0	134	2,35	+0,03	0,328	+0,002
UJ 0600634	22,5	30,1	132	2,31	-0,01	0,342	+0,016
LSD_{05} 2021				0,21		0,18	

Seed yield is a complex indicator that depends on many individual structural indicators of the plant. Indicators determining the structure of generative organs have the greatest influence on the seed productivity of creeping clover. Therefore, to assess the seed productivity, an analysis of the crop structure was carried out, in which the diameter of the head, the

number of flowers and the number of seeds in one head, the weight of 1000 seeds were determined (Table 3).

3. Seed productivity and crop structure of creeping clover samples in the collection nursery, 2021

No. of National catalogue or institution's registration	Head diameter, mm	Number of flowers in 1 head, pcs.	Number of seeds in 1 head, pcs.	Weight of 1000 seeds, g	Seed yield	
					g/m^2	± to St
UJ 0600799 (St)	21,8	66,4	74,2	0,67	11,30	–
PFZ 02125	22,0	60,0	70,5	0,63	11,00	-0,3
PFZ 02233	20,5	76,2	65,6	0,66	11,50	+0,2
UJ 0600692	20,0	42,3	55,0	0,58	10,00	-1,3
PFZ 01761	21,0	58,0	50,0	0,60	11,20	-0,1
UJ 0601027	21,5	66,0	75,0	0,65	11,60	+0,3
UJ 0600691	19,5	51,0	43,6	0,55	9,80	-1,5
PFZ 02110	20,0	63,0	66,4	0,62	10,80	-0,5
PFZ 00490	23,0	68,0	90,2	0,70	13,40	+2,1
UJ 0601031	21,0	53,0	57,0	0,61	10,50	-0,8
UJ 0600636	22,0	60,0	88,0	0,66	11,80	+0,5
UJ 0600796	24,5	78,6	110,5	0,76	14,50	+3,2
PFZ 00372	26,0	59,4	100,4	0,74	13,60	+2,3
UJ 0600156	20,5	55,5	45,0	0,61	11,20	-0,1
PFZ 02314	21,5	73,0	70,8	0,64	12,80	+1,5
PFZ 02124	23,0	71,0	68,0	0,62	12,10	+0,8
UJ 0600659	23,0	70,2	95,5	0,70	13,0	+1,7
UJ 0600658	22,5	63,0	75,6	0,70	12,50	+1,2
PFZ 02112	28,0	65,0	92,6	0,74	13,80	+2,2
PFZ 00142	25,5	55,0	85,3	0,72	13,20	+1,9
UJ 0600437	22,0	62,4	78,0	0,66	12,20	+0,9
UJ 0600810	23,0	83,3	105,4	0,78	14,00	+2,7
UJ 0600648	24,1	66,0	70,0	0,66	11,90	+0,6
UJ 0600440	20,7	63,2	65,5	0,58	11,00	-0,3
UJ 0600634	24,6	71,5	80,0	0,68	12,00	+0,7
LSD_{05} 2021					0,10	

The largest head diameter was in samples UJ 0600796 – 24.5 mm, PFZ 00372 – 26.0 mm, PFZ 02112 – 28.0 mm, PFZ 00142 – 25.5 mm, UJ 0600634 – 24.6 mm, UJ 0600648 – 24.1 mm.

The seed productivity of studied varieties of creeping clover was 9.80–14.50 g/m^2, the number of flowers in one head was 42.3–83.3 pcs., the number of seeds in one head was−43.6–110.5 pcs.

In the varieties we studied, the largest number of flowers in the head was in PFZ 02233 – 76.2 pcs., UJ 0600796 – 78.6 pcs., PFZ 02314 – 73.0 pcs., UJ 0600810 – 83.3 pcs. Not every flower in an inflorescence produces a fruit with seeds as a result of insufficient pollination and fertilization, which is determined by weather conditions and genetic characteristics of the variety. The largest number of seeds in the head were such samples as PFZ 00490 – 90.2 pcs., UJ 0600796 – 110.5 pcs., PFZ 00372 – 100.4 pcs., UJ 0600810 – 105.4 pcs., UJ 0600659 – 95.5 pcs., PFZ 02112 – 92.6 pcs. Among the samples with increased seed productivity, there were 7 that exceeded the standard Skhidnychanka variety by 1.7-3.2 g/m^2. The largest seeds (weight of 1000 seeds is 0.70-0.78 g) were noted for such samples as PFZ 00490, UJ 0600796, PFZ 00372, UJ 0600659, UJ 0600658, PFZ 02112, PFZ 00142, UJ 0600810.

The study of collection samples of creeping clover will continue in the next two years. Based on the results of the three-year data evaluation, we will select the best of them, which will be included in the further breeding work as a starting material for the creation of new high-yielding varieties of this crop.

Conclusions. As a result of the study of collection samples of creeping clover in 2021, it was established that:

1. The duration of the vegetation period of the studied samples from the beginning of spring growth to the economic maturity of the seeds was 126 – 134 days.

2. The highest plant height had samples UJ 0600658, UJ 0600659, UJ 0601031 – 28.0 cm, PFZ 02110 – 28.2 cm, PFZ 02124 – 29.0 cm, UJ 0600156 – 29.4 cm.

3. The best foliage was in samples UJ 0600796 – 60.2 %, PFZ 00372 – 61.1 %, UJ 0600691 – 57.1 %, PFZ 02124 – 56.2 %, PFZ 00142 – 56.0 %.

4. According to the yield of green mass on average for two mowes, the samples UJ 0600796 – 3.10 kg/m^2, PFZ 00372 – 3.00 kg/m^2, UJ 0600658 – 3.05 kg/m^2, PFZ 02112 – 3.02 kg/m^2 were the best, and on the output of dry matter UJ 0600691 – 0.404 kg/m^2, UJ 0600796 – 0.420 kg/m^2, PFZ 00372 – 0.417 kg/m^2, PFZ 02314 – 0.410 kg/m^2, UJ 0600658 – 0.414 kg/m^2, PFZ 02112 – 0.400 kg/m^2.

5. The seed productivity of the studied samples of creeping clover was 9.80–14.50 g/m^2, the diameter of the inflorescence (head) was 19.5–28.0 mm, the number of flowers in one head was 42.3–83.3 pcs., the number of seeds in one head is 43.6–110.5 pcs., the weight of 1000 seeds is 0.55–0.78 g.

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