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ECONOMIC AND ENERGETIC EFFICIENCY OF WINTER RAPE CULTIVATORS GROWING IN WESTERN POLISSIA IN UKRAINE

In market conditions the main criterion of selection of growing technology of one or another crop is economic efficiency. Therefore that very technology will be the most competitive, which will ensure the highest profitability and income.

The aim of this research is to discover economic and energetic assessment of growing winter rape seeds depending on level of mineral nutrition, sowing terms and varietal features in terms of western Polissia of Ukraine.

To solve this task in the period of 2009 – 2012 researches in Volyn SARS were conducted according to the following scheme: factor A – cultivators: Champion of Ukraine, Black Giant, Dembo; factor B – dose of fertilizers: without fertilizers (control one), recommended amount of fertilizers for zone of Polissia $N_{30}P_{60}K_{90}$+ $N_{30\ (III)}$ +$N_{60\ (VII)}$, $N_{30}P_{90}K_{120}$ +$N_{60\ (III)}$+ $N_{60\ (VII)}$, $N_{30}P_{60}K_{90}$+$N_{60\ (III)}$ + $N_{30\ (VII)}$, $N_{90}P_{45}K_{60}$ +$N_{30\ (III)}$ + $N_{30\ (VII)}$; factor C – sowing terms: August 20, September 1 – recommended for the zone, September 1

The winter rape cultivators under research provided the maximum net operating profit at the highest background of mineral nutrition. It justified introduction of high doses of mineral fertilizers for winter rapes. The maximum net operating profit was 6,322.00 hrn./ha for Dembo cultivator with $N_{30}P_{90}K_{120}$ +N_{60} +N_{60} and sowing term on August 20, when its seeds yield is 2.87 t/ha. Profitability of this variant was 123%. Champion of Ukraine also ensured high yield and net operating profit on $N_{30}P_{90}K_{120}$ +N_{60} +N_{60} with sowing term on September 10 and made 2.63 t/ha and 5,362.00 hrn./ha with profitability of 104%.

According to the results of our researches the highest indices of seeds energy output were for variants: cultivator Dembo $N_{30}P_{90}K_{120}$ +N_{60} + N_{60}, sowing term on August 20 – 59.4 GJ/ha; cultivator Champion of Ukraine, $N_{30}P_{90}K_{120}$ +N_{60} + N_{60}, sowing term on September 10– 54.5 GJ/ha; cultivator Dembo, $N_{30}P_{90}K_{120}$ + N_{60} + N_{60}, sowing term on September 01 – 52.4 GJ/ha; cultivator Champion of Ukraine, $N_{30}P_{90}K_{120}$ +N_{60}+N_{60}, sowing term on August 20 – 52.0 GJ/ha.

As mineral fertilizers comprise the major portion of energy expenditures, the highest energy efficiency indices on control variants were in the range of 1.7 – 2.5. However winter rape ensures a high addition to seed production with increasing of mineral fertilizers dose, which has provided high energetic efficiency indices with high fertilizer amounts. If only those variants, on which fertilizers were introduced, are considered, this coefficient was the highest on variants: cultivator Dembo $N_{30}P_{90}K_{120}$+N_{60}+N_{60}, sowing term on August 20 – 2.2; cultivator Dembo $N_{30}P_{90}K_{120}$+N_{60}+ N_{30}, sowing term on August 20 – 2.1; cultivator Champion of Ukraine, $N_{30}P_{90}K_{120}$+N_{60}+N_{60}, sowing term on September 10 – 2.0.

The highest seeds yield was achieved by cultivators Dembo with sowing term on August 20 – 2.87 t/ha and Champion of Ukraine with sowing term on September 01 – 2.63 t/ha with fertilization of $N_{30}P_{90}K_{120}$+N_{60}+N_{60}. Maximum economic and energetic efficiency was achieved by cultivator Dembo with sowing term on August 20 and

fertilization $N_{30}P_{90}K_{120}$ $+N_{60}$ $+N_{60}$ and comprised: net operating profit – 6,322.00 hrn./ha and profitability – 123%, Kee – 2.2.

Key words: winter rape, profit, profitability, energy, energy efficiency indices.