

		1	$^{2+}$	g^{2+}	, %	, %	, %			—
			-	/100						
27-30	0-20	5,83	31,0	8,8	4,09	2,37	$\frac{0,84}{35,3}$	$\frac{0,30}{12,9}$	$\frac{1,23}{51,8}$	2,7
	20-40	6,09	31,0	11,2	3,97	2,30	$\frac{0,74}{32,0}$	$\frac{0,30}{13,0}$	$\frac{1,26}{55,0}$	2,5
27-30	0-20	6,27	29,1	11,9	4,14	2,40	$\frac{0,79}{33,0}$	$\frac{0,30}{12,6}$	$\frac{1,31}{54,4}$	2,6
	20-40	6,42	29,5	10,7	3,88	2,25	$\frac{0,62}{27,6}$	$\frac{0,30}{13,4}$	$\frac{1,33}{59,0}$	2,1
14-16	0-20	6,06	27,1	12,6	4,20	2,44	$\frac{0,70}{28,8}$	$\frac{0,35}{14,3}$	$\frac{1,39}{56,9}$	2,0
	20-40	6,09	29,6	11,0	3,96	2,30	$\frac{0,64}{28,0}$	$\frac{0,31}{13,5}$	$\frac{1,35}{58,5}$	2,0
27-30	0-20	6,20	29,5	11,6	4,14	2,40	$\frac{0,63}{26,1}$	$\frac{0,32}{13,5}$	$\frac{1,45}{60,4}$	1,9
	20-40	6,27	29,4	10,3	4,06	2,35	$\frac{0,64}{27,3}$	$\frac{0,28}{12,1}$	$\frac{1,43}{60,6}$	2,3
27-30	0-20	6,16	29,2	14,2	4,25	2,46	$\frac{0,77}{31,4}$	$\frac{0,31}{12,7}$	$\frac{1,38}{55,9}$	2,5
	20-40	6,61	31,6	10,9	3,99	2,31	$\frac{0,78}{33,6}$	$\frac{0,30}{13,1}$	$\frac{1,23}{53,3}$	2,6
14-16	0-20	6,08	30,0	11,7	4,34	2,52	$\frac{0,75}{29,9}$	$\frac{0,32}{12,6}$	$\frac{1,45}{57,5}$	2,4
	20-40	6,24	28,4	10,8	4,13	2,40	$\frac{0,71}{29,6}$	$\frac{0,35}{14,4}$	$\frac{1,34}{56,0}$	2,1
05, :		0,45	4,5	3,8	0,18*	0,11	$\frac{0,07*}{2,6}$	$\frac{0,05}{2,0}$	$\frac{0,11}{4,9}$	
		0,22*	2,2	1,9	0,09	0,05	$\frac{0,03}{1,3}$	$\frac{0,03}{1,0}$	$\frac{0,06}{2,5}$	
		0,18	1,8	1,6	0,07*	0,04*	$\frac{0,03}{1,1}$	$\frac{0,02}{0,8}$	$\frac{0,05*}{2,0}$	
		0,18*	1,8	1,6	0,07*	0,04*	$\frac{0,03*}{1,1*}$	$\frac{0,02}{0,8}$	$\frac{0,05}{2,0}$	
, %		2,54	5,4	11,9	1,59	1,62	$\frac{3,34}{3,1}$	$\frac{5,69}{5,6}$	$\frac{3,01}{3,2}$	
	0-20	5,90	20,8	8,5	4,77	2,76	$\frac{0,80}{29,0}$	$\frac{0,36}{13,0}$	$\frac{1,60}{58,0}$	2,2
	20-40	6,30	21,5	8,0	3,75	2,17	$\frac{0,58}{26,8}$	$\frac{0,27}{12,3}$	$\frac{1,32}{60,9}$	2,2
	0-20	6,20	21,8	8,3	5,25	3,04	$\frac{1,07}{35,1}$	$\frac{0,36}{12,0}$	$\frac{1,61}{52,9}$	2,9
	20-40	6,50	22,5	8,8	4,53	2,62	$\frac{0,93}{35,4}$	$\frac{0,34}{13,2}$	$\frac{1,35}{51,4}$	2,7

2004, 2005 5 %-
 $^{2+}$, g^{2+} 1993, 1995-1997, 2002, 2004 1990-1996, 2002,

40 :

[6].

[1].

$^{2+}$ Mg $^{2+}$

[3].

26,9-31,6 %

(. . .).

1 3,9-6,1 % ,

0-40 (. . .)

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20-40

0-20

20-

0-20

20-40

0-20

[4].

20-40

PHYSICOCHEMICAL PROPERTIES AND GROUPS COMPOSITION OF HUMUS IN CHERNOZEM UNDER BASIC TILLAGE SYSTEMS IN CROP ROTATION

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Experimental data characterizing the physicochemical properties of soils and structural changes in humic substances of chernozems under the effect of different tillage practices were considered. Humus content was found to be the most variable parameter in the plow layer of chernozem. It was revealed that the differentiation of the 0- to 40-cm layer by humus accumulation occurred in crop rotation with yearly subsurface and shallow plowing. It was shown that deep plowing, shallow plowing with application of fertilizers in crop rotation, and subsurface plowing restrained the deterioration of soil physical and chemical properties, humus content and group composition, and chernozem effective fertility.

Key words: chernozem, basic tillage, physicochemical properties of soil, humus, fertilizers