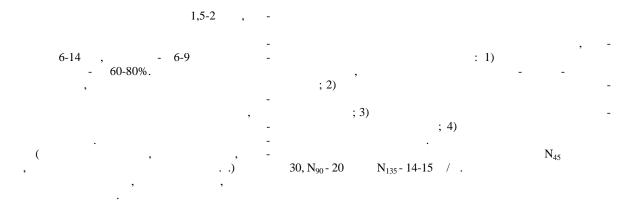
1969-1999 1,17 1,64 0,59 1,89 2008-2012 . 1,23 1,07 1,23 1,27 30-50%, 60-65 / 35-1969-1981 . ( 4,7-5,4;  $1,65-1,75\%; P_2O_5 - 67-81$  $K_2O - 115-120$  / - 1,55**-**1,60 / 808, 35 35 /  $-\ N_{90}P_{90}K_{90}.$  $N_{60}P_{60}K_{60}. \\$ 135 / 35 35 / 27,2 / . 7,8 3,1 / 13,8 / 180 / 1,0 (1969, 1977, 1987, 2004, 2006 .). : 1) - 0,2 (1972, 1979, 1995,1999 .) 2,0 (1982, 1993, 2000, 2001 .)  $\langle r \rangle = 0.613 \pm 0.250, 2$ ( . 1). 135-160 , (r = 0.523)(1980 .), 1978 2001 . (r = 0,751), 3) $0-\pm 2$  .

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2.	1-3				808					
	1 2	, 3	1 2	3	1	2	3	1	2	3
90 90	0,48 0,05 0,60 0,12 0,52 0,08	0,42 0,56 0,48	-0,52 0,67 -0,37 0,47 -0,52 0,75	0,32	0,57 0,67 0,61	-0,14 -0,04 -0,12	0,38 0,55 0,43	-0,02 0,16 0,01	0,72 0,56 0,79	0,50 0,54 0,58
N <sub>90</sub> 90 90	0,80 -0,02	0,48	-0,37 0,66		0,86	-0,12	0,43	0,14	0,78	0,66
			-	178,7	/ ,				65-75	/
(		).	-						(	-
1,6)		(			10		)		(	000
,										808 -
N 100 /					<b>5</b> .0	$N_{45}$			. 1	. N -
N 180 /	,		-		7,2	,		$N_{90}$ –	4	,
	, 1,9 / .		,		•	,		,		-
	).		(		1 N	1				2 -
6,6-33,6%, 56,8%.				N <sub>135</sub> -1	1 0,9 11,	3	N <sub>4</sub> :	5-28,0 2	6,0; N <sub>90</sub> -1	4,0 13,8;
29,6%.	,	, 1,	,3-10,6%			)	,			-
11,0%,			37,6%.							
,			-			,				
(	(1983-1992 .)		-							-
$P_2O_5 - 100-120 / ; K_2O_5 - 1,18-1,35 / ^3$	6,5, 0 – 140-160		2,00-2,05%;	(	,	2001 .				-11 -
55,9 / ,		( 10 ) - 62-64				6 55	% (		) 289	%. -
		12	808 -	•	808		1972-198	32 .		-
$N_{90}$ 90 120	70-78 / .		-		000	30,1 /			- 22,9 /	
(		,				3	<i>5</i> , <i>6</i> , ,			35,7%
).				56,8% 1	, 1993-2007	· .		- +17,	2%-17,9%	
(N )	0-80		-		,	,			,	-
		-	,		9		33,5 /			- 45-68
70	)-90 / . 19	, 989, 1990	1991 ., -	/ .	N <sub>45</sub>	. 2	1	1993-2003	3 . -12,5 /	N
	,		-	,	,	,				
154-17	4 / .	,	-	,		( 24			,	, -
-	(1,18-	1,25 / <sup>3</sup> ),	-			50 / ,	39	)	7	-
(1,35-1,45	5 / 3)		_		68-72			2	60-72 /	
( 55-60 / ) . , 198	34-1991		-							
. , 170		61,	6 140,5							



Recoupment of nitrogen fertilizers in high-input growing technology of winter wheat in the central nonchernozemic zone G.I. Vaulina, N.Z. Milashchenko, O.V. Timofeev

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**Summary.** Long-term studies reliably revealed the development features of winter wheat productivity depending on the level of soil fertility, precursors, rates of nitrogen fertilizers, phytosanitary state of plantations, features of crop cultivars, and weather conditions. **Key words:** recoupment, high-input technologies, nitrogen fertilizers, winter wheat.

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