

**K. Smetanina, O. Rybak**  
**IMMUNE SYSTEM AND THE INFLUENCE**  
**OF BIOLOGICALLY ACTIVE SUBSTANCES OF**  
**STANDARDIZED HERBAL PREPARATIONS**

**Key words:** immunity, herbal drugs, biology active substances, medicines from Echinacea, standardization

The article covers the aspects of impacts of biologically active substances of herbs and drugs with them on the system of immunity according to European standard requirements. In particular, emphasis is placed on the ability of the immune correction with Echinacea preparations.

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**RUBUS IDAEUS L.**

Rubus idaeus L.  
- Rosaceae, Rubus L.  
120

( )

[9],

[4].  
100

[14, 16]

[15-21].

[16], -3- [20].  
1,05% 0,46%

: 4, 5, 8, G.

-6, [21].

-2

[11].

[9],

[17],

2,62% 6,87%.

[14].

( )  
2,06% 6,89%.

[4].

=

), , [21]. [18] (9,70%

- 11,04%

( idaeus L.) « » - 100' 1152,7 -

2010 (163,8 /100 ), (150,2 /100

(138,8 /100 ) (134,2 /100

80%

[3], - - -

[2], - - -

[13], - - -

( Fe3+), - - -

[5]. - - -

570 [6]. 0,36% ( 0,55% 0,23%

0,41%

" ^ " " " ( )

" " ( . ).

. 2, 2.

70%

[8].

1. - -

. 1, - -

- 0,72% 0,59%

22%, - -

[12].

3,09% - 3,15%

6,45%

PGE1, PGE2, PGE2-a [12].

- 0,45% 1,74%



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**RUBUS**

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DYNAMICS OF BIOLOGICALLY ACTIVE SUBSTANCES  
ACCUMULATION IN RUBUS IDAEUS L. LEAVES OF  
REMONTANT SORT IN ONTOGENESIS**

**Key words:** procyanidins, tannins, oxidizable polyphenols, flavonoids, amino acids, mineral elements

The quantitative content of the bioactive substances (tannins, flavonoids, amino acids, mineral elements) in leaves of raspberry of remontant sort "English" depending on the growth phase and vegetation is determined. It is showed that procyanidins, tannins and total oxidizable polyphenols contents in leaves of raspberry are maximal in flowering stage and higher in leaves from shoots of the first year of vegetation. Amount of flavonoids and amino acids was maximal at the early growing phase and higher in leaves from shoots of the first year of vegetation. By HPLC method was revealed that 51% of the total amino acid content are methionine, isoleucine, glycine and alanine. Raspberry leaves contains a number of essential mineral elements: iron, zinc, copper, manganese and nickel. The maximum content of zinc is observed at the beginning of the second year of vegetation, and nickel, rubidium and tin - at the beginning of first year of vegetation; rubidium - at the end of the second year of vegetation; manganese - and at the end of the first year of vegetation.

**RUBUS**

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(Matricaria recutita L.),

[3-5, 7].