DETERMINATION OF THE GERMINATION OF MEDICINAL GALEGA – *GALEGA OFFICINALIS L.*SEEDS

Shakhnozakhan Tulkinjonovna Mirzamakhmudova
Karim Safarovich Safarov
2nd year graduate student of the National University of Uzbekistan
Email: mirzamaxmudovashaxnoza@gmail.com

ABSTRACT

In recent years, many developed countries prefer the use of drugs based on natural products instead of synthetic drugs in the treatment of various diseases. The demand for high-quality food and medicines is increasing year by year in our Republic, whose nature has been rich in healing blessings since ancient times [1]. -As stated in the decision of the Cabinet of Ministers on "Receive state protection of medical and drug production industries of the Republic of Uzbekistan" (1996), preservation of medicinal plants growing in the local flora and growing in the wild, as well as acclimatization and breeding of medicinal plant species that are not found in the flora of Uzbekistan, are special paying attention is one of the important issues today [6]. In this article, the germination of the seeds of Galega officinalis L., which is considered a medicinal plant, is studied.

Keywords: galega officinalis, ecolorix, extracor, conc. H2SO4, seed germination, germination energy.

DORIVOR GALEGA-*GALEGA OFFICINALIS L.*NING URUG' UNUVCHANLIGINI ANIQLASH

ANNOTATSIYA

So`nggi yillarda ko'plab rivojlangan davlatlar turli kasalliklarni davolash ularni oldini olishda sintetik dori vositalari o`rniga tabiiy mahsulotlar asosida tayyorlangan dori vositalaridan foydalanishni avfzal ko'rmoqda. Tabiati azaldan shifobaxsh ne'matlarga boy bo'lgan Respublikamizda ham sifatli oziq-ovqat va dori vositalariga talab yildan yilga ortib bormoqda [1]. -Vazirlar Mahkamasining «O`zbekiston Respublikasi tibbiyot va dori-darmon ishlab chiqarish tarmoqlarini davlat muhofazasiga olish» (1996) to`g`risidagi qarorida aytilganidek, mahalliy florada o`sadigan dorivor, hamda, yovvoyi holda o`suvchi o`simliklarni asrab avaylash shuningdek, O`zbekiston florasida uchramaydigan dorivor o'simlik turlarini iqlimlashtirish va ko`paytirishga alohida

e'tibor berish bugungi kunda muhim masalalardan biridir [6].Ushbu maqolada aynan dorivor o'simlik hisoblangan dorivor Galega officinalis L. urug'ining unuvchanligini o'rganilgan.

Kalit so'zlar: galega officinalis, ekoloriks, ekstrakor, kons. H_2SO_4, urug' unuvchanligi, unish energiyasi.

INTRODUCTION

Currently, the scientists of our country are carrying out a lot of scientific and practical work on breeding a number of medicinal plants, studying their composition in depth, and extracting biologically active substances from them, which are necessary for the pharmaceutical industry.

In particular, our ongoing research is aimed at studying the growth and development of medicinal galega, one of the plants widely used in the field of pharmaceuticals worldwide.

LITERATURE ANALYSIS

Galega officinalis L. is one of the largest families distributed in the flora of the world, belonging to the Burchakdosh family, its flowers, seeds, leaves and stems are used in medicine and pharmaceuticals. It is also called Galega's goat's meat, French lilac, goat's root, professor's herb, forest malt [3,4,5,6].

Medicinal galega is a perennial plant that reaches 90 cm in height, and in some cases 150-200 cm. The leaves are compound, oddly feathery. The leaves are compound, pinnate, 5-10 pairs of oblong or linear fluted. Flowers are numerous, located in dense apical spikes. Petals are 10-12 mm long, pale blue or pale purple in color. It blooms in June, and the fruit ripens in August.

Medicinal galega is widely distributed in temperate regions of the world. The plant grows in summer months in meadows, swamps and mainly on riverbanks, the distribution areas of medicinal galega are found mainly in the United States, but also in South America, North Africa, Pakistan, Turkey and New Zealand [7][8].

Galega officinalis is used as a medicinal plant in folk and scientific medicine for the treatment of oncological, cardiovascular diseases and diabetes [9]. According to Zemlinsky, seeds, leaves and stems of G. officinalis contain 4-5% essential oil and 0.5% galegine alkaloid C6H13N3. The seeds contain luteolin and sterol. Saponins are found in stems, leaves, flowers and developing fruits [9].

Taking into account the presence of important biologically active substances in Galega officinales, as well as its adaptability to growth in various environmental conditions, it is appropriate to

grow it in the conditions of Uzbekistan and use it in the field of pharmaceuticals.

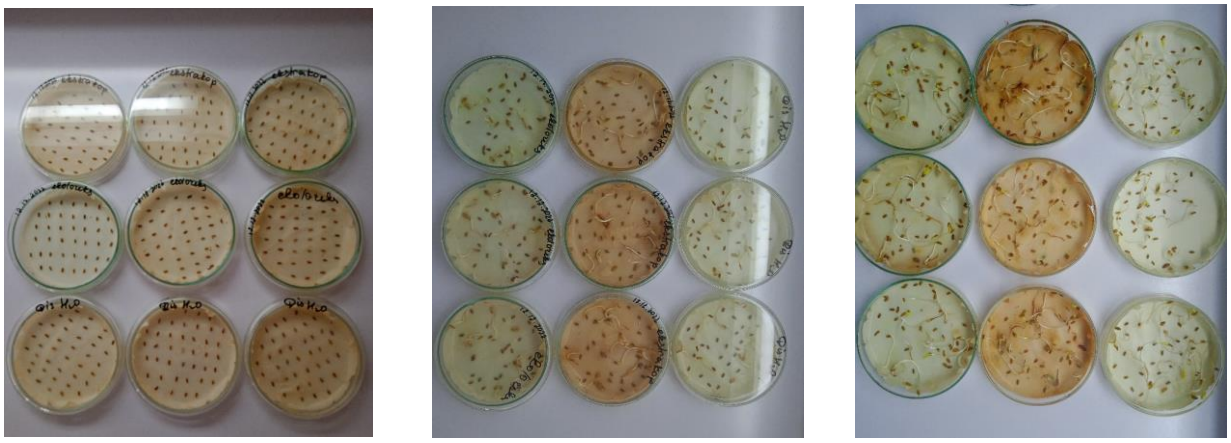
RESEARCH METHODOLOGY

The article was focused on increasing the fertility of seeds of medicinal plants with low seed fertility, breeding them, growing them and obtaining the necessary raw materials from them.

ANALYSIS AND RESULTS

Below we present the results of a series of experiments conducted in order to study the characteristics of Galega officinales L. in terms of seed germination, growth and development. The seeds of Galega officinales L. were taken from the collection of the Botanical Garden of Uzbekistan named after Rusanov, and the experiments to determine seed germination were carried out in the laboratory of the Scientific Center of Genomics and Bioinformatics.

Experiments (as biologically active substances) were carried out in the following order on Ekolorix and extrakor preparations developed by "Ametis" JSC. Initially, seeds were treated with growth stimulants such as "Ekstarkor", "Ecoloreks", which affect the fertility of seeds, as well as seed dormancy treated with H2SO4 [2] in order to remove it from its condition and increase its fertility. First, the seeds were sorted and separated into 40 pieces. Next, 3ml of extracor solution was added to each of the 2nd triplicate Petri dish. Ecolorix was added to each of the 3rd triplicate Petri dish, 3ml each. solution was poured and the Petri dishes were closed and observed for 10 days at a temperature of 25 °C. These processes were carried out in a sterile laminar box. The seeds were collected in order in the Petri dishes. Then 3 ml of distilled water was poured into each of the 1st three Petri dishes.



A. B. C.

Figure 1. A) Fertilization after 24 hours. B) Fertilization after 96 hours. C) Fertilization after 216 hours

The method described in Oldham et al. (2) (seed biology of Galega officinales) was carried out in concentrated H2SO4 solution. In this experiment, the thickness of the seed coat and the faster release of the seeds of the medicinal Galega plant from the dormant state, the cracking of the hard seed coat, and the increase of fertility are aimed.

For the experiment, 120 2-year-old seeds with a fertility not exceeding 25% were taken. They were divided into 40 pieces in 2 Petri dishes and conc. 3 ml of H2SO4 solutions were poured and kept for 40 minutes. Then, the seeds were rinsed 3 times in distilled water and picked into Petri dishes with filter paper moistened with distilled water (Fig. 1). During 10 days, seed germination and germination energy were observed (Fig. 1).

DISCUSSION

There has been much discussion as to why seed germination is low and why germination is increased in Sulfuric Acid. I have read several literatures and articles that medicinal galega seeds are covered with a hard shell and it is very difficult for the first leaf in the seed to break through the seed coat. I found that a concentrated sulfuric acid solution helped crack the crust.

T/r	Solutions	Planted seed	1-kun	2-kun	3-kun	4-kun	5-kun	6-kun	7-kun	8-kun	9-kun	10-kun	Jami	Unish energiyasi	Unuvchanlik
1.	Dis H_2O	40		2	5	1	3		1				12	17.5 %	31.66 %
		40		1	5	3	2	1		1			13	15 %	
		40			6	2	4			1			13	15%	
2.	Ekstrakor	40		3	5	2	1		1	2			14	20 %	35 %
		40			6	1	2			1	2	1	13	15 %	
		40			6	3	3		2		1		15	15 %	
3.	Ekolareks	40		5	5			1	1				12	25 %	30.833%
		40		3	6			2		1			12	22.5 %	
		40		4	6				2		1		13	25 %	
4.	H_2SO_4	40		22	6	1	1						30	72,5%	76,67%
		40		25	4	1	1	1					32	75%	
		40		19	6	4		1					30	72,5%	

Table 1. 10-day germination and germination energy of seeds.

CONCLUSION

The obtained results show that the normal temperature for the germination of the seeds of Galega officinales L. is determined to be 25 °C.

It was found that germination and germination energy showed a much higher result in H2SO4 solution.

REFERENCES

1. Ҳожиматов Қ., Оллоёров М. Ўзбекистоннинг шифобахш ўсимликлари ва уларни мухофаза этиш. Ўзбекистон ССР «Фан» нашриёти Тошкент . 1988. 60 б.
2. Goatsrue (Galega officinalis) Seed Biology Michelle Oldham and Corey V. Ransom*Weed Science 2009 57:149–154
3. Камелин Р.В. Флористический анализ естественной флоры Средней Азии. - Л.: Наука, 1973. - 356 с.
4..В. Флори А.Л. Основы эволюционной морфологии покрытосемянных.М.-Л.: Наука, 1964. - 236 с.,
5.Яковлев Г.П., Жукова Т.Я. Покрытосемянные растения с зеленым и бесцветным зародышем. - Л.: Наука, 1973. - С. 52-91.
6.Magistrlik dissertatsiya Sobirova Zulfiya Akrom qizi ,, Dorivor Galega officinales L. o‘simligining ayrim biologik va fiziologik xususiyatlari" Toshkent-2022. 21-bet.
7. "Galega officinalis (goatsrue)" (https://www.cabi.org/isc/datasheet/24756) . Invasive Species Compendium, CAB International. Retrieved 2017-12-23.
8. Lasseigne, Alex (2003-11-03). "Invasive Plants of the Eastern United States: Galega sp" (http://www.in vasive.org/eastern/other/Galega.html) . US Department of Agriculture. Retrieved 2017-12-23.
9. Землинский С.Е. Лекарственные растения СССР. - М.: Наука, 1958. - С. 263-265.