N E W S
OF THE NATIONAL ACADEMY OF SCIENCES OF THE REPUBLIC OF KAZAKHSTAN
SERIES OF AGRICULTURAL SCIENCES
ISSN 2224-526X
Volume 1, Number 37 (2017), 70 – 74

UDC 633.2.031/033

K. Zholamanov, Jahid Ahmad Shams

Kazakh National Agrarian University, Almaty, Kazakhstan.
E-mail: kem_707@mail.ru

TIMES SOWING AND RATE SEEDING A SUDAN-GRASS IN THE CONDITIONS EDUCATIONAL-EXPERIMENTAL STATION "AGROUNIVERSITY" ALMATY REGION

Abstract. In each soil and climatic zone crops of a Sudan-grass need to be carried out to the best for 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 seeding norm depend on biological features of 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.

The most important question of an intensification of agricultural production in Kazakhstan is creation of a steady fodder supply. The field forage production is the main source replenishment of fodder resources, allowing providing the necessary livestock production for high-quality sterns.

Among this group of cultures the Sudan-grass – S.Sudanense (Riper) Stapfis is considered perspective. A Sudan-grass is the best bluegrass fodder annual grass. Its high productivity and fodder advantages are successfully combined with drought resistance and a capability 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 and is capable to grow quickly after beveling and can be used on a silo, grass meal and green material [3].

On content of the most valuable part of forage is a squirrel, hay of a Sudan-grass is on the first place among cereal herbs. Sudan-grass is one of the most productive cultures, both on a bogharic, and on the irrigated arable land where it is generally used in the after crop and after reap seeding. After bevelling or rational drain it, unlike other one-year plants, quickly grows and within a day gives a surplus of 5-10 cm. This capability allows using it widely in the green conveyor in the bogharic and the irrigated conditions, in the separate and mixed seeding [3].

Basic reason is lack of technologies zone of its cultivation in the conditions of irrigation. The biology of culture allows farms to manage the seeds; however the accepted technology of cultivation of a Sudan-grass on green material substantially differs from technology of its cultivation for the purpose of receipt seeds [4].

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

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

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

Results of researches. In forming of high productivity of the Sudanese crops in optimum terms are important for each specific climatic zone.

Numerous observations in different zones of the country show that seeds of the Sudanese begin to sprout, but very slowly, at a soil temperature, at a depth of seal at least 8-10, in case of 14-16 germination goes quicker, most intensively in case of 28-30, but it doesn't mean that seeding can be postponed waiting for high temperatures as it is integrated to a soil siccation, also adversely affecting emergence shoots and development of plants.

Results of our experience showed that on emergence shoots of the Sudanese, and from here and on the choice of the most reasonable sowing time the great influence is exerted by temperature and humidity of the soil during this period (Table 1).

Table 1 – Influence of sowing time on emergence shoots of the Sudanese (an average for 2015-2016)

Calendar term	Humidity soil to absolutely dry to the weight, %	Average temperature soils at a depth 10 cm, ^{0}C	Period from crops before emergence of full shoots, days
08.04-18.04	28,90	4-6	10
24.04-02.05	29,30	8-10	8
06.05-11.05	26,06	12-14	6

Germination of seeds and speed emergence of shoots are in direct dependence on temperature condition of the soil. In process of temperature increase, process of germination of seeds accelerates.

Results of our researches show that at crops of the Sudanese in various terms soil temperature at a depth of seal of seeds reaches various sizes that crops – shoots have significant effect on period duration. In days of research duration of this period depended mainly on temperature condition of the soil as its humidity (other important factor germination of seeds) in a section of the most part terms sowing was close to optimum.

Identification of optimum sowing time and rate seeding of the Sudanese cultivated on a green forage in relation to specific soil climatic conditions allows not only to receive, with other things being equal, the greatest harvests after crop weight and seeds. Therefore many aspects of technology of cultivation of the Sudanese in this zone demand studying, especially concerning sowing time and rate seeding.

One of the major factors for germination seeds and further development of plants, is existence in the soil of moisture. Field viability was in big dependence on quantity of the sowed seeds per unit area, temperature and humidity of the soil.

Seeding of the Sudanese often happen thinned because low completeness 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 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 of Table 2 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 the field viability are placed.