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DETERMINATION OF TANNIN CONTENT OF *RUMEX CONFERTUS* WILLD AND *RUMEX PAMIRICUS* RECH. F. PLANTS BY USING STANDARD METHOD

Abstract. In this work, the amount of tannins in the root and leaves of *Rumex confertus* Willd and *Rumex pamiricus* Rech. f. plants were determined by using standard method. As a result, it was found that the amount of tannins in the root of *Rumex confertus* Willd is 19.1%, in the leaves – 7.36%, and in the root of *Rumex pamiricus* Rech. f.– 16.5%, and in the leaves – 5.2%.

Keywords: Tannin, determination, standard method, *Rumex confertus* Willd, *Rumex pamiricus* Rech. f., *Polygonaceae.*

1. Introduction

Tannin, a chemical constituent derived from plant origin, has been known to mankind since ancient times. Till today, Lignin and tannin are considered to be "Dark Continents" of science as a lot of work is required to understand their complete nature. It is rather difficult to define the term "tannin" in a concise way as used in plant chemistry; it is generally used to include a whole group of substances (as in galls) having specific physical and chemical constituents which are responsible for transforming fresh hide into impermeable non-rotting leather. The definition of tannin has been enlarged to cover a whole mass of constituents which give general phenolic reactions. The essential property of tannin is the ability to combine with proteins and other polymers such as pectin [1].

2. Material and Methods

Plant materials

Extracts from leaves and roots of *Rumex confertus* Willd and *Rumex pamiricus* Rech. f. were prepared in the Institute of Bioorganic Chemistry of the Uzbekistan Academy of Sciences in 2012.

Many different methods for determining the amount of tannins, and one of the widely used methods is the standard method. This method is distinguished by its accuracy compared to the results obtained using other methods. The essence of the standard method is that initially the amount of total substances dissolved in water in the plant extract is found. Then the plant extract is shaken for 45 minutes with a specially prepared goal powder from the skin. In this case, all the tannins are contained in the extract are absorbed into the powder when it is shaken with the powder. Because tannins have the property of combining with proteins in the skin. As a result, only non-tannin substances remain in the extract. The amount of tannins is calculated from the difference between the amount of total substances dissolved in water and the amount of non-tannin substances.

Using the above method, we determined the amount of tannins contained in *Rumex confertus* Willd and *Rumex pamiricus* Rech. f. plants *(Polygonaceae)*. The obtained results are presented in the following table 1:

Table 1.– The amount of tannins in *Rumex confertus* Willd and *Rumex pamiricus* Rech. f.

Name of plant samples	SDW Total substances dissolved in water %	NTS Non-tannin substances %	Tannins %	S Standard
Rumex confertus Willd.				
Underground part (root)	38.6	19.5	19.1	49.5
Aerial part (leaf)	42.3	34.9	7.36	17.3
Rumex pamiricus Rech. f.				
Underground part (root)	32.8	16.3	16.5	50
Aerial part (leaf)	36.7	31.5	5.2	14

3. Conclusion

In our previous articles, the information provided about the chemical composition of *Rumex confertus* Willd. and *Rumex pamiricus* Rech. f. plants and their biological activities [2; 3; 4; 5; 6; 7; 8; 9]. Continuous studies on the chemical composition of *Rumex confertus* and *Rumex pamiricus* and according to the standard method, it was found that the amount of tannins in the root of *Rumex confertus* is 19.1%, in the leaves – 7.36%, and in the root of *Rumex pamiricus* – 16.5%, and in the leaves – 5.2%.

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