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|   |            |
|---|------------|
| <b>Section 3. Journalism</b> .....  | <b>116</b> |
| <i>Alimova Gulnoza Bakshiloevna</i><br>SPECIAL FEATURES OF JOURNALISM IN SOCIAL SITES. PERFORMING<br>LANGUAGE AND STYLE OF TEXT DELIVERY .....  | 116        |
| <b>Section 4. Computer science</b> .....  | <b>120</b> |
| <i>Khujaev Otabek Kadambayevich</i><br>SELECTION OF ARCHITECTURE AND TRAINING ALGORITHMS<br>OF NEURAL NETWORKS FOR CLASSIFICATION TASK SOLUTIONS .....  | 120        |
| <b>Section 5. Mathematics</b> .....   | <b>125</b> |
| <i>Stepanov Vasily Innokentievich, Ni Mingkang</i><br>SECOND ORDER QUASI-LINEAR SINGULAR PERTURBED PROBLEM WITH<br>NEUMANN BOUNDARY CONDITIONS AND DISCONTINUOUS TERM .....   | 125        |
| <b>Section 6. Materials Science</b> .....   | <b>130</b> |
| <i>Ziyamukhamedova Umida Alijanovna, Bakirov Lutfillo Yuldoshaliyevich,<br/>Miradullaeva Gavkhar Bakpulatovna, Bektemirov Begali Shukhrat ugli</i><br>SOME SCIENTIFIC AND TECHNOLOGICAL PRINCIPLES OF DEVELOPMENT<br>OF COMPOSITE POLYMER MATERIALS AND COATINGS OF THEM<br>FORCOTTON MACHINE ..... | 130        |
| <b>Section 7. Medicine</b> .....  | <b>136</b> |
| <i>Astanakulova Munisa Mirzoyevna, Bekjanova Olga Esenovna</i><br>THE ROLE OF CYTOKINES IN THE PATHOGENESIS OF EXFOLIATIVE<br>HEALITY .....   | 136        |
| <i>Babamuradova Z. B., Shodikulova G. Z., Mirzaev O. V.</i><br>TREATMENT OF PATIENTS WITH UNDIFFERENTIATED CONNECTIVE<br>TISSUE DYSPLASIA IN MITRAL VALVE PROLAPSE WITH VARYING<br>DEGREES OF MITRAL REGURGITATION .....  | 140        |
| <i>Bakhriddinova Fazilat Arifovna, Bilalov Bakhodir Erkinovich</i><br>PREVENTION OF EXCESSIVE SCARRING IN TERMINAL GLAUCOMA .....   | 144        |
| <i>Bekjanova Olga Esenovna, Rizaev Elyor Alimdjonovich</i><br>PREVALENCE AND INTENSITY OF TEETH CARIES AT THE CHILDREN<br>SICK WITH THE HERPETIC STOMATITIS .....   | 148        |
| <i>Ivanov Andrey Nikolayevich, Alekseeva Irina Borisovna, Tankovsky Vladimir Eduardovich,</i><br>TACTICS OF YAG-LASER VITREOLYSIS FOR 20 YEARS .....  | 152        |
| <i>Iskandarova Shokhista Fekhruzovna, Dzhabbarov Nurilla<br/>Abdumakhsudovich, Umarova Shakhnoz Ziiyatovna</i><br>THE TECHNOLOGY OF OBTAINING THE DRY EXTRACT FROM THE FRUITS<br>OF SOPHORA JAPANESE (SOPHORA JAPONICA L.) BY MODERN ACCELERATED<br>METHOD .....                                    | 155        |
| <i>Iskandarova Shokhista Fekhruzovna, Mamatkulov Zukhrudin Urmonovich</i><br>DETERMINATION OF POLYPHENOLIC COMPOUNDS IN THE DRY EXTRACT<br>OBTAINED FROM THE LEAVES OF CAPERS SPINY (CAPPARIS SPINOSA) .....  | 159        |

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## **THE TECHNOLOGY OF OBTAINING THE DRY EXTRACT FROM THE FRUITS OF SOPHORA JAPANESE (SOPHORA JAPONICA L.) BY MODERN ACCELERATED METHOD**

**Abstract:** This article presents the results of the development of the technology for obtaining the dry extract from Sophora Japanese fruit (*Sophora japonica L.*). A stepwise process for obtaining the dry extract using the technological scheme is described.

**Keywords:** Sophora Japanese (*Sophora japonica L.*), technology, dry extract, technological scheme.

The production of extracts from raw materials of plant origin is a priority area of the domestic pharmaceutical industry. The most important task of processing medicinal plant raw materials is to preserve the whole complex of biologically active plant substances. Natural plant biologically active substances are the best alternative to synthetic substances, since they are evolutionarily closer to the human body, practically do not cause side effects and are easily involved in metabolic processes. In this case, the value of medicinal properties of medicinal plants is exclusively in synergetic effect from the effect of the whole complex of active substances of plants. The positive effect of such an impact is several times higher than that of each element individually.

Japanese Sophora (*Sophora japonica L.*) is a large deciduous tree with a sprawling spherical crown. It has powerful bactericidal and anti-inflammatory properties, as well as a pronounced antioxidant effect. It is known as a beautiful ornamental and honey plant. Japanese Sophora contains a large number of flavonoids, especially rutin. Fruits and flowers (buds) are much richer with rutin, but in the latter it is almost twice as large. In the buds of Sophora, there are also other flavonoids – sophorin A and B, essential oil, carbohydrates: in fruits-sfo-

roside, resinous substances. The alkaloid composition of Sophora has been studied most well, pachycarpine, matrin, and cofocarpine are found in leaves – 3%, fruits and seeds – 4%, roots 2–3%. In addition, the roots contain phenolic coloring substances, in seeds – up to 6% fatty oil. In addition, bioactive substances are isolated from different parts of Sophora: kaempferol, quercetin, flavonoids, organic acids and vitamin C [2].

In scientific medicine, rutin is widely used for the prevention and treatment of anemia, hypo- and avitaminosis P, in diseases accompanied by impaired vascular permeability. Rutin is also used in the medical practice of many countries, in particular, Bulgarian physicians use it in the treatment and prevention of hemorrhages, especially the brain, heart and retina of the eyes, diabetes mellitus, sclerotic vascular wall damage, hypertension, hemorrhagic diathesis, kidney disease, rheumatism, ulcerative colitis [1, 3, 4].

Proceeding from the foregoing, the purpose of our research was the development of technology of dry extract from Japanese Sophora fruit.

The research was carried out at LC “Balzam”. In this production there is a modern extractor “Ruian Xuanli machinery Ltd”, which for a short time filters the extractant

through plant material in order to extract substances soluble in the extractant. This extractor consists of:

- The main reservoir – an extraction tank that checks the main scheme: it is mainly used for extracting the effect element on phytotherapy;

- Condenser: mainly used for the return flow of condensed liquid to the extraction tank;

- Vacuum condenser: used to concentrate and collect the extracted paste. And also a tank for collecting the solvent: it is used as a collector.

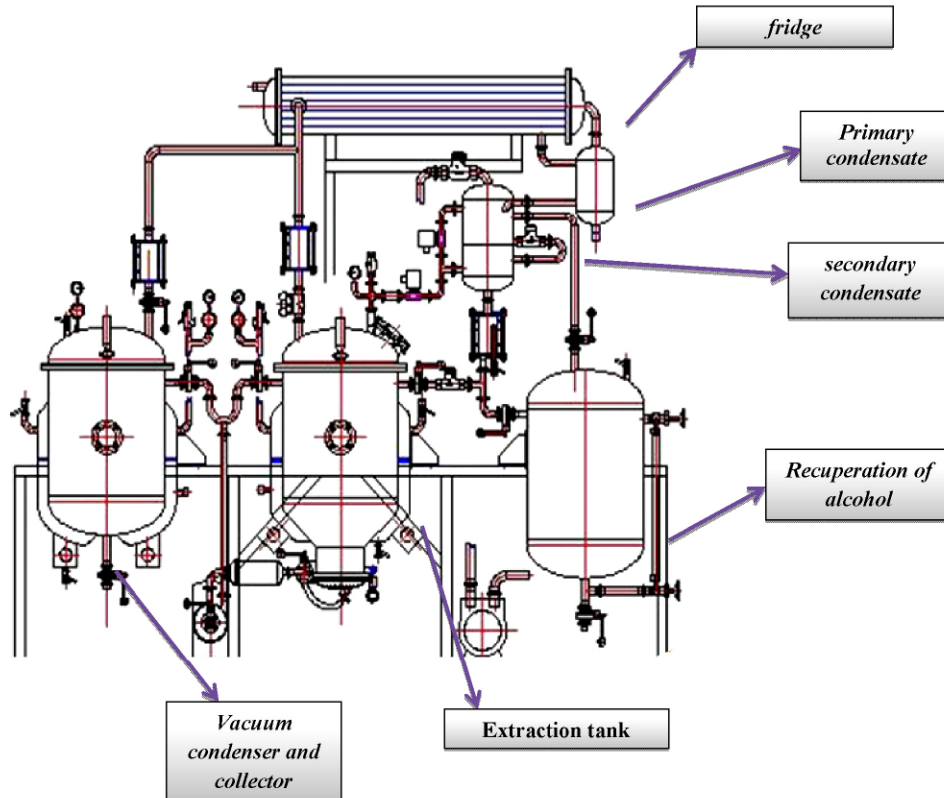


Figure 1. Extractor “Ruian Xuanli machinery Tank”

With these data, the extractor can simultaneously perform several functions, such as temperature control, ultrasound, vacuum, condenser, recuperation, alcohol, etc.

At the beginning of the work with the extractor “Ruian Xuanli machinery Tank”, we obtained the dry extract by the following sequence.

To obtain the dry extractor of 7 kg of fruit, the Sophora was ground, sieved and loaded into a pre-prepared percolator. Then 70% ethyl alcohol was poured into the percolator and heated to 50 °C, left for 4 hours. Then, the ultrasound was turned on for 10 minutes. The resulting extracted liquid was transferred to a vacuum

condenser and a collector. It turned out 70 liters of liquid extract. An additional process of our technological process in obtaining the dry extract in production is the drying stage, which we carried out in the spray dryer “LPG-15 Spray dryer”.

Most clearly, the volume and sequence of work, as well as the specificity of a particular production, show technological schemes that are an indispensable element of industrial regulations for the production of:

The resulting dry extract is a yellow friable powder with a characteristic odor. The yield of the dry extract from the Sophora Japanese fruit was 20.4%.

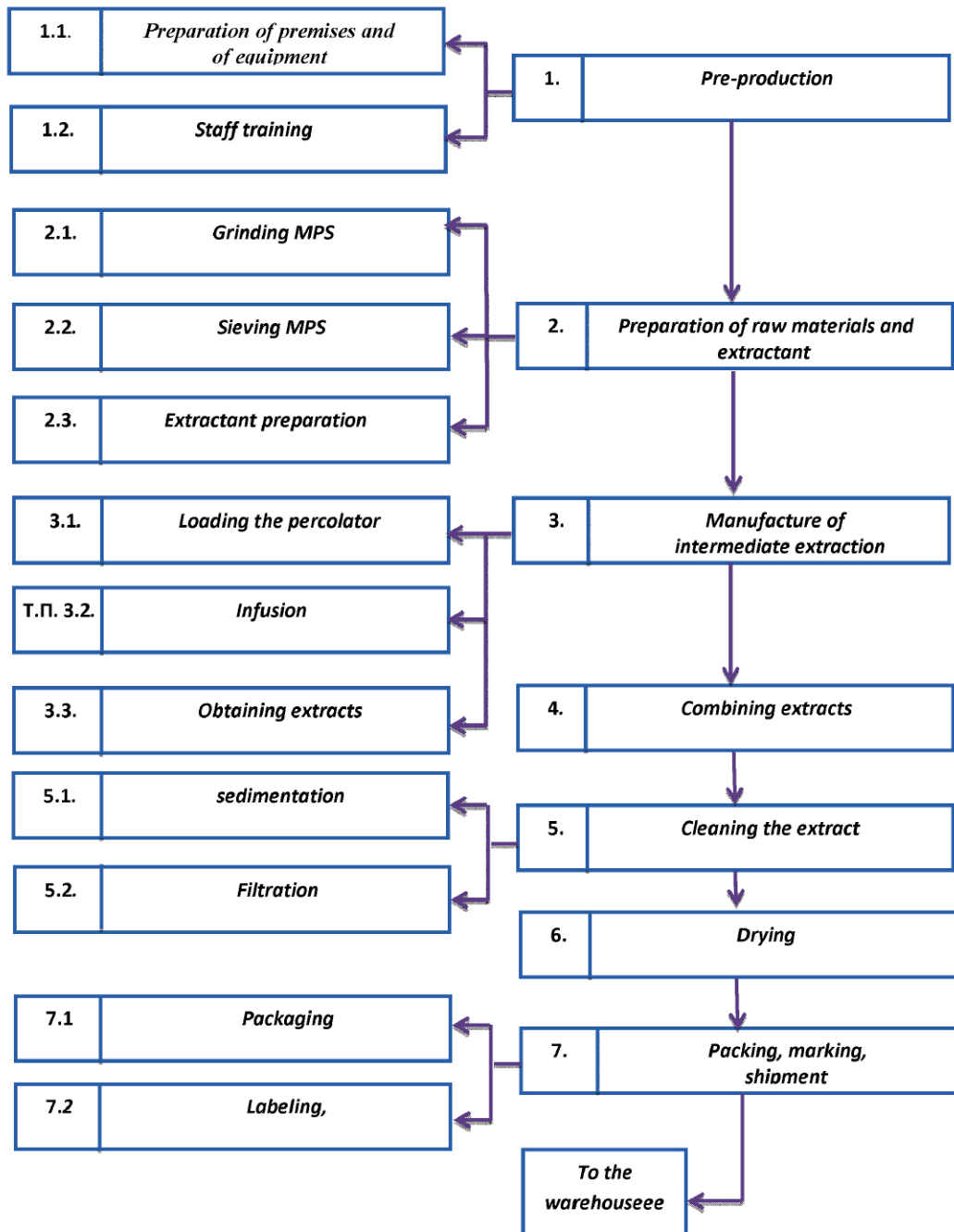


Figure 2. Technological scheme of dry extracts production

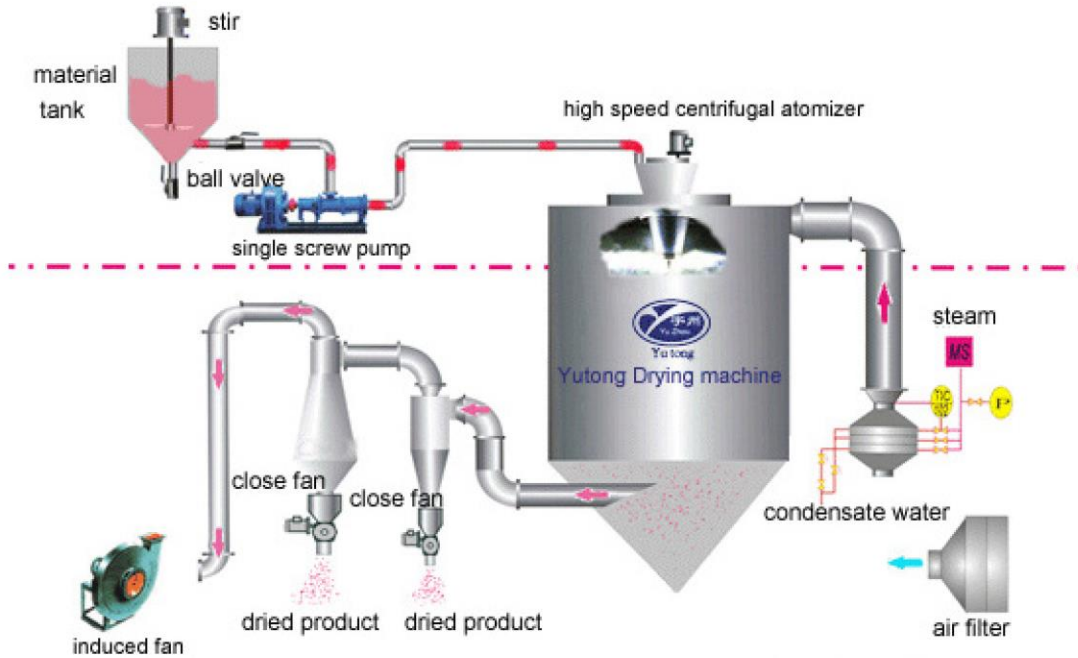


Figure 3. Spray dryer "LPG-15 High Speed Spray dryer"

#### References:

1. Дрозд Г.А. Фармакогностическо-иммунологическое изучение плодов софоры японской (*Sophora japonica* L.) / Д.А. Дрозд, Л.А. Горбачева // Фармация.– 1994.– № 1.– С. 34–37.
2. Ковалева Л.Г., Сампиев А.М. Исследование фенольных соединений плодов софоры японской // Современные проблемы науки и образования.– 2013.– № 6.
3. Studies on antihemorrhagic substances in herbs classified as hemostatics in Chinese medicine. On the antihemorrhagic principle in *Sophora Japonica* / Ishida H. et al. // Chem. Pharm. Bull.– 1987.– Vol. 35.– No. 2.– P. 857–860.
4. The antiulcer action of sophora and the active constituent in Sophora. The antiulcer action of vexibinol / Yamahara J. et al. // Chem. Pharm. Bull.: – 1990.– Vol. 38.– No. 4.– P. 1039–1044.