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**VALUABLE GRADES SAMPLES
FOR SELECTION OF LENTIL
ON FRUITFUL QUALITY OF GRAIN**

Abstract. As is well-known, complex assessment of initial material has to be based on studying of morphological, physiological, anatomic and other biological features of plants that eventually it certainly affects fruitful qualities. Besides, development of morphological parameters of future grade for a specific condition is very considerable. Considering above stated in article data on phases of development and signs of efficiency of lentil are given. Highly productive samples of lentil are allocated: in the conditions of a semi-provided bogharic farming: LC046000223 L; LC046000103L; 23208; and in the conditions of the irrigated zone: K-184; LC046000223 L; LC046000103L; LC046000156L; 23108; 39229; 39113.

Keywords: lentil, a collection, grades samples, efficiency, fruitful qualities, a transfer, a floor a provided bogharic, a gene bank, the irrigated background.

Introduction. Lentil belongs to the most valuable food leguminous crops which are grown up mainly on grain which more than on a third consists of protein. Amino acids, irreplaceable for an organism, are a part of protein of lentil. Lentil dishes serve for us as suppliers of the main vitamins and minerals which are completely acquired by a human body. On iron content, for example, it does not have equal. Lentil has one more very valuable property – it does not accumulate in itself any harmful or toxic elements (nitrates, radionuclides and so forth). Thanks to it, the lentil which is grown up in every spot on the globe can be considered as an environmentally friendly product. Successful introduced and distribution of lentil on regions has to be based on development of basic and applied researches with involvement of selectors, agrotechnologists.

Cultivation of this culture causes certain difficulties is connected with biological features of plants of lentil. To number of such shortcomings refer low unstable productivity and insufficient technological effectiveness – as a short stalk, low attachment of the lower beans, degree of lodging, low tolerance to herbicides, unevenness of maturing, cracking of beans and falls of seeds [1-7].

Relevance. The lack of interest in cultivation of lentil at producers agricultural products is explained mainly by low productivity of the existing grades. Proceeding from a being of a problem, as the studied questions in terms of formation of potential efficiency of this culture, in the future it is necessary to turn and to separately decipher water and thermal balance and balance of nutritious elements that is necessary at removal of new grades [15].

Purpose of researches. Now a main objective of modern researches is diversification of crop production, this introduction of crops, removal of the grades having tolerance with good consumer and biotechnological properties. We were faced by a task to give a complex assessment of a grade to lentil samples on two backgrounds of agriculture of the southeast in the conditions of the pilot site (KazRSIFaPG).

In this regard the leading role in expansion of an area of cultivation of lentil belongs to studying and introduction in production of grades on the terms of a transfer allocated from a collection those numbers

which by results a research acceptable for this zone and also in the subsequent it would be possible to use as initial material for creation of new grades, in it the purpose of this work appears.

Methods of researches. Experiments were made on two scientific field hospitals (a semi-provided bogharic and the irrigated zone).

Crops consistent in triple frequency. Holding all agrotechnological actions on preparation for crops, care of crops (watering, loosening of row-spacings, destruction of weed vegetation), harvesting by the methods described in a technique of field experiment according to Dospekhov V. A.

Studying of elements of efficiency, assessment of grades samples on relative drought resistance were carried out by a technique of studying of a collection of leguminous cultures.

On the first year of a research studied the 96th grades of examples of various ecology-geographical origin of lentil, by results a research were selected on economic and valuable signs of 31 grades a sample for further studying in two scientific field hospitals of LLP "KazRSIFaPG" [6, p. 27], [7, p. 226].

Results of a research. It should be noted, as a result of the conducted researches grades samples which differ in the best indicators, according to research problems were established.

Morphological features were analyzed as their chronological manifestation, since crops time, finishing with cleaning.

Characteristic of the genetic resources of lentil kept in genebanks of the different countries is important for increase in efficiency of use of collections.

During the researches on two backgrounds the main economic and valuable signs were studied: duration of the vegetative period, height of plants, height of attachment of the lower beans, quantity of beans from a plant, weight is 1000 seeds from a plant, efficiency of a grade of samples, and indicators of quality of seeds (table 1).

Table 1 – Characteristic of collection samples on a complex of economic and valuable signs and properties on a floor to a bogharic "KazRSIFaPG"

Name Sample	The vegetative period (from shoots before maturing), the number of days	Height plants, cm	Height attachments of lower beans, cm	Quantity beans with plants, pieces	Weight 1000 seeds, Gram	Weight with grain allotments, gram
Vekhovskaya standard	77	35,9	21,7	28,6	59,5	19,11
LC046000246 L	80	39,8	21,1	25,5	56,1	21,59
K-6	79	37,2	21,4	20,8	49	23,12
LC04600023L	80	41,4	24,5	28,1	56,8	20,54
39227	81	35,8	18,9	27,4	58,0	14,5
LC046000202 L	80	36,7	21,6	23	59,4	29,11
LC04600010 L	80	42,1	26,1	23,5	55,9	20,47
LC046000103L	79	40	24,5	28,2	60,3	37,29
LC046000156 L	80	38,2	22	25,3	55,7	18,78
4605	81	40,5	23,2	23,7	62,9	23,81
LC046000170 L	80	36,6	25,3	25,3	59	24,88
LC046000270 L	80	36,8	20,9	23,7	60,9	19,41
LC046000213 L	80	39,1	24,3	19,3	60,1	14,8
K-2849	80	40,6	24,4	31,6	60,1	24,96
LC046000223 L	78	36,5	24,7	43,3	23,7	46,98
39119	80	41,8	22,7	31,4	51,6	19,56
K-1975	79	37,4	22,3	27,1	57,0	14,06
39203	79	35,6	20,7	32,6	26,6	22,13

As appears from table 1 by results of a research a number of a grade of grades samples on economic to valuable signs, of special interest is revealed. So, for example, on height of attachment of the lower beans that gives the chance to reduce losses of seeds of the lower tier at the mechanized cleaning. Grades samples which have compact habitus and high attachment of the lower beans (more than 20 cm) in this regard are valuable.

It should be noted what is high – productive samples of a collection, branched usually stronger, besides, between height of attachment of the lower bean and long a stalk positive communication is noted.

One of the destabilizing factors of production process and formed a harvest of lentil is drowning of plants. When drowning conditions functioning of all physiological systems worsens that leads to decrease in efficiency and promote considerable losses of a harvest when cleaning.

Resistance of samples to drowning which was defined as the relation of height of an agrotsenozis to length of a stalk of plants a phase of full maturing on a semi-provided bogara, variation on these indicators special difference was not observed among a grade of samples, were allocated on valuable signs separate economically that can be in the future used as initial material for selection work on drought resistance [8-11].

In this regard the leading role in expansion of an area of cultivation of lentil belongs to creation and introduction in production new highly fruitful, technological and highly qualitative the grades which are selected by results of researches [10, p. 959].

It is known that the aridization of climate of the planet will proceed therefore it is necessary the irrigated lands as it is possible to use effectively taking into account and selection of structure of the cultivated cultures.

The main feature of water balance of this region are sharply expressed deficiency of humidity of air caused by high summer temperatures at limited rainfall [16-18].

In the course a research in the irrigated zone (a hospital "KazRSIFaPG") grades samples are of special interest for selection: K-2849; LC046000213L; K-1975; LC046000223; 39119; 23209; K-6; 4605; 39203; LC0460000270L.

It is confirmed that between length of a stalk and height of attachment of the lower bean there is a significant positive communication. Therefore at long and stem forms, attachment of the lower beans was allocated: LC04600068L; LC04600023L; LC04600010 L; 39119; K-2849; LC046000103L.

Table 2 – Characteristic of collection samples on a complex economically – valuable signs and properties not irrigated a background

Name Sample	The vegetative period (from shoots before maturing), the number of days	Height plants, cm	Height attachments of lower beans, cm	Quantity beans with plants, pieces	Weight 1000 seeds, gram	Weight With grain allotments, gram
Vekhovskaya standard	88,4	52,1	25,7	29,3	72,2	23,59
LC046000246L	87,3	42,9	22,7	30,7	74,6	22,3
LC046000150L	87,3	44,3	27,3	37,3	50,1	18,9
K-6	87,3	50,4	22,3	42,3	75,3	26,7
LC04600023L	98,3	51,6	26,1	29,3	72,3	21,11
39227	96,3	49,4	26,5	31,3	70,3	22,69
LC046000202L	87,3	41,3	25,1	38,9	76,1	29,6
23209	90,3	51,3	27,3	28,7	69,7	30,83
LC046000103L	87,3	42,5	25,2	35,7	84,9	40,5
LC046000156L	85,3	43,6	23,0	29,4	64,6	24,86
23202	96,3	47,3	25,5	24,7	68,3	16,4
LC046000170L	90,7	41,1	26,3	26,6	74,2	25,38
LC046000270L	90,7	50,1	26,3	25,8	66,4	32,56
K-2849	98,0	54,1	26,0	46,1	70,7	26,33
31215	96,3	49,4	25,1	30,3	69,7	22,8

If to consider formation of productivity only in the samples grouped grades on fineness of seeds, then the bogharic can note influence an amount of precipitation on a floor at the beginning of vegetation and during the period formation of seeds.

Indicators on elements of efficiency of the samples of lentil allocated grades both on a semi-provided bogharic a, and in the irrigated background are given below.

On a semi-provided bogharic in group largely seeds, on productivity it is possible to allocate grades samples as: LC04000223L; LC046000103L; 23208 with productivity respectively 15.7ts/hectare, 12.4ts/hectare, 10.9ts/hectare, with the vegetative period of 78,79,77 days.

In small seed group on productivity 2 grades of a sample: 39229 and 23108, with productivity respectively – 9.7 c/hectare and 8.6ts/hectare, with the vegetative period 78, 77 days.

In the irrigated zone in groups largely seeds on productivity the following grades samples were allocated: K-184; LC04600023L with the vegetative period 82, 79, 81 days.

Table 3 – Elements of efficiency of a grade of samples of lentil on a semi-provided bogharic (KazRSIFaPG)

Name of a grade of samples	Weight from an allotment, gram	Productivity, c/hectare	Deviation from the standard, c/hectare
Vekhovskaya standard	19,1	6,4	
LC04000223L	47.0	15.7	+9.3
LC046000103L	37.3	12.4	+6
23208	32.9	10.9	+4.5
LC04600068L	30.4	10.1	+3.7
23209	29.9	9.96	+3.56
39229	29.2	9.7	+3.3
LC04000202L	29.1	9.7	+3.3
23108	25.8	8.6	+2.2
K-2849	25.0	8.3	+1.9
LC046000170L	24.9	8.3	+1.9
4605	23.8	7.9	+1.5
K-6	23.1	7.7	+1.3
K-184	22.4	7.5	+1.1
39203	22.1	7.4	+1
LC04000246L	21.6	7.2	+0.8

In small seed group on productivity were allocated: 23108 with the vegetative period of 77-79 days.

Discussion of results. In selection of lentil for receiving a grade, to the meeting requirements of production, it is necessary to pay attention to high seed efficiency with number of beans on K-6 plant; LC046000202L; LC046000103L; K-2849.

With a high weight of 1000 seeds and masses from plants 4605; 31215; LC046000270L; K-2849; LC046000202L; LC046000103L; LC046000213L.

At technology of cultivation it is recommended to use grades samples: long caulescent with the high level of a attachability of the lower beans and LC046000223L, steady against drowning; 39119; K-1975; 39203; LC046000270L; K-6.

For the purpose of increase in gross collecting seed of lentil it is recommended to introduce in agricultural production on the basis of a transfer, a grade samples the following numbers – K-1975, 39203, K6, LC04000270L. Besides these grades samples need to be used as initial material in selection of this the most valuable cultures.

Conclusions. Optimization of elements of structure of a harvest on given the moment can be considered as a tactical task. On the basis of a recombination it can be realized in a concrete soil and climatic zone in the presence of a scientifically based ideatip and the corresponding initial material. As a result of comparative studying it was established that at the disposal of selectors there is the richest material for the solution of objectives, at the same time it is necessary to pay special attention to economic and valuable signs which defines at the same time drought resistance and productivity. For this purpose basic change of very tectonics of plants which will solve the most part of problems in selection of this culture is necessary. For this purpose it is necessary to carry out search of initial material among collections for further use at removal of new grades.

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ӨНІМДІЛІК САПАСЫ БОЙЫНША ЖАСЫМЫҚ СЕЛЕКЦИЯСЫНА АРНАЛҒАН БАҒАЛЫ СОРТУЛГІЛЕРІ

Аннотация. Бәрімізге белгілі, бастапқы материалды кешенді бағалау өсімдіктердің морфологиялық, физиологиялық, анатомиялық және басқа да биологиялық ерекшеліктерін зерттеуге негізделуі тиіс. Сонымен қатар, нақты жағдай үшін болашақ сорттың морфологиялық параметрлерін әзірлеу өте маңызды болып табылады. Жоғарыда айтылғандарды ескере отырып, мақалада жасымықтың даму фазалары мен өнімділік белгілері бойынша деректер келтіріледі. Жасымықтың жоғары өнімді үлгілері анықталды: жартылай қамтамасыз етілген тәлімі жағдайында: LC046000223 L; LC046000103L; 23208; а суармалы аймақ жағдайында: K-184; LC046000223 L; LC046000103L; LC046000156L; 23108; 39229; 39113.

Түйін сөздер: жасымық, коллекция, сорт үлгілері, өнімділік, өнім сапасы, трансферт, жартылай қамтамасыз етілген тәлімі жер, генобанк, суармалы аймақ.

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ЦЕННЫЕ СОРТООБРАЗЦЫ ДЛЯ СЕЛЕКЦИИ ЧЕЧЕВИЦЫ НА УРОЖАЙНЫЕ КАЧЕСТВО ЗЕРНА

Аннотация. Как известно, комплексная оценка исходного материала должна базироваться на изучении морфологических, физиологических, анатомических и других биологических особенностей растений, что в конечном счёте оно безусловно влияет на урожайные качества. Кроме того, весьма значительным является разработка морфологических параметров будущего сорта для конкретного условия. Учитывая выше изложенное в статье приводятся данные по фазам развития и признакам продуктивности чечевицы. Выделены высокопродуктивные образцы чечевицы: в условиях полубеспеченной богары: LC046000223L; LC046000103L; 23208; а в условиях орошаемой зоны: K-184; LC046000223L; LC046000103L; LC046000156L; 23108; 39229; 39113.

Ключевые слова: чечевица, коллекция, сортобразцы, продуктивность, урожайные качества, трансферт, полубеспеченная богара, генобанк, орошаемом фоне.

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