

(. 4).
NPK

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N-P-K	Cu	Zn	Mn	Fe	Co
0-0-0	0,24	0,89	113,6	26,0	1,09
1-1-1*	0,23	1,15	82,4	22,4	1,10
2-2-2	0,23	1,20	79,4	20,0	1,14
3-3-3	0,21	1,17	120,8	20,7	1,44
4-4-4	0,18	0,99	118,9	21,5	1,45
5-5-5	0,12	0,97	102,0	22,4	1,49
6-6-6	0,10	1,07	125,9	22,1	1,52
7-7-7	0,11	1,17	133,5	22,5	1,55
8-8-8	0,11	1,16	156,6	23,0	1,81

* – N₂₀P₂₀K₂₅.

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38
NPK: N₂₀P₂₀K₂₅ N₁₆₀P₁₆₀K₂₀₀.
2

5.

-		F	F ₀₅	R
Cu	= 0,25 – 0,02NPK	55,41	5,59	0,941
Mn	= 111,18 + 19,63NPK – 41,35(NPK * Ca) ^{0,5}	9,48	5,14	0,870
Fe	= 25,99 + 1,77 NPK – 5,96(NPK *) ^{0,5}	22,66	5,14	0,941
Co	= 1,06 + 0,08 NPK	62,35	5,59	0,940

6

15

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3	15	30	90 ()
0,72	0,32		
0,98	0,45	>>	>>
1,80	0,49		>>
2,00	0,38	>>	>>

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7.

AGROECOLOGY AND THE INTEGRATED APPLICATION OF CHEMICALS

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The integrated application of fertilizers and pesticides in crop rotations was studied, and their effect on the contents of heavy metals and residual pesticides in plans and soil was revealed.

Keywords: agroecology, complex of chemicals, heavy metals, pesticides, fertilizers.

(– 29)

			HCP ₀₅ , /
0	2,42	2,43	
1	2,57	2,63	0,20
2	3,08	3,06	F < F ₀₅
3	3,32	3,30	NPK 0,12 Sx,% 2,46

8.

		1997 .	1998 .	1999 .
0		156,0	162,2	89,7
1		290,0	219,0	166,7
2		350,0	247,2	201,2
3		392,0	269,5	225,4
0		194,0	158,7	92,7
1		283,0	223,0	168,9
2		335,0	243,0	200,5
3		401,0	261,7	230,8
Sx,%		3,1	2,6	1,9
HCP ₀₅ , / :		26,4	16,4	9,0
NPK		F < F ₀₅	F < F ₀₅	F < F ₀₅
		15,2	9,4	5,2

(. 9).

(/):
– 35-60, – 37-55,
35-50, – 300-450, – 60,
2-3

9.

, % (– 60)

	-	-	,	-	-	4-
	-	2-	2-	3-	-	-
	0	46,1	77,5	48,5	40,2	47,8
	1	48,0	78,2	49,8	40,8	49,0
	2	47,5	78,0	49,0	40,4	48,4
	3	51,4	81,4	52,4	45,4	49,9
	0	45,0	77,8	49,2	39,2	46,5
	1	48,1	78,0	51,0	39,6	49,6
	2	48,0	78,3	50,5	41,8	49,0
	3	51,0	80,8	53,0	46,0	52,0

1. , 1999.-
2. :
. , 1987.- 142 .
3. :
. , 1999, .1.- .3-22.
4. :
. - 1997.- 5.- .79.