

07-04-97614

<sup>137</sup>Cs  
1,2-6,0

10-33%

8-12%,

Cd

2,5

[1-3].

Zn Cu

1,5-1,6

2005-2008

1. Cd, Zn Cu				
( )				
	/ , ±0,1-0,4	Cd (±0,003-0,05)	Zn (±0,7-18,0)	Cu (±0,39-0,91)
N - ( )1	10,2	0,04	45,1	9,4
1 + Cd <sub>6</sub>	8,6	1,33	43,0	9,0
1 + Zn <sub>600</sub>	5,1	0,03	258,7	9,3
1 + Cu <sub>390</sub>	3,3	0,05	48,4	19,1
- 2	11,2	0,06	37,8	9,2
2 + Cd <sub>6</sub>	9,8	0,53	41,5	8,9
2 + Zn <sub>600</sub>	7,5	0,06	172,2	9,4
2 + Cu <sub>390</sub>	10,1	0,04	45,3	12,3

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c  $K_{9,72}(Al_{7,32}Si_{28,08}O_{72})(H_2O)_{25,5}$  - 50%;  
 $KAl_2[AlSi_3O_{10}](OH)_2$  - 4 %;  
 $Al_2[Si_4O_{10}](OH)_2 \times nH_2O$  - 15 %;  $SiO_2$  - 4 %;  
 ( ) 27%.  
 ( )  
 ): N ( ) - 14,0 %;  $SiO_2$  - 12,5%;  $Al_2O_3$  - 1,6%; - 1,9%;  $MgO$  - 0,3%;  $Fe_2O_3$  - 1,0%;  $MnO_2$  - 0,1%,  
 $SiO_2/Al_2O_3 = 12,90$ .

Cd

6,4

(<sup>180</sup>)

5,5

N<sub>90</sub>K<sub>90</sub>

Cd

Cd

N<sub>90</sub>P<sub>90</sub>K<sub>90</sub>,

2,3 ( . 2).

Cd

1,2

Cd

N<sub>90</sub>P<sub>90</sub>K<sub>180</sub>

Cd

N<sub>90</sub>P<sub>90</sub>K<sub>90</sub>

1,6

Cd

Cd

(Cd - 0,3 / ).

<sup>137</sup>S

[4].

<sup>137</sup>S

( Ge, ORTEC)  
(INTERTECHNIQUE),

Zn, Cu

3 ( . 1)

16-68%.

( -

[5].

IN 1200

Cd,

2. Cd			
	/ , / 2 ,	Cd , /	Cd , /
, /	15,6	0,008±0,001	-
N <sub>90</sub> P <sub>90</sub> K <sub>90</sub>	46,3	0,009±0,002	-
N <sub>90</sub> P <sub>90</sub> K <sub>180</sub>	56,3	0,009±0,003	-
C (0,818 / )	68,5	0,007±0,003	-
/ + Cd <sub>6</sub>	11,8	4,339±0,521	0,512
N <sub>90</sub> P <sub>90</sub> K <sub>90</sub> + Cd <sub>6</sub>	43,7	1,855±0,289	0,813
N <sub>90</sub> P <sub>90</sub> K <sub>180</sub> + Cd <sub>6</sub>	47,9	0,783±0,118	0,374
C (0,818 / )	61,2	0,677±0,130	0,416
+ Cd <sub>6</sub>	8,8		

3.		( )		0,57 /		137 S	
.		137 S ( / )/( / 2),		137 S (V)		, / 2	
		, /		137 S, n x 10 <sup>-2</sup>		137 S n x 10 <sup>-2</sup>	
						V	
( ), /		16,2	29,2±3,8	4,73	1,0	1,0	
+ N <sub>90</sub> P <sub>90</sub> K <sub>90</sub>		43,7	22,3±2,7	9,74	1,3	0,48	
+		63,5	13,4±1,8	8,50	2,2	0,56	
+ . + 25		73,9	9,7±1,0	7,17	3,0	0,66	
( ), /		24,5	22,5±3,4	5,51	1,0	1,0	
+		89,9	6,7±0,9	6,02	3,3	0,9	
+ . + 25		97,2	5,6±0,8	5,44	4,0	1,01	
05		10,3					

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**Summary.** A complex sorbent was developed, and a principally new compound (Suprodit) was prepared on its basis, which combines the properties of both sorbent and complex long-acting fertilizer and contains NPK (RU patent 2336257 of 20.08.2008). It was shown in pot and field experiments that Suprodit can be applied to reduce the phytotoxic effects of heavy metals and  $^{137}\text{Cs}$ . Suprodit decreased the accumulation of heavy metals and  $^{137}\text{Cs}$  in plants by 1.2–6.0 times.

**Key words:** soil contamination, heavy metals, radionuclides, Suprodit, contamination density, productivity, legume grasses.