

**THE EFFECT OF SEED PROTECTANT AND BIOLOGICAL  
PREPARATION ON SEED QUALITY AND CROP YIELD PARENTAL  
FORMS AND HYBRIDS OF SUNFLOWER**

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*The influence of pre-sowing treatment with biological preparation Polimicsobacterin and protectants seed Apron and Cruiser on field and laboratory germination, yield and economic efficiency of production lines and hybrids of sunflower is showed. Installed the high efficiency biological preparation and seed protectants in improving sowing qualities seed, the increase of yield and economic efficiency at cultivation lines and hybrids of sunflower.*

**Key words:** *sunflower, line, hybrid, biological preparation, seed protectants, germination, crop yield, economic efficiency.*

**The aim** of this work was to study the influence of pre-sowing treatment with biopreparation polimicsobacterin, 12 l/t seed dressing Apron, 3 l/t Cruiser, 5 l/t on seed quality, crop yield, economic efficiency of cultivation of parental forms and hybrids of sunflower seeds for the improvement and development of environmentally friendly activities rehabilitation of seeds.

**Methods and materials.** Research conducted in the fields of laboratory seedproduction and seedmaintenance Plant Production Institute named after V.Ya. Yuriev NAAS. Predecessor sunflower – winter wheat. Sunflower seeds of the parent lines Cx1010A, X720B and X526B and F1 hybrids of Romance and Maximus were sown at the optimum time with a seeding rate of 60 thousand pieces of viable seeds per 1 ha.

**Results.** Presowing treatment of seeds with biopreparation polimicsobacterin provides improved laboratory germination at low sowing qualities on the control (75–89 %): line Cx1010A on 7 %; line X720B on 17 %; line X526B on 4 %, field

germination of parental lines of sunflower X720B and X526B on 5–6 % and hybrid Romance on 3% increase in the number of plants before harvesting parent lines X720B, X526B and hybrid Maximus on 1.3–1.6 thousand pieces/ha or 2–3 % and yields: line Cx1010A on 0.04 t/ha or 5 %; line X720B on 0.04 t/ha or 5 %; line X526B on 0.08 t/ha or 6 %; hybrid Romance on 0.15 t/ha or 6 %.

Seed treatment with drugs Apron and Cruiser provides improved laboratory germination at low sowing qualities on the control (75–89 %): line Cx1010A on 4 %; line X720B 17 %, field germination parental lines of sunflower on 5–10 % and hybrids on a 2–4% increase in the number of plants before harvesting parent lines Cx1010A, X720B and X526B on 4.5; 9.2 and 10.5 thousand pieces/ha, or 9; 16 and 20 %, compared with the control and hybrids Romance and Maximus on 2.2 and 3.1 thousand pieces/ha or 4 and 6 %, and yields: line Cx1010A on 0.09 t/ha or 10 %; line X720B on 0.05 t/ha or 7 %; line X526B on 0.07 t/ha or 5 %; hybrid Romance on 0.11 t/ha or 5 %.

Presowing cultivation of seeds of sunflower lines with biopreparation polimicsobacterin or treatment with drugs Apron and Cruiser allows you to get more profit from 15478 uah/ha to 17746 uah/ha and sunflower hybrids from 312 uah/ha up to 496 uah/ha.

### **Conclusions**

The use of biopreparation polimicsobacterin and seed protectant Apron and Cruiser for pre-treatment can increase seed production lines and hybrids of sunflower, which is an effective measure to accelerate their introduction into production. An effective way to increase seed production lines and hybrids of sunflower depends on the drug and how it is used.

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