

| 2. | (2005-2007) | | | | | | | |
|--|---------------|--------|------|------|------|-------|--------|------|
| | Pb | Cd | u | Zn | Mn | Ni | Co | Fe |
| | <0,043 | 0,0084 | 4,7 | 28,7 | 19,3 | <0,06 | <0,006 | 43,7 |
| 80 / | <0,043 | 0,0076 | 5,0 | 29,3 | 21,3 | <0,06 | <0,006 | 50,0 |
| 40 / + N ₇₀ P ₃₀ K ₆₀ | <0,043 | 0,0082 | 5,1 | 28,3 | 24,0 | <0,07 | <0,006 | 49,0 |
| N ₇₀ P ₃₀ K ₆₀ | <0,043 | 0,0085 | 4,4 | 20,0 | 21,3 | <0,06 | <0,006 | 54,3 |
| N ₁₄₀ P ₆₀ K ₁₂₀ | <0,043 | 0,0083 | 4,2 | 22,3 | 20,0 | <0,07 | <0,006 | 51,3 |
| N ₂₁₀ P ₉₀ K ₁₈₀ | <0,043 | 0,0078 | 4,6 | 24,7 | 20,3 | <0,06 | <0,006 | 51,7 |
| 40 / + N ₇₀ P ₃₀ K ₆₀ + | <0,043 | 0,0082 | 4,5 | 24,0 | 17,7 | <0,08 | <0,006 | 47,3 |
| N ₇₀ P ₃₀ K ₆₀ + | <0,043 | 0,0091 | 4,2 | 21,7 | 19,3 | <0,06 | <0,006 | 47,7 |
| N ₁₄₀ P ₆₀ K ₁₂₀ + | <0,043 | 0,0098 | 4,3 | 24,0 | 20,3 | <0,06 | <0,006 | 46,7 |
| N ₂₁₀ P ₉₀ K ₁₈₀ + | <0,043 | 0,0105 | 5,2 | 30,3 | 19,3 | <0,06 | <0,006 | 60,3 |
| | 0,5 | 0,1 | 5,0 | 50,0 | - | 0,5 | - | - |
| | 5,0 | 0,3 | 30,0 | 50,0 | - | 1,0 | 1,0 | 100 |

N₁₄₀ 60 120

(9-10 /) 1.

30%,

[1].

(1993-2008

(70 /)

68,4 /

80 /

1,6

2,1

(N₇₀P₃₀K₆₀)

- 2,4-2,3

137 s 2,0

NPK

-137

137Cs (2,9)

N₂₁₀ 90 180 +

206 . 9.

- 2005. - 3. - . 8-9. 10.

- 1995. - .38.

HEAVY METALS CONTENT IN THE WINTER RYE GRAIN DEPENDENT ON FERTILIZERS AND PLANT PROTECTION MEANS APPLICATION

N.M. Belous Dr. Sc. (Agr.), G.P. Malyavko Cand. Sc. (Agr)

Bryansk State Agricultural academy

V.F. Shapovalov, Dr. Sc. (Agr), A.A. Rezunov

Novozybkov State Agricultural Experiment Station AII – Russia Research Institute of Agrochemistry D.N. Pryanishnicov

Summary. Integrated influence of fertilizer systems and pesticides on crop yield, accumulation of heavy metals and caesium – 137 in the winter rye grain has been studied in field experiments. Optimum doses of agricultural chemicals which ensure stable crop yield of environmentally safe produce were calculated.

Key words: agricultural chemicals, fertilizer systems, pesticides, winter rye, crop yield, heavy metals, caesium – 137.