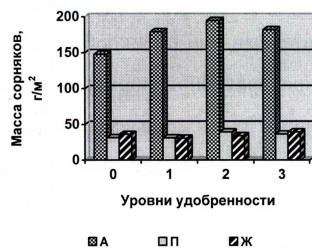
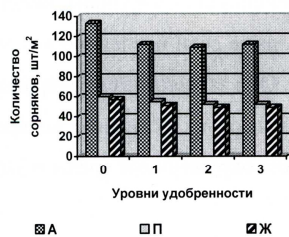
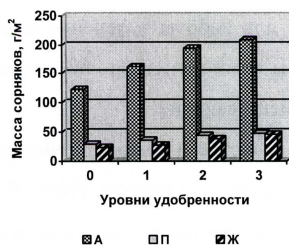
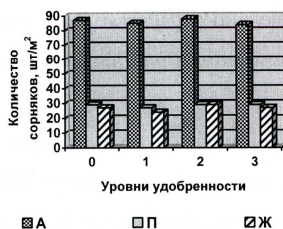


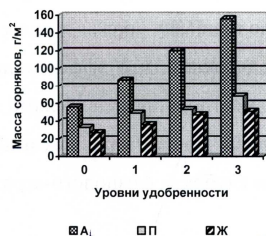
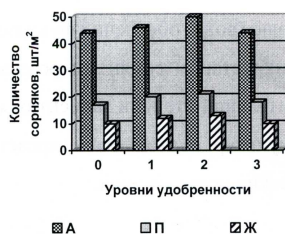
1-я ротация



2-я ротация



3-я ротация



1-

$$1 = 132,39 - 23,90(\text{NPK}) + 4,97(\text{NPK})^2 - 107,12 + 33,57^2 + 11,49(\text{NPK} \cdot \text{P}), R = 0,99$$

$$2 = 149,01 + 30,38(\text{NPK}) - 116,30 - 28,10(\text{NPK} \cdot \text{P}), R = 0,97.$$

2-

$$1 = 86,00 - 58,38 \cdot \text{P}, R = 0,99$$

$$2 = 120,56 + 10,38 \cdot (\text{NPK}) + 40,07(\text{NPK})^2 + 8,87 - 102,26^2 - 47,62 \cdot (\text{NPK} \cdot \text{P}), R = 0,96.$$

3-

$$1 = 44,28 + 13,87 \cdot (\text{NPK}) - 12,77(\text{NPK})^2 - 34,46 \cdot \text{P}, R = 0,99$$

$$2 = 53,70 + 93,07(\text{NPK})^2 - 23,67 - 65,90(\text{NPK} \cdot \text{P}), R = 0,98.$$

1,3-1,5,

2,5-2,7

1,8-2,1

3,0-4,9

38,9-41,5%,

(44,9-46,9,

41,7-47,3%.

4,6-5,8

4,6-6,1

4,3-5,6

17,4-17,7

15,1-15,7 %, 16,2-18,7%.

(. 2).

(. 3).

2.

1-3

		- , / . . .			* (+) 1 . . .											
					N			P ₂ O ₅			K ₂ O					
		1	2	3	1	2	3	1	2	3						
0	25,8	25,2	15,7	<u>2,31</u>	<u>2,47</u>	<u>2,48</u>	<u>0,78</u>	<u>0,94</u>	<u>1,02</u>	<u>2,31</u>	<u>2,60</u>	<u>2,52</u>				
				3,38	3,43	3,00	1,23	1,35	1,20	3,39	3,58	3,08				
				1	28,8	30,7	19,3	<u>2,44</u>	<u>2,67</u>	<u>2,69</u>	<u>0,90</u>	<u>1,06</u>	<u>1,12</u>	<u>2,49</u>	<u>2,69</u>	<u>2,77</u>
								3,66	3,77	3,46	1,38	1,50	1,39	3,70	3,81	3,54
2	29,1	32,7	24,0					<u>2,57</u>	<u>2,72</u>	<u>2,68</u>	<u>0,92</u>	<u>1,06</u>	<u>1,08</u>	<u>2,53</u>	<u>2,81</u>	<u>2,74</u>
								3,90	3,96	3,55	1,43	1,54	1,37	3,89	4,05	3,63
				3	29,1	30,9	24,7	<u>2,81</u>	<u>2,80</u>	<u>2,85</u>	<u>0,92</u>	<u>1,09</u>	<u>1,13</u>	<u>2,65</u>	<u>2,97</u>	<u>2,94</u>
								4,06	4,26	3,96	1,39	1,65	1,50	3,92	4,43	4,06
0	28,7	30,0	20,1					<u>2,31</u>	<u>2,43</u>	<u>2,18</u>	<u>0,78</u>	<u>0,90</u>	<u>0,89</u>	<u>2,30</u>	<u>2,59</u>	<u>2,17</u>
								2,52	2,66	2,42	0,86	0,99	0,97	2,51	2,82	2,42
				1	31,4	36,8	27,9	<u>2,48</u>	<u>2,65</u>	<u>2,32</u>	<u>0,93</u>	<u>1,02</u>	<u>0,94</u>	<u>2,47</u>	<u>2,75</u>	<u>2,33</u>
								2,67	2,90	2,61	1,00	1,12	1,04	2,68	2,99	2,62
2	31,6	36,0	30,5					<u>2,60</u>	<u>2,73</u>	<u>2,45</u>	<u>0,94</u>	<u>1,07</u>	<u>0,99</u>	<u>2,55</u>	<u>2,88</u>	<u>2,52</u>
								2,86	3,04	2,74	1,04	1,18	1,08	2,82	3,19	2,79
				3	31,0	35,9	33,6	<u>2,86</u>	<u>2,80</u>	<u>2,58</u>	<u>0,97</u>	<u>1,08</u>	<u>1,01</u>	<u>2,62</u>	<u>2,98</u>	<u>2,55</u>
								3,10	3,14	2,94	1,04	1,20	1,11	2,81	3,31	2,88
0	28,9	30,3	20,0					<u>2,29</u>	<u>2,40</u>	<u>2,23</u>	<u>0,75</u>	<u>0,97</u>	<u>0,93</u>	<u>2,31</u>	<u>2,57</u>	<u>2,22</u>
								2,54	2,60	2,43	0,85	1,05	0,99	2,57	2,77	2,42
				1	34,0	37,8	28,0	<u>2,48</u>	<u>2,63</u>	<u>2,34</u>	<u>0,90</u>	<u>1,04</u>	<u>0,96</u>	<u>2,49</u>	<u>2,76</u>	<u>2,38</u>
								2,66	2,82	2,54	0,97	1,11	1,03	2,68	2,95	2,57
2	34,4	38,5	31,2					<u>2,60</u>	<u>2,72</u>	<u>2,44</u>	<u>0,92</u>	<u>1,05</u>	<u>0,98</u>	<u>2,56</u>	<u>2,89</u>	<u>2,46</u>
								2,81	2,97	2,69	1,00	1,13	1,06	2,78	3,09	2,70
				3	33,9	37,6	34,3	<u>2,88</u>	<u>2,76</u>	<u>2,46</u>	<u>0,95</u>	<u>1,06</u>	<u>1,01</u>	<u>2,65</u>	<u>3,06</u>	<u>2,51</u>
								3,12	3,06	2,79	1,03	1,17	1,08	2,90	3,36	2,75

*

30,3-
41,0%, 11,4-13,3 17,8-24,8 %, 59,3-62,3, 20,1-23,1
N₆₀₋₁₀₂ 35,0-38,2%.
P₇₈₋₁₀₂ K₁₀₂₋₁₂₀ 1 1,8-1,9 1,8-2,0
2,1-2,3
17,8 21,6 %, 12,0 14,6,
7,3 6,6 %.
(.3).
15,4%, 3,9 4,9%. 78,3-79,3 % N₃₀₋₄₅
(N₆₀P₇₈K₁₀₂) P₉₀K₁₂₀.
N₆₀₋₉₀ P₆₀₋₉₀ K₉₀₋₁₂₀ 60,1-64,2%.

3.

		(+),%					
		N	P ₂ O ₅	K ₂ O	N	P ₂ O ₅	K ₂ O	N	P ₂ O ₅	K ₂ O	N	P ₂ O ₅	K ₂ O
	0	-	-	-	-	-	-	-	-	-	-	-	-
	1	45,7	22,2	27,9	23,3	5,4	9,7	28,0	3,8	5,2	14,3	7,8	13,5
	2	45,7	21,1	30,4	21,7	6,2	12,5	41,6	6,6	10,8	21,8	10,0	25,2
	3	35,1	16,1	26,1	23,6	6,8	14,7	15,5	6,0	10,7	13,7	7,3	24,5
	0	-	-	-	-	-	-	-	-	-	-	-	-
	1	56,0	27,8	30,6	48,8	10,0	21,1	67,0	10,6	15,4	52,3	21,8	55,3
	2	49,8	22,6	29,2	40,3	11,8	26,1	73,3	14,4	21,3	34,9	15,3	43,1
	3	50,5	21,3	31,5	29,2	8,6	18,0	68,0	16,7	27,6	32,6	14,8	53,7
	0	-	-	-	-	-	-	-	-	-	-	-	-
	1	64,2	30,7	33,3	49,6	11,4	22,9	78,3	13,6	16,8	60,5	25,5	64,9
	2	60,1	26,2	33,8	46,4	12,3	28,6	79,3	15,6	21,1	50,7	21,7	60,0
	3	54,3	22,7	32,7	28,5	8,1	32,1	68,7	18,0	25,2	41,2	17,9	66,3

1,4-2,1 1,4-2,1 1,2-2,4
2,8 3,6 1.
3,2 4,2 // -2000.- 4.- 15-16. 2. -
3,3 4,8 // -2003.- 10.- 29-40. 3. -
- 4. // -2010.- 3.- 8-10. -
- 58-64. 5. // -1976.- 1.- -
-2007.- 3.- 68-77. 6. -
()- ., 1994.- 21-24.

COMPETITION OF CULTIVATED AND WEED PLANTS FOR NUTRIENTS IN A CROP ROTATION

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In a field crop rotation, the treatment with herbicides halved the content of weeds for 3 rotation cycles on the average, which decreased the consumption of nutrients by weeds: nitrogen by 4–6 times, phosphorus by 4.5–5 times, and potassium by 4.0–5.5 times. At the same time, the uptake of nutrients by crops increased by 23–25% for nitrogen, by 20–23% for phosphorus, and by 17–21% for potassium.

Keywords: removal of nutrients, weed plants, mineral fertilizers, rotation crops, nutritive efficiency of fertilizers.