

Research on Alfalfa Planting Techniques for the Purpose of Raising Sheep

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Abstract: Alfalfa is a kind of perennial, high quality legume grass with high yield and strong adaptability. Feeding alfalfa in the process of mutton sheep breeding can effectively reduce the breeding cost and improve the economic benefits of breeding. Feeding alfalfa enhances the sheep immune system and improves the yield and quality of lamb. This paper mainly introduces the alfalfa cultivation technique and its application in mutton sheep breeding. Japan's animal husbandry is developed, but to ensure the stable feed supply in pastoral areas, it is necessary to find advanced feed. Alfalfa is a high-quality feed source that can meet this requirement, and its demand and feasibility of silage as a winter feed for sheep are also very high. Based on this, this paper focuses on the problems of alfalfa cultivation and its technical characteristics in animal husbandry.

1. Foreword

As one of the protein sources and energy feeds for sheep, alfalfa is widely used in the sheep breeding process. Alfalfa is native to Iran. Asia Minor is suitable for growth in the continental climate areas. Alfalfa is a perennial leguminous grass with a life span of more than 7 years. It is characterized by developed root systems, erect and smooth stems, and thick leaves. Alfalfa is known as the "king of grass" because it contains a variety of nutrients and has high practical value. In addition, alfalfa has a developed root system and a high nitrogen fixation effect, which can effectively improve the soil. It is widely planted in areas with serious soil erosion in China, but the utilization rate is low at present. Alfalfa has strong palatability, has good feeding effect, and can significantly improve the food intake and appetite of sheep. Finally, alfalfa can be directly fed or processed into silage, green hay or pellet feed to extend its shelf life and prevent winter forage shortage. This paper mainly introduces the alfalfa afforestation technology and its application in the sheep breeding process^[1].

2. Morphological Characteristics and Value of Alfalfa

2.1 Morphological Characteristics

Alfalfa is a perennial plant with developed roots of 70-80 cm underground, dense roots and sometimes exposed to the ground. Rhizomes grow dozens of branches in the topsoil or buried

underground. The alfalfa plant has erect stems, measuring 100 – 130 cm long, and the plant has many branches^[2]. Medicago plants have feathered, serrated leaves, long-stalked petals, and a usually purple or blue corolla.

2.2 Nutritional Value

Alfalfa is rich in protein, vitamins, minerals and other nutrients. The proportion of essential amino acids in protein is balanced, which is beneficial to health.

Growth and development of mutton sheep. Alfalfa has low neutral washing fiber content and high fermentation rate, which is conducive to better digestion and absorption. Its good palatability can also improve the appetite of sheep and increase the food intake of sheep.

2.3 High protein content in leaves

Alfalfa leaf in is an alternative protein source in the sheep diet and is rich in vitamin E to improve sheep fertility.

Feed alfalfa can also promote the growth and development of lambs.

2.4 Soil Improvement

Alfalfa has a developed root system, which makes it highly resistant to drought and soil erosion. Developed alfalfa roots can produce rhizobia, such as:

It has a nitrogen-fixing effect and promotes its own growth and development by absorbing and utilizing the nitrogen fixed in the root system. Excess nitrogen stored in the soil can also improve soil fertility. Alfalfa does not need additional watering in the growth process, and relies on natural rainfall to grow normally, reducing the input of manpower and material resources^[3].

3. Alfalfa Breeding Application

3.1 Change the Feeding Method of Mutton Sheep

Alfalfa has strong adaptability and sustainable utilization, which can significantly improve the lactation capacity of meat sheep and reduce the lactation amount of sheep.

High input cost, improve economic benefits, and promote the expansion of breeding scale. Alfalfa feeding changed the original grazing mode to feeding mode, which greatly improved the growth rate of mutton sheep, facilitated the management of mutton sheep, and reduced the cost of human and material resources.

3.2 Direct Use

Alfalfa can be fed directly as green feed for sheep in each stage. Feeding alfalfa can effectively reduce diarrhea in mutton sheep.

However, fresh alfalfa should be avoided when feeding fresh alfalfa with dew to avoid rumen enlargement in mutton sheep.

3.3 Use of Silage

The farm can set up above-ground or semi-underground silage pool for silage alfalfa. Silage can prolong and preserve the life of alfalfa. Can its nutrients effectively solve the lack of grass in winter to ask subject. Every time the silage is opened, it must be sealed in time to prevent spoilage and

affect the quality of feed products. Silage is usually fed mixed with hay. Then feed the finishing material. Change material quantity from low to high, mixed silage, good concentrate, avoid sheep picky food, increase sheep feed intake, reduce feed waste^[4].

3.4 An Alternative to the Protein Feed

In the breeding process of mutton sheep, alfalfa can be used as a substitute for protein feed due to its high protein content. As an alternative to protein feed, alfalfa accounts for 15% of sheep feed, which can effectively reduce the breeding cost.

3.5 Green Hay and Alfalfa Granules

Fresh alfalfa dried into green hay is the first choice for sheep. Compared to other forage products, green hay is very palatable and easy to feed^[5].

Digestion and absorption can effectively improve the meat production amount of mutton sheep. Drying and making green hay also reduces nutrient loss and improves alfalfa protein availability. The use of granular alfalfa significantly improved the milk yield and lamb quality of sheep, and increased the content of milk protein in lamb. The digestion and absorption rate of pellet feed is high, which reduces the breeding investment and improves the economic benefits of farmers. In order to improve the breeding efficiency of mutton sheep, improved feed supply and breeding methods can be considered. The advantages of alfalfa as a low-cost and profitable mutton sheep feed for meat-beneficial sheep breeding are very significant. At present, the state is strengthening farmers' alfalfa planting experience through publicity and guidance, establishing the connection between alfalfa planting and sheep raising industry, making full use of the excellent performance of alfalfa, and promoting the development of China's sheep raising industry. Should make a contribution to the development.

4. Research Background of Alfalfa Cultivation in Northeast China

Alfalfa is a perennial herb in the legume family, up to 100 cm, with deep roots, upright stems and smooth acute horns, three leaves, ovate, and secondary stems. Form stem: raceme, 3-4 cm long, butterfly figure, color is mostly lilac or purple blue. Alfalfa is a kind of multifunctional forage grass with cold and drought resistance, strong nitrogen fixation ability and sustainable soil fertility after many years of cultivation. In addition, alfalfa is highly palatable for livestock, rich in vitamins, protein and varieties, with high nutritional value, easy to digest, and high livestock productivity. In the minerals, the crude protein content is about three times that of soybeans. Therefore, alfalfa plays an important role in grassland animal husbandry^[6]. In recent years, with the implementation of the national "Alfalfa Development Action to revitalize the Meat Industry" and the launch of "planting grass" and "diet" pilot, people pay more and more attention to alfalfa, and significantly improve. Market demand for premium alfalfa seeds. However, the reality is that foreign imported seeds occupy a dominant position in our market. "According to Chinese customs data, China imported 1,000 tons of alfalfa seeds in 2017 and is expected to surge to 3,500 tons by 2020. On the other hand, there are great regional differences in alfalfa seed production in China, and the seed yield of alfalfa seed generally fluctuates between 110-915 kg / ha and 225-915 kg / ha. This area is mainly distributed in the northeast and western regions, and the seed production is mainly planted in low-yielding sandy farmland or saline land, far less than other alfalfa. The planting area is only 110-300 kg / ha. How to improve the yield of alfalfa seed in western northeast China has become a major issue affecting the development of feed seed industry in northeast China. The selection of high-quality alfalfa seeds, combined with efficient cultivation and management techniques,

provides high-yield regional seed solutions. The key to stable production. Unlike the goal of conventional alfalfa cultivation, modest and adjusted cultivation methods and techniques are required to obtain higher yield and higher quality seeds. In general, increase the row spacing. Proper reproduction is beneficial for increasing the single-plant yield of alfalfa seeds, but instead, excessive planting density beyond a reasonable range can also reduce seed yield and quality. Favours the movement of the body to the reproductive organs. Plain-grown alfalfa with forage production of 30 cm is suitable for maximum production of alfalfa forage. Alfalfa seed yield is low. Therefore, to improve the yield of alfalfa seeds in Northeast China, new ways to adapt to different land types and adjust the row spacing. Traditional ridge farming generally improves the utilization rate of crop light energy and fertilizer, reduces pesticides and fertilization, is conducive to changing the field microclimate, is conducive to individual growth, reduces the occurrence of diseases, and has a significant impact on the high yield of crops. Alfalfa has low soil water availability and rhizosphere soil compaction, which is not suitable for alfalfa cultivation. Maize and sorghum, but in alfalfa production and cultivation, the different treatments had lower seed yield and quality. Flat studies are rarely reported. In agricultural production, pre-harvest seeds require high temperature, low humidity, sunny, ventilated weather, making the seeds easy to evaporate and lose water. The moisture content should be controlled to keep the dried seeds of higher quality and also reduce unnecessary losses during harvest]. China. Continuous rainfall in northeast China is concentrated from early mid-July to early mid-August^[7]. The rainy season starts early, long duration and heavy rainfall of alfalfa seeds in northeast and west are usually harvested in early August. During the rainy season, rain and wet weather will cause unharvested alfalfa pods to fall and ears to sprout. At this time, the harvest of seeds will appear seeds should not be dried, discoloration and other problems. Interting the growth period of alfalfa seeds by mowing can not only delay the flowering period of alfalfa seed field, but also match the flowering period with pollination activity, improve pollination efficiency, increase seed yield and reduce adverse weather conditions. Be effectively avoided. This is due to poor seed quality and low yield. Therefore, it is urgent to conduct relevant studies to verify the yield performance of the second alfalfa seeds after pre-cutting and to examine its adaptability to the local natural climate^[8].

5. Conclusion of Alfalfa Cultivation

In this study, the forage yield and seed yield of alfalfa with different row spacing, different cultivation methods and second crop seed preservation treatment were used in the windy pine energy soil in western northeast China. Related agronomic traits, population traits, and seed quality^[9-11].

(1) This study shows that different row distances had significant effects on alfalfa yield, agronomic traits and seed germination in sandstorm soil, and the yield of hay and fresh grass decreased accordingly. In the sandstorm soil, when the line distance is 30 cm, the highest density of the root neck is mainly within the line distance, leading to the formation of a large biological population. Structure and better group space formation, which contributes to seed flowering and pollination, and promotes fruiting, where the seeds have the strongest germination potential and the highest quality.

(2) This study showed that the hay yield, grass yield and density of alfalfa grown in saline fields decreased, with the highest yield at a row pitch of 30 cm. With a row spacing of 60 cm, planting alfalfa plants had high internodes and high alfalfa seed yield. The alfalfa populations had the highest overwintering rates when row spacing of 60 and 75 cm. The germination quality of alfalfa seeds was 45 cm.

(3) From this study, it was found that the saline ridging method increased the plant height, stem

thickness and branch number of alfalfa, with the highest forage yield and green grass yield. However, flat crossing resulted in coarser stems, higher root neck density and higher seed yield in alfalfa. The overwintering rate of alfalfa population was higher under flat strip seeding and low ridge seeding. However, the four different planting methods did not affect the quality of alfalfa seeds.

(4) This study showed that in the saline plots, the second seed harvest starting in late May or early June resulted in not only higher seed yield but also higher germination rate and seed viability. This indicates that the alfalfa suitable for the second crop can adjust the flowering period, plant height, single branch weight, and internode number, as well as the forage yield and seed yield of alfalfa. In the saline land, two alfalfa plants were used to retain seeds, with high feed and seed yield and good germination quality of alfalfa.

Based on the above studies, when planting alfalfa in northeast China and western China, soil adaptability should be fully considered, and appropriate cultivation and management measures should be taken as far as possible to ensure seed production.. In the sandy soil in western Jilin, alfalfa is suitable for row spacing of 50 cm, and 60 cm in saline-alkali land. The appropriate alfalfa cultivation method is flat stubble sowing and second-ripening sowing in saline-alkali land, which can effectively improve the seed yield and quality, delay the harvest period, and reduce the concentration of rainfall in summer.

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