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INFLUENCE OF CROP ROTATION FACTOR ON HERBOLOGICAL STATE OF CORN CROPS

In the corn crops (winter wheat precursor), a high seed weed bank of 33,8–42,9 ths. pcs./m^2 was formed on manure variants, 40 t/ha + $N_{120}R_{100}K_{100}$ (traditional fertilizer system). With the combined application of by-products (seed crops) – oil radish and mineral fertilizers at rate $N_{120}R_{100}K_{100}$ (alternative fertilizer system), the potential soil contamination was 27,1–31,2 ths. pcs./m^2. In variants without fertilizers (control), this indicator was lower by 52–75 % compared to an traditional and alternative fertilizer system.

Knowledge of the laws of seasonal dynamics emergence of segetal vegetation seedlings makes it possible to predict the contamination of corn crops. Percentage of the number weeds realization from available in the soil for entire vegetation period in corn crops was the lowest in variants with organo-mineral fertilizer system – 1,64–1,93 %, with siderate use + $N_{60}P_{50}K_{50}$ + by-products and addition $N_{60}P_{50}K_{50}$ – 2,02–2,08 %. The highest percentage (2,37–2,17 %) is indicated on non-fertilizer variants.

The actual contamination in maize crops at the vegetation beginning was the largest in variant with the introduction of an traditional fertilizer system (188–220 pcs./m^2). The dominant species were: Echinochloa crus-galli (L.) Beauv.), Polygonum scabrum Moench, Capsella bursa-pastoris (L.) Medik., Matricaria perforate Merat. In general, the number of segetals before harvesting decreased due to the mass culture growth, which caused displacement of early spring and wintering weed species by 25–32 %, which is 2,1 times lower compared to control. By the vegetation end dominant species were: Echinochloa crus-galli (L.) Beauv., Carduusun cinatus Bieb., Elytrigia repens L.

After analyzing the peculiarities of competitive relations between corn and weeds, it was established that in the conditions of fertilizers application, the "pressure" of culture on weeds increased. On variants with organomineral fertilizer system the ratio of culture and weeds masses was 16,7 and 17,3. With alternative nutrition this figure was 13,4–14,7. The culture resistance to weed germination in crops is significantly reduced by control: the competitiveness ratio is 10,6, however, the ratio of weeds in and without culture increased by 0,82 times.

As the results of the research showed, the largest total removal of mineral substances (104,1–108,3 kg/ha) was observed in corn crops with high mineral and organic fertilizer rates, which is 2 times higher compare to control, of which nitrogen (N) accounts for 57–59 %, phosphorus (P_2O_5) – 14–15 %, potassium (K_2O) – 33–34 %.