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СОСТОЯНИЕ АГРОФИТОЦЕНОЗА СТЕПИ ПРИУРАЛЬЯ

Аннотация

В статье представлены данные по состоянию растительного покрова залежи. Приведены результаты систематического анализа агрофитоценозов степи Приуралья. Ключевые слова: залежь, агрофитоценоз, геоботаническое состояние, почва.

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STATUS AGROPHYTOCENOSIS URAL STEPPES

Annotation

In the article presents data on the state of the vegetation cover deposits. The results of a systematic analysis agrophytocenosis Ural steppes.

Keywords: deposit, agrophytocenosis, geobotanical state, soil.

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TIMES SOWING AND RATE SEEDING A SUDAN-GRASS IN THE CONDITIONS ALMATY REGION

Abstract

In each soil and climatic zone crops of a Sudan-grass need to be carried out to the best for her the agrotechnical terms providing formation of the most big yield. The harvest size, quality of the grown-up seeds and rational use of seed material depends on a right choice rate seeding of a Sudan-grass. Sowing time and norm seeding depend on biological features culture and a grade, the area and the purposes of cultivation, soil climatic conditions, a contamination of fields and other factors. It is established that in the conditions EES "Agrouniversity" Almaty region the greatest productivity of the Sudan-grass on average in two years, has been established crops 24.04-02.05, at norm seeding 2,5 million pieces/ga-279,5 center/hectare in time.

Keywords: Sudan-grass, sowing time and rate seeding, shoots, bushiness, productivity. Introduction

The modern period development agricultural industry of Kazakhstan is characterized by increase of a role of a forage production as backbone industry agro-industrial complex, determining a condition of livestock production and having significant effect on increase in efficiency of farming and crop production.

It is known that the main source of replenishment resources of forages is the field forage production allowing to provide the need of livestock production for the high-quality sterns balanced on all nutrients.

In a field forage production the extensive level of maintaining, owing to the unfinished structure of sown areas, low productivity of the arable land used for cultivation of forage crops is

observed. With respect thereto it is necessary to increase acreage of forage crops with simultaneous increase in their productivity.

The food supply shall be created in regional aspect proceeding from the direction of economy, the planned productivity and diets of full feeding of the cattle.

Today practically such fruitful cultures as a Sudan-grass, Italian millet, fodder millet, fodder root crops aren't cultivated on an arable land.

Among this group of cultures the Sudan-grass – S.Sudanense (Riper) Stapfis considered perspective. A Sudan-grass - the best bluegrass fodder annual grass. In it high productivity and fodder advantages are successfully combined with drought resistance and a capability it most full to use a maximum of rainfall [1; 2].

This culture differs from other fodder herbs in the fact that in case of big harvests it gives high-quality hay In droughty weather conditions it provides stability of harvests in comparison with traditional forage crops, is capable to grow quickly after beveling and can be used on a silo, grass meal and green material [3; 4].

At the same time it should be noted that the reason of low productivity of a Sudan-grass, not development elements of technology of its cultivation in the conditions of a foothill zone Almaty region is. With respect there to studying of elements technology cultivation of a Sudan-grass which basis is the choice of the most adaptive grade, determination of optimum sowing time and rate seeding determined the choice and relevance of a subject researches.

Materials and methods

The purpose of researches consists in development of optimum sowing time and rate seeding seeds of a Sudan-grass in the conditions EES "Agrouniversity" Almaty region for obtaining the maximum productivity and its use in the green conveyor.

Object of a research was the fodder culture, an annual bluegrass grass – a Sudan-grass, grades Odesskaya-25. Researches were conducted in the territory Enbekshikazakh district of Almaty region on light brown types of soils. Accounts and observations were made by the corresponding approved techniques.

Results of researches

Identification of optimum sowing time and norms of seeding of the Sudanese cultivated on a green forage in relation to specific soil climatic conditions allows to receive the greatest harvests of hay cutting weight and seeds. Therefore many aspects of technology of cultivation of the Sudanese in this zone demand studying, especially concerning sowing time and norms of seeding.

Sowing of the Sudanese often happen thinned because of low completeness of shoots that, finally, leads to a strong contamination and decrease in a harvest of seeds.

In our experiences it is established that with increase in rate seeding the quantity of not ascended seeds increased as their considerable part was in a dry layer of earth.

The highest completeness of shoots is noted at norms of seeding 1,5-2,5 million pieces, with increase in norms of seeding up to 3,0 million pieces at 1 hectare field viability decreased on all options.

From data Table 1 consistent pattern, field viability of the Sudanese at sowing time is determined 08.04 - 18.04 with increase in norm of seeding from 1.5 to 3 million pieces on 1 hectare decreases from 78,3 to 69,0%, at sowing time 24.04 - 02.05 decreases from 79,7 to 70,7%, at sowing time 06.05 - 11.05 decreases from 84,4 to 68,3%.

Thus, even at the same norm of seeding, but at various density placement seeds in a row field viability of their considerable changes: the more densely in a row seeds, the lower them field viability are placed.

Times sowing	Rate seeding of seeds, one million pieces/hectare	Quantity of the ascended plants, piece/sq.m	Field viability, %	
08.04 - 18.04	1,5	117	78,3	
	2,0	149	74,9	
	2,5	177	71,1	
	3,0	207	69,0	
24.04 - 02.05	1,5	119	79,7	
	2,0	152	76,0	
	2,5	181	72,6	
	3,0	212	70,7	
06.05 - 11.05	1,5	126	84,4	
	2,0	157	78,6	
	2,5	179	71,9	
	3,0	205	68,3	

Table 1 – Influence sowing time and rate seeding on field viability seeds of the Sudanese (on average for 2015-2016 yy.)

The significant influence on growth and development of plants is rendered by density of their standing, to a large extent determining the level use inventories of nutrients and water.

With change density of standing depending on sowing time at the SudaneseBushiness, leaf formation, the area of a sheet surface change. We established quite certain dependence between these indicators rate seeding and sowing time of the Sudanese.

Leaf formation of plants in case various density of their standing in a phase of a complete ear emergence is characterized by significant differences (table 2).

By researches it is established that in case of some thickening plants of a Sudanese grass their leaf formation raises, but in case of a bigger thickening sowing this indicator decreases. In case of increase in a regulation of seeding from 1,5 million to 2,5 million seeds the leaf formation plants of crops 08.04 - 18.04 increased in time by 1 hectare from 43,2% to 49,5%, in case of a rate seeding of 3,0 million pieces/hectare the leaf formation of plants constituted 44,9%, the largest level of an leaf formation was established in case of sowing time 24.04 – 02.05 and a rate seeding 2,5 million pieces /hectare-50,8%, in case of sowing time 06.05 – 11.05 largest level of an leaf formation were established in case of a rate seeding 3,0 million pieces /hectare-48,4%.

Table 2 – Leaf formation plants of a Sudan-grass at various density standing in a phase of a full ear emergence, in %.

Times cowing	Rate seeding of seeds, one	Yea	ars	Average for	
Times sowing	million pieces/hectare	2015	2016	2 years	
08.04 - 18.04	1.5	48.4	38.0	43,2	
	2.0	50.2	43.0	46,6	
	2.5	52.9	46.0	49,5	
	3.0	45.7	44.0	44,9	
24.04 - 02.05	1.5	48.7	36.0	42,4	
	2.0	49.3	40.0	44,7	
	2.5	52.6	49.0	50,8	

	3.0	50.1	46.0	48,1
06.05 - 11.05	1.5	47.6	39.0	43,3
	2.0	50.3	42.0	46,2
	2.5	51.2	45.0	48,1
	3.0	50.7	46.0	48,4

From many indicators characterizing photosynthetic activity development of a sheet surface, her general sizes during vegetation most are important.

In researches we didn't set tasks studying of all photosynthetic process as it has been limited to studying only of the separate parties influence various receptions technology of cultivation on changes of the corresponding photosynthetic indicators during growth and development of a Sudan-grass. So, in particular, during vegetation of 2015-2016 questions dynamics of increase of the area of leaves (tab. 3) have been studied.

Table 3 – Bushiness and area of a sheet surface Sudanese depending on sowing time (an average for 2015 - 2016).

Calendar sowing time	Number of plants,Bushiness		Sheet surface, one thousand sq.m/hectare				
			beginning ear	absolute ear blooming		ripoping	
	sq.m/piece		emergence	emergence	biobining	npening	
08.04 - 8.04	176	1,4	75,91	100,23	84,48	46,37	
24.04-02.05	181	1,5	79,76	99,98	85,51	47,38	
06.05-11.05	156	1,6	53,39	68,52	55,05	28,46	

Researches have shown that a factor which in the greatest measure defines decrease in the area of leaves are crops in later sowing time. It is confirmed by data of our experiences. In general leaf formation of a Sudan-grass, late sowing time, is lower due to receiving more thinned herbage.

Most square of a sheet surface on average for 2 years is the share phase of a full ear emergence at the sowing time 08.0 - 18.04 - 100,23 thousand sq.m/hectare, the smallest at sowing time 06.05-11.05 in a phase ripening 28,46 thousand sq.m/hectare.

Lowest square of a sheet surface on phases of development is the share of sowing time 06.05-11.05, the largest area of a sheet surface at sowing time 24.04-02.05.

In the embodiment sown with rate seeding of 1,0 million pieces/hectare, though differed in the vigorous growth leaves of separate plants, but in general per unit area the sheet surface at the same time was smaller, than at bigger density.

Dynamics increase of a sheet surface of a Sudanese grass is naturally connected with approach phases development of plants. At the beginning of their development, for example, in the period of a tillering, increase of a sheet surface accelerates, the maximum of process is the share of the end blooming, after that there is a gradual reduction area of a sheet surface due to partial dying off of leaves which begin to turn yellow and die off quickly.

Sudanese as one of the main forage crops differs in high productivity – on an exit of green material, hay and seeds. For this reason it is carried to number of the best forage crops.

These literatures on influence early and late times sowing of the Sudanese on a harvest green material and hay are very contradictory that once again testifies to need developments of zone technologies.

Analysis tab. 4 shows that the greatest productivity of the Sudanese in time sowing 08.04 – 18.04 on average in two years, was established in case of a regulation seeding 2,5 million pieces /ga-266,5 center/hectare, in time sowing 24.04-02.05 greatest productivity of the Sudanese were also established in case of a regulation seeding 2,5 million pieces/ga-279,5

center/hectare, greatest productivity of the Sudanese time sowing 06.05-11.05 was established in time in case of a regulation seeding 2,5 million pieces/ga-250,5 center/hectare.

Times sowing	Rate seeding	2015 y.		2016 y.		Average for	
	of seeds,			-		2 years	
	million	green	hay	green	hay	green	hay
	pieces/hectare	weight		weight		weight	
	1,5	225	54,9	182	51,0	203,5	52,9
	2,0	243	55,7	197	57,7	220,0	67,4
08.04-18.04	2,5	299	63,4	234	63,3	266,5	63,3
	3,0	241	58,9	227	61,4	234,0	60,1
SED ₀₅ , c/hectare						7,2	
	1,5	236	55,7	209	52,4	222,5	54,0
	2,0	251	58,4	221	56,2	236,0	57,3
24.04-02.05	2,5	311	68,0	248	67,3	279,5	67,6
	3,0	235	72,2	252	68,2	243,5	70,2
SED ₀₅ , c/hectare						6,82	
	1,5	240	60.0	210	52.5	225,0	56.3
06.05-11.05	2,0	248	62.0	225	56.3	236,5	59.2
	2,5	252	63.0	249	62.3	250,5	62.7
	3,0	245	61.3	243	60.8	244,0	61.1
SED ₀₅ , c/hectare						11,5	

Table 4 - Productivity Sudanese depending on time sowing and rate seeding, c/hectare.

These tables 4 show that with increase in a regulation rate seeding of the Sudanese to 2,5 million pieces/hectare germination of seeds on 1 hectare productivity green material and hay considerably increases, but further increase in sowing regulations led only to the insignificant growth of productivity.

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АЛМАТЫ ОБЛЫСЫ ЖАҒДАЙЫНДА СУДАН ШӨБІНІҢ СЕБУ МЕРЗІМІ МЕН СЕБУ МӨЛШЕРІНІҢ ӨНІМДІЛІГІНЕ ӘСЕРІ

Аннотация

Макалада судан шөбінің оңтайлы себу мерзімі мен мөлшері жөніндігі деректер келтірілген. Алматы облысы жағдайында судан шөбінің екі жылдық орташа өнімділігі-279,5 ц/га, тұқым себу мерзімі 24.04-02.05, себу мөлшері 2,5 млн.дана/га екені анықталған.

Кілт сөздер: судан шөбі, себу мерзімі және мөлшері, өскін, түптілік, өнімділігі.

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СРОКИ ПОСЕВА И НОРМЫ ВЫСЕВА СУДАНСКОЙ ТРАВЫ В УСЛОВИЯХ АЛМАТИНСКОЙ ОБЛАСТИ

Аннотация

В статье приводятся данныеоб определении оптимальных сроков посева и норм высева суданской травы. Установлено, что в условиях Алматинской области наибольшая урожайность суданки в среднем за два года- 279,5 ц/га, была установлена в срок посева 24.04-02.05, при норме высева 2,5 млн.шт/га.

Ключевые слова: суданская трава, сроки посева и нормы высева, всходы, кустистость, урожайность.