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Development of Granule Composition Based on the Total Evaporated Extract of Bidens Tripartita, Solidago Canadensis and Agrimonia Eupatoria Herbs

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Abstract: The aim of the study is the development and standardization of granules in hard gelatin capsules based on the composition of dry extracts of Bidens tripartita L., Solidago canadensis L. and Agrimonia eupatoria L. Herbs, possessing nephroprotective activity and antifibrotics in toxic nephropathies. Developed the structure and defined the quality indicators of the pellets with dry extracts of Bidens tripartita L., Solidago canadensis L. and Agrimonia eupatoria L. herbs. The quality specification for the drug - granules of the composition of dry extracts in solid gelatin capsules is developed.

Key words: Biden stripartita L., Solidago canadensis L. and Agrimonia eupatoria L. herbs, dry extracts, granules, hard gelatin capsules, quality indicators.

1. Introduction

The total evaporated extract of Bidens tripartita, Solidago canadensis and Agrimonia eupatoria herbs has been established to possess significant hyponitrogenic activity

Aim of the Study: This investigation has determined the composition of the dosage form – granules based on the total evaporated extract.

2. Materials and Methods

The total evaporated extract of Bidens tripartita, Solidago canadensis and Agrimonia eupatoria herbs has the enhanced water absorbing property. To improve physical, chemical and technological factors of the total extract under study in order to get the granules, wet granulation method has been chosen. The granulate was conducted by means of pressing the wet mass through the sieve with 3 mm holes in diameter. The granules dried in a desiccator for 30 minutes at a temperature of 70 ^{0}C at the most were squeezed through the sieve again, but the holes were 1.5 mm in diameter, and then they were powdered with calcium stearate. The solution of 5% methyl cellulose was used as a moisturizing agent. The following ingredients were used as fillers: “DI-CAFOS A12” phosphates and “TRI-CAFOS 250” phosphates. For homogeneous distribution of hydrophobic granul parts in the solution 1% twin-80 was used, which was added together with the moisturizing solution. Content of constituents in various compositions and their characteristics are presented in the table 1.

3. Results and Discussion

Physical, chemical and technological properties of granules of the presented compositions have been studied. The granules with compositions No 02 and No 03 have been determined to show unsatisfactory results in disintegration. The most satisfactory results in water absorption and disintegration were in granules with composition No 1.

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Table 1 Content of constituents; physical, chemical and technological characteristics of granules in the compositions.

Composition number	Granule composition calculated as a 10 g batch		Disintegration, min	Tap density, g/cm^3	Residual moisture, %
	Constituents	Weight, g			
1	2	3	4	5	6
01	Total evaporated extract DI-CAFOS A12 Methyl cellulose Calcium stearate	4.935 4.935 0.03 0.1	2.183 ±0.581	0.635 ±0.026	3.25 ±0.18
02	Total evaporated extract TRI-CAFOS 250 Methyl cellulose Calcium stearate	4.935 4.935 0.03 0.1	6.283 ±0.762	0.552 ±0.008	3.42 ±0.17
03	Total evaporated extract TRI-CAFOS 250 Methyl cellulose Twin-80 Calcium stearate	4.885 4.885 0.03 0.1 0.1	7.700 ±0.423	0.556 ±0.014	3.03 ±0.18

4. Conclusions

Thus, according to the data obtained, composition No 1 has been proved to be the best.

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