THE ORIGIN OF THE INDIGOFERA (INDIGOFERA TINCTORIA L) PLANT AND ITS ADAPTABILITY TO OUR SOIL CONDITIONS

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Abstract: In this article, the importance of non-traditional leguminous plant indigofera (Indigofera tinctoria L.) grown in the conditions of saline soils of Jizzakht region, the importance of biostimulants for spike formation and grain yield in the plant is highlighted. To obtain high grain yield from Indigofera, the number of seedlings produced during the germination and flowering phases when 3 kg per hectare is planted in the third ten days of April, when Geohumat biostimulant is applied from 10 l. 107, compared to a control option without biostimulant. The weight of 1000 grains is 0.5 g, additional grain yield is 7.2 t/ha, high grain yield (20.9 t/ha) has been scientifically proven.

Key word: Indigofera tinctoria L., Uzgumi, Fertility, Geohumate, legumes, cereals, ...

There are beautiful plants, but there are also plants that are very interesting to others, such as Indigofera tincture. In a favorable climate, it becomes a wonderful low-growing shrub that blooms season after season; in the rest, it is a fast-growing plant that decorates this place with its elegance.

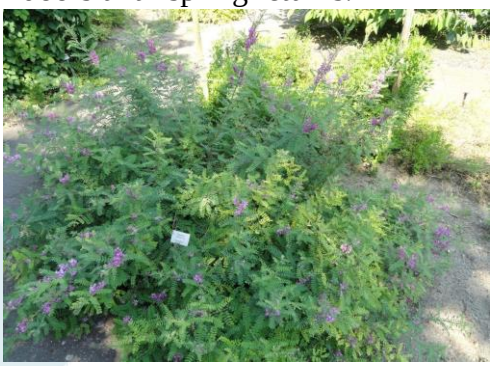
Best of all, it is a legume, and like many of its family, its roots fix nitrogen, thereby improving the soil.

The scientific name is the evergreen shrub Indigofera tinctoria, known as indigo or indigo grass. Its origin is unknown, but it is naturalized in tropical and temperate Asia, as well as parts of Africa. It grows 1 to 2 meters tall with pinnate green leaves.

The flowers are clustered in rose-pink inflorescences, and after pollination, they form a pod containing many seeds.

There are ways to care for the Indigofera tincture plant as follows.

- • Location: it should be outside in the sun.
- • Earth:
- o Pot: universal growing substrate mixed with 30% perlite.
- o Garden: grows in all types of soil, but it is best if they are fertile and have good drainage.
- • Watering: 3 times a week in the summer, and every 4-5 days in the rest.
- • Propagation: by seeds in spring.
- • Pruning: at the end of winter you can remove dry, diseased, weak or broken branches.
- • Rusticity: it is sensitive to cold. Ideally, it should not fall below 0º. If you live where it gets colder in the winter, keep it in a greenhouse or indoors until spring returns.



Indigofera tinctoria L is a type of leguminous plant. Herbs or shrubs are surrounded by more odd feathery leaves. The flowers are pink, crimson and white, located in buds in the axils of the leaves. The fruit is a bean. There are more than 700 species, they are widespread in tropical and subtropical regions, there are 3 species in the CIS countries (I. gerardiana, I. potaninii, I. kirilowii), decorative species are grown in the Crimea, South Lower Caucasus and Central Asia. Indigoferas are beautiful flowering plants, propagated by seeds, and many species are spread by ants. Many indigoferas, such as dyed indigofera (Indigofera tinctoria) and indigofera indigofera (Indigofera anil), produce blue indigo. Basma (black hair dye) is obtained from dyed indigofera leaves. Many species of Indigofera contain the glycoside indican, which gives the blue indigo color. Dyeable indigofera (lat. Indigofera tinctoria) is a plant of the Indigofera genus and belongs to the leguminous family. It originated in India and is grown in many tropical countries for its blue dye.

We presented our preliminary conclusions [1] in the study of the adaptability of the Indigofera australis plant to our climate conditions. Continuing our scientific research, we have studied the benefits of localizing the Indigofera australis plant and the yield of indigo dye extraction from it. Localization of this plant has several advantages for nature and human lifestyle, in addition to its use in the textile industry of Asia and Europe - as a valuable natural dye pigment for cotton, silk and woolen fabrics. For example:

• attractive flowers and adaptability to growing in different conditions allow the plant to be used as an ornamental plant;

• it is the best plant for wildlife. The flowers are a source of pollen and nectar for many native insects, including bees;

• the plant also serves as useful food for butterfly larvae; • ecological benefit: restores the fertility of worn out (saline, infertile) lands. Due to the presence of symbiotic bacteria in plant roots, Indigofera australis, like other legumes, takes nitrogen from the atmosphere and absorbs it into the soil. This leads to soil enrichment and improvement;

• Indigofera can also be grown for soil fertility;

• use in agriculture - to increase the productivity of degraded arable land, i.e. residual biomass from which indigo is extracted is used as "green manure" for vegetables and fruit trees. This residual biomass can also be used as nutritious feed for livestock;

• This plant has been used in Tibetan and Indo-Chinese traditional medicine since ancient times. It is also known to have been used in the Indo-Chinese pharmaceutical industry as antibacterial and antifungal medicines, anti-dog and snake-bite medicines, epilepsy, to reduce liver toxicity, and to treat skin diseases and some types of cancer.

In many cases, the amount of Indigofera biomass obtained depends on the soil, agrotechnical measures and timely cleaning.

The yield of plant biomass in sandy loam soil reached 65%, and the yield in slightly saline sandy soil reached 80% per hectare. This means an average of 35-40 tons of green biomass per hectare. After we dry the plant in a cool place, 4-6 tons of dry mass remains. From this dry mass we can get up to 0.8-1 ton of pigment.

CONCLUSION

Cultivation of Indigofera has the following advantages: The plant can be grown in sandy, loamy, clayey, stony and slightly saline soils, and it requires little fertilizer. These characteristics of Indigofera australis allow the plant to be localized in our climate. Natural paint pigment can

be extracted simply and inexpensively. 6-7 kg of seeds are required for 1 hectare of land, the price of seeds is equal to 500 thousand soums. On average, 30-35 tons of green biomass can be obtained from one hectare during the season. On average, 100-130 kg of this biomass can be extracted into valuable pigment, and if we consider 1 kg of Indigo in the European market from 150 to 300 euros (depending on the quality), it is a good income for farmers. The price of 1 kg of extracted pigment in the domestic market is 600,000-800,000 soums, therefore, the sale of pigment in the domestic market brings our farmers more than 70 million soums per hectare of land.

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