Problems. The study of allergens in immediate hypersensitivity reactions and immediate hypersensitivity found that the vaccine does not have allergenic properties.

***Keywords:*** tuberculosis, vaccine, prevention, allergenicity.

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## ANATOMIC RESEARCH IN RARE SPECIES OF *RHEUM WITTROCKII* LUNDSTR

**Abstract**

In the article the tables, charts and figures on the results of research of about *Rh.wittrockii*. General view of the status of this population decreases and the list of rare species. Also anatomic research the underground organs root of endangered and rare species of *Rh.wittrockii*. In this article about development of the root structure in different age of plants. The article shows the comparative results. In the period of juvenile life cycle of the plant all the cells in forms of

conducting bundles 38,02±4,03 result to shown. Also all the cells in forms ectoderm 22,55±2,83 and cells ofmezoderm15,65±2,03 were shown. In the period of the size of the development of capacity in cells in the roots of *Rh. wittrockii* cells of conducting bundles in virginal life cycle of plants 57,77±5,97. Also all the cells in forms ectoderm 34,07±9,47 and cells ofmezoderm17,58±2,54. Also in article introduction showed general herbarium collections for storage genus of *Rheum* plants in Institute "Botany and phytointroduction". In there 10 species *Rheum* L genus the flora of Kazakhstan.

***Keywords:*** *Rheum wittrockii* Landstr, biodiversity, virginal, juvenile, in-situ, flora, conservation

**Introduction**

The genus has about 50 species over whelming majority of them is found in Asia in Kazakhstan some species have in flora [1, 2]. Also herbarium fund in institute "Botany and phytointroduction" storage herbarium collections genus of *Rheum* plants. Endangered and rare species of *Rheum wittrockii* Lundstr including in a Red book in our Kazakhstan [3]. In situ – conservation of wild populations and also ex-situ it's creation of seed banks and cultivation in living collections of botanical gardens and locals plant nurseries. Present day in Institute "Botany and phytointroduction" mountain are planted plants at the institute on the Rock garden exhibition presents about 200 species of native flora and over 100 species and cultivars, widely used in the culture of herbaceous perennials, and miniature shrubs. In this Rock garden were planted mountainous endangered and rare species plant of *Rheum wittrockii* Lund str. This methods of conservation very importantly for the propagation a lot of important plants in our flora [4]. The life form Rh.wittrock herbaceous rhizome polycarpic. The spread in Kazakhstan. Dzhungar Alatau [5, 6, 7]. Comparative characteristic of plants, anatomical structure of the leaf blade *Rheum wittrockii* Lundstr in two variants [8].

**Materials and methods**

Object of research is *Rheum wittrockii* Lundstr. Investigations conducted of *Rh.wittrockii* populations geobotanical field method [9, 10]. Purpose and research tasks - study of the development of the root structure in different age of plants. Collecting and processing data on environmental conditions *Rh.wittrockii* growth development to create their herbarium collection at the "Institute of Botany and Phytointroduction". Plant conservation was carried out according to the methods of Strasburger-Fleming. Preserving fluid is a mixture: glycerol-alcohol-water proportions 1:1:1. Fixation was carried out in 96% ethyl alcohol underground organs have been recorded plant species of investigated. Anatomical preparations were prepared using a microtome with a freezing apparatus TOS-2, as well as hand-made blade. For hand cutting ordinary shaver were used to biconcave blade, used for shaving. Sections were enclosed in aglycerol and balm in accordance with conventional methods [11] and [12]. The thickness of the anatomical cuts was0.3µm. Prepared more 500 permanent and temporary preparations for optical microscope MS 6000 and morphometric analysis. For quantitative analysis carried out measurement of morphometric parameters using the ocular micrometer MOB-1-15 (whilelens x 9 and in crease x 10,7). Photomicrographs were made anatomical preparaits with by optical microscope MS 6000 with video camera CAM V400/234mmx157mm.

**Results and discussion**

Investigations was conducted in the south-western spurs of Jungar Alatau refers to the middle of Jungar Alatay mountains from Kazakhstan (Fig.1) [13]. *Rh.wittrockii*the rhizome perennial plant growing on a grassy slope and mountains. Distributed in Central Asia (Jungar, Zailisky, kungey, Ketmen, Terskey, Kirgis Alatau) Western China [14].


Figure 1- General map of mountain south-western spurs of Zhungar Alatau

In our researcher were investigated two plants life cycle were investigated: juvenile life cycle of plants and the virginal life cycle of plants of *Rh.wittrockii.* The juvenile life cycle of the total growth of plants of *Rh.wittrock* in our investigation achieved about 10-15 cm. It is also a result of virginal life cycle of plants overall growth of plants was 15-25 cm height. In juvenile in the life cycle of *Rh.wittrock* formed taproot without lateral roots. Anatomic investigation the underground organs root of disappearing and rare species of *Rh. wittrockii*in the virginal life cycle of conducting bundles good separated. General description of the picture 500 µm amount perfectly visible all the organs and conducting bundles, and ectoderm endoder and more well visible mezoderm. Especially in the period the volume virginal cells become large and comparatively near period juvenile cells a scattered different locations.

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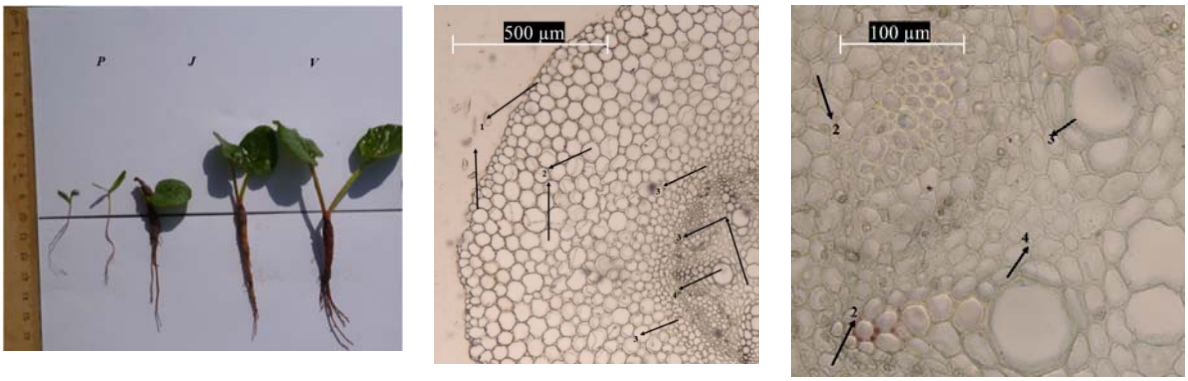
Table 1 - Anatomical root structure of *Rh. wittrockii*

| № | Life cycle of plants | cells of ectoderm | cells of conducting bundles | cells of mezoderm |
|---|---|---|---|---|
| 1 | Virginal | 34,07±9,47 | 57,77±5,97 | 17,58±2,54 |
| 2 | Juvenile | 22,55±2,83 | 38,02±4,03 | 15,65±2,03 |

General description of the picture 100 μm amount perfectly visible all 1the organs and conducting bundles (Fig.1. picture B and C).In the period of juvenile life cycle of the plant all the cells in forms changed becomes almost longer and starting the appearance of the primary cortex and other cell development. According to the size of the development of capacity in cells in the roots of *Rh. wittrockii* cells of conducting bundles in virginal life cycle of plants 57,77±5,97 and in juvenile life cycle of plants result to shown 38,02±4,03.




**(A)** **(B)** **(C)**

Figure1 - (A)- different age tax on of *Rh. wittrockii*: (B)-anatomical root structure of *Rh. Wittrockii* (virginal life cycle of plants ) 1- cells of ectoderm, 2- cells of endoderm, 3,4- cells of conducting bundles (xylem, phloem): (C)-anatomical root structure of *Rh. Wittrockii* (juvenile life cycle of plants) 1- cells of ectoderm, 2- cells of endoderm, 3,4- cells of conducting bundles (xylem, phloem).

**Conclusions**

In cross section of the root of juvenile of plants. Middle age Virginia individuals reach their maximum development. Under optimal conditions, the cells growing shoots have a height. In the period of juvenile life cycle of the plant all the cells in forms of conducting bundles 38,02±4,03 result to shown. Also all the cells in forms ectoderm 22,55±2,83 and cells of mezoderm 15,65±2,03 were shown. In the period of the size of the development of capacity in cells in the roots of *Rh. wittrockii* cells of conducting bundles in virginal life cycle of plants 57,77±5,97. Also all the cells in forms ectoderm 34,07±9,47 and cells of mezoderm 17,58±2,54. Can be concluded that the anatomical characteristics in separation the period of plant development gave different results. Our research has complemented the anatomical characteristics list of references.

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## АНАТОМИЧЕСКИЕ ИССЛЕДОВАНИЯ РЕДКИХ ВИДОВ *RHEUM WITTROCKII* LUNDSTR

***Аннотация***

В статье проведено таблицы, диаграммы и рисунки по результатам исследовании *Rh.wittrockii*. Общий состояния популяции *Rh.wittrockii* снижается, а также перечень редких видов. В статье о развитии корневой структуры разного возраста растений. В статье представлены сравнительные результаты. В период *ювенильном* жизненом состояниях все клетки в формах проводящих пучках 38,02± 4,03 показали. Также все клетки в формах эктодермы 22,55 ± 2,83 и клетки мезодерм 15,65 ± 2,03 было показано. В период размера развития в клетках в корнях *Rh.wittrockii*. Виргнильном жизненном состоянии *растений* было определено 57,77±5,97. Все клетки в формах эктодермы 34,07±9,47 и клетки мезодерм

17,58±2,54. Также статье написано об общих гербарных коллекций для сохранения рода *Rheum* растений в Институте «Ботаника и фитоинтродукции".

***Ключевые слова:*** *Rheum wittrockii* Lundstr, биоразнообразие, *ювенильный, виргинильный,*in-situ, флора, сохранение.

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## СИРЕК КЕЗДЕСЕТІН *RHEUM WITTROCKII* LUNDSTR АНАТОМИЯЛЫҚ ЗЕРТТЕУ

***Аңдатпа***

Мақалада *Rheum wittrockii* өсімдіктің анатомиялық зерттеу жұмыс барысында анықталған бірқатар диаграмма, кесте және суреттер көрсетілген. *Rheum wittrockii* өсімдік популяция қоры оте сиреп бара жатыр, сондықтанда *Rheum wittrockii* сирек өсімдік қатарына тіркелген. Бұл зерттеу мақаласында әртүрлі жастағы өсімдік тамыр құрылымының дамуы бойынша зерттеу жұмысы жүргізілген. Сонымн қатар мақалада салыстырмалы нәтижелер ұсынылған. Ювенильдік тіршілік жағдайында өсімдік клеткасының өткізгіш шоқтары 38,02± 4,03 нәтиже көрсетті. Сонымен бірге эктодерма 22,55 ± 2,83 және мезодерма клеткалары 15,65 ± 2,03 анықталды. Виргинильдік тіршілік

жағдайында өсімдік клеткасының өткізгіш шоқтары 57,77±5,97 болғаны анықталды. Мұндағы эктодерма 34,07±9,47 және мезодерма клеткалары 17,58±2,54 зерттелді. Сонымен қатар мақалада *Rheum* өсімдіктуысының гербалық топтамасы «Ботаника және фитоинтродукции" Институтында сақталғандығы жайында мәлімделінген.

***Кілт сөздер:*** *Rheum wittrockii* Lundstr, биоалуантүрлілік, ювенильді, виргинильді, in-situ, флора, сақтау

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## *RHEUM WITTROCKII* LUNDSTR ӨСІМДІК ТАМЫРЫНЫҢ ҚҰРАМЫНДАҒЫ АНТРАХИНОННЫҢ МӨЛШЕРІН ЗЕРТТЕУ

**Аннотация**

Бұл ғылыми мақалада биологиялық ерекшелігі жағынан ылғал сүйгіш және таулы далалы жердің үлкен бөлігін құрайтын *Rh.wittrockii* өсімдік жайында жазылған. Сонымен қатар мақалада бірқатар диаграмма және зерттеу кезінде анықталған суреттер көрсетілген. *Rh.wittrockii* өсімдігі жер асты мүшесі тамырдың құрамындағы антрахинонды ($C_{14}H_8O_2$) анықтауда өсімдіктің үш тіршілік күйі ювенильдік, имматурлық және виргинильдік тіршілік жағдайында зерттеді. Осы зерттеу жұмыстарында зертханалық жағдайда *Rh.wittrockii* өсімдіктің тамыр мүшесінің микроскопиялық көлденең кесіндісі қолданылды. Алынған нәтижелер бойынша антрахинон ($C_{14}H_8O_2$) өсімдіктің имматурлық тіршілік