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SEED SOWING TIMEFRAMS OF ALFLOWER FECT ON OUTPUT

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Аннотатsiя: Урожайность сельскохозяйственных культур зависит от плодородия почвы. Люцерна играет важную роль в повышении плодородия почвы среди бобовых культур. Поэтому в нашем эксперименте мы поставили перед собой цель изучить различные сроки совместного посева люцерны. Мы изучили, как эти сроки влияют на всхожесть и жизнеспособность семян люцерны.

Abstract:The yield of agricultural crops depends on the soil fertility. Among leguminous crops, alfalfa plays an important role in increasing soil fertility. Therefore, in our experiment, we set ourselves the goal of studying the different timing of joint sowing of alfalfa. We studied how these periods affect the germination and viability of alfalfa seeds.

Ключевые слова: Люцерна, сроки посева, нормы высева, плодородие почвы, сроки посева, всхожесть семян, междурядья хлопчатника, всхожесть семян

Keywords: Alfalfa plant, sowing dates, sowing rates, soil fertility, sowing dates, seed germination, cotton inter-rows, seed germination

It is observed that the harvest obtained from existing agricultural lands today remains one of the most pressing problems for meeting the needs of the world's population, industry for products, and livestock for feed.

Scientists of the world are conducting important theoretical and practical research on bringing cotton and grain farming, which are always in high demand, to a new stage of development, improving existing agricultural technologies, fully introducing a scientifically based system into production, and optimizing soil fertility problems. Today, technologies that preserve and increase soil fertility are used worldwide on an area of more than 80 million hectares. In particular, these works were implemented on 19.3 million hectares in the USA, 17.3 million in Brazil, 14.8 million in India, 12.3 million in China, 10 million in Mexico, 3.5 million in Australia, and 3.7 million hectares in Pakistan.

Alfalfa plays an important role in preserving and increasing soil fertility. Therefore, in our experiment, we aimed to study the different timing of alfalfa joint sowing. We studied how these periods affect the germination and survival of alfalfa seeds.

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For alfalfa seed germination, an average air temperature of 15-20°C is optimal, and the maximum should be 25-30°C.

In agriculture, alfalfa germination depends primarily on seed quality, sowing timing, soil moisture, salt content, and other factors. In addition, soil is inextricably linked to climatic conditions. A high salt content in the soil slows down seed swelling and germination. In our studies, the germination of alfalfa seeds sown in the first field experiment was 94.8%, and in the second field experiment, the laboratory germination of seeds was 95.7%.

In the first field experiment, when alfalfa seeds were sown in the cotton inter-rows on September 12, their germination was 9-10 days, and field germination was 84.7%. When sown on September 24 of the same month, it was 85.9%, which can be seen in Table 1.

When sowing alfalfa in early spring (on March 10) between cotton rows and especially among winter wheat seedlings planted in open ground after harvesting cotton stalks (variants 3 and 10), the germination period of seeds was 14-16 days. In these variants, alfalfa seed germination was 89.1% in the 2nd variant and 90.8% in the 9th variant.

According to the data presented, when alfalfa was sown on March 20 (10th variant), the germination of seeds was 13 days. The germination rate was 88.3%, respectively.

The results of the experiment show that the above dependencies and patterns can also be noted in the 2nd field experiment.

In conclusion, it can be said that in both field experiments, it was observed that the degree of germination of alfalfa seeds at all studied dates and methods of sowing made it possible to ensure the necessary plant density.

In the years when we conducted experiments, in the autumn and spring months, due to the air temperature of 16-210°C, germination was observed at a normal level. When planted inside growing cotton, it germinates for a total of 9 days, and 3-4 days after irrigation.

According to many scientific results, ensuring optimal plant density when caring for each agricultural crop is an important factor in obtaining a high yield and achieving efficiency.

Currently, wheat and alfalfa are forced to be sown in the inter-rows of intensive crop rotation "cotton:grain." Therefore, ensuring a standard plant density in the field is of even greater importance.

In the conducted field experiments, sufficient plant density was achieved after full germination of alfalfa at all studied planting dates. It should be noted that when sowing seeds in autumn, it was observed that the germinated alfalfa seedlings, being quite weak, partially die before wintering.

The results showed that in the 1st field experiment, when alfalfa seeds were sown between cotton rows after the first cotton harvest (variant 8), when the seeds were fully

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germinated, the alfalfa seedling density was 1 million plants per hectare. 549 thousand bushes. In spring, at the beginning of the growing season, 1 mln. It was noted that 324 thousand seedlings remained, which means that the number of plants decreased by 2.7% before the winter period, and 12.1% of alfalfa seedlings died due to the cold during the winter months. Similarly, when alfalfa was sown between cotton rows after the second harvest (September 24), it was found that in the 1st variant of the experiment, 2.3% of seedlings were lost before the winter period, and 15.3% during the winter period.

Especially in the 2nd field experiment, under the influence of early frosts on October 7, depending on the sowing date, 7.9-10.8% of seedlings were lost. In the winter months (December-January), during severe frosts, 20.5-24.3% of seedlings died. As a result, in this field experiment, when alfalfa seeds fully germinated during the autumn sowing period, the plant density was 1792-1831 thousand plants per hectare, and by the end of the alfalfa growing season, the plant density was 1157-1239 thousand plants.

In the field experiment, alfalfa seed germination was relatively high when sowing alfalfa in early spring, in the first ten days of March, among the seedlings of spring wheat planted in the inter-rows of cotton in autumn (variant 3), and especially after harvesting the cotton stalks and sowing them in the open field (variant 10). At the same time, it was possible to ensure an optimal plant density.

It should be noted that in the 2nd variant of the experiment, after full germination of alfalfa seeds, the plant density was 1 million plants per hectare. 953 thousand bushes, the number of dead seedlings during the growing season was relatively low and amounted to 7.1%. At the end of the alfalfa growing season, 1 million 814 thousand seedlings were preserved per hectare. Also, in the 9th variant of the experiment, at the beginning of the alfalfa growing season, the plant density was 2 million 146 thousand plants per hectare, and at the end of the growing season - 2 million 26 thousand plants. However, when sowing alfalfa seeds using the same method in the third ten-day period of March (20.03), due to the rapid increase in air temperature and the rapid loss of moisture from the surface layer of the soil, as well as due to the density of seedlings due to the rapid growth of wheat seedlings, a natural thinning of alfalfa seedlings to 7.8-9.4% was observed. As a result, it was established that the density of alfalfa seedlings planted in this spring period at the end of the school year was 1536-1764 thousand plants per hectare.

Thus, it can be noted that in the intermediate period of intensive crop rotation "cotton-grain," when alfalfa was sown in the first ten days of March, especially in the inter-rows of cotton, especially when the field was cleaned of cotton stalks and sown in the open field, among sprouting winter wheat seedlings, the possibility of its germination and survival was high. It was possible to preserve the alfalfa plant at the optimal plant density.

Review of used literature.

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