



## EFFECTS OF HERBICIDES AND MICRONUTRIENTS ON SOYBEAN ECONOMIC PERFORMANCE

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### ABSTRACT

*The increase in grain production in Uzbekistan should be ensured primarily by increasing yields. To do this, you must use all available reserves. In the conditions of modern intensive farming, weed control is one of the most important elements of the farming system, on which the increase in crop yields depends.*

When determining the economic efficiency of the use of herbicides on irrigated lands of the Tashkent region, the experiment was carried out taking into account the purchase prices for soybeans. Because the purchase price of agricultural crops has changed during the transition of our country to a market economy. Therefore, the economic efficiency of soybean cultivation in production experiments and field experiments was determined at the purchase prices for grain in 2022.

When determining the cost of one hectare of soybean crops, the prices for sowing seeds, micro- and macrolelements, mineral fertilizers, pesticides (herbicides, fungicides, etc.), tillage, harvesting, transportation and cleaning of grain, labor costs are taken into account, current maintenance costs are taken into account agricultural machinery and depreciation, fuel and insurance costs. The gross value of grown products, the costs spent on 1 ha of cultivated land, the cost of 1 ton of grown grain, the conditional net profit received from 1 ha, the level of profitability vary depending on the use of herbicides.

Therefore, the economic efficiency of soybean cultivation in production experiments and field experiments was determined by the purchase prices for grain in 2017-2019. the use of preparations containing the active substance pendimethalin, the yield is 11 t/ha, 25 t/ha when using Stomp 2 l/ha (standard), 26 t/ha when using Gaitan. 4 l/ha, 25 t/ha were used when using Gaitan 5 l/ha, the active ingredient was promethrin and with herbicides s/ha, and when using Gambit s.k. - 4.0 l/ha it was 27 q/ha. The purchase price of one centner of grain was 480,000 in all variants.



**Table 1**  
**Economic efficiency of the use of herbicides and trace elements 2022**

Options	Grain yield, centner per hectare	Purchase price of 1 Centner of grain, soum	Price of gross product sold from 1 hectare, soum	per hectare spent expenses soum	1 hectare conditional net income , soum	1 centner of grain cost , soum	Profitability , %
<b>Pendamethalin</b>							
Control without herbicide	11	480000	5280000	1980000	3300000	180000	16,7
Stomp 2 l/ha (standard)	25	480000	12000000	2277500	9722500	91100	42,7
Gaitan 4 l/ha	26	480000	12480000	2401500	10078500	92365	42,0
Gaitan 5 l/ha	25	480000	12000000	2497505	9502495	99900	38,0
<b>Promethrin</b>							
Control herbicide free	12	480000	5760000	1980000	3780000	165000	19,1
Gezagard 50% sus.k. - 1.2 l/ha (standard)	26	480000	12480000	2317500	10162500	89134	43,9
Gambit s.k. - 3.0 l/ha	29	480000	13920000	2311500	11608500	79706	50,2
Gambit s.k. - 4.0 l/ha	27	480000	12960000	2409500	10550500	89240	43,8

The price of sold gross output per hectare was 5280000 UZS in the control variant, 12000000 UZS when using Stomp 2 l/ha (standard), 12480000 UZS when using Gaitan 4 l/ha, 12000000 UZS when using Gaitan 5 l/ha was used, and when using herbicides with prometrin as an active ingredient control variant 5760000 soums, Gezagard suspension 50% - 12480000 UZS when using 1.2 l/ha (standard), Gambit s.k. - 13920000 UZS when using 3.0 l/ha, Gambit s.k.- 4.0 and when used per liter amounted to 1,296,000 UZS.

The cost per hectare is 1,980,000 UZS in the control variant, 2,277,500 UZS when using Stomp 2 l/ha (standard), 2,401,500 UZS when using Gaitan 4 l/ha, 2,497,505 UZS when using Gaitan 5 l/ha , herbicides with the active ingredient prometrin 1,980,000 UZS in the control variant, Gezagard 50% suspension - 1.2 l / ha (standard) 2,317,500 soums, Gambit s.k. - 2,311,500 UZS when applied 3.0 l / ha ha, When using Gambit s.k. - 4.0 l / ha, amounted to 2,409,500 UZS.



The conditional net income per 1 ha is 3,300,000 UZS in the control variant, 9,722,500 UZS when applying Stomp for 2 l/ha (standard), 10,078,500 soums when using Gaitan for 4 l/ha, 9,502,495 UZS when applying Gaitan for 5 l/ha, active substance prometrin 3,780,000 UZS in control with herbicides 10,550,500 UZS when using Gambit s.k. - 4.0 l/h. The largest conditional net income was 11,608,500 UZS when using Gambit SC - 3.0 l/ha, and the smallest conditional net income was 3,300,000 UZS in the control variant of the experiment with pendametalin.

The cost of grain (1 q) is 180,000 UZS in the control variant, 91,100 UZS when using Stomp 2 l/ha (standard), 92,365 UZS when using Gaitan 4 l/ha, 99,900 UZS when using Gaitan 5 l/ha, and in the control variant when using promethrin herbicides 165,000 UZS, Gezagard 50% s.c. - 1.2 l/ha (standard) 89134 UZS, Gambit s.k. s.k. - 4.0 l / ha and when applied to, it amounted to 89,240 UZS. With the correct use of herbicides in acceptable doses, the cost of grain is reduced.

The rate of return is 16.7% on the control variant, 42.7% when using Stomp 2 l/ha (reference), 42.0% when using Gaitan 4 l/ha, 38.0% when using Gaitan 5 l/ha, the effect of 19.1% in the control when using prometrin herbicides, 43.9% when using Gezagard 50% wc - 1.2 l/ha (standard), Gambit wc - 3.0 l/ha was 50 .2% when using Gambit s.k. - 43.8% when applying 4.0 l / ha.

In conclusion, we can say that the cost of gross production was the lowest in the control options and maximum when using Gambit s.k.-3.0 l/ha, while the cost of gross output per hectare was higher when using Gambit s.k.-3 .0 l/ha. ha. showed a difference of 8,160,000 compared to the control.

The highest cost was 2,497,505 UZS when using Gaitan 5 l/h, and the lowest cost was 1,980,000 UZS in the control options. Because the price of herbicides and trace elements is added. Then the difference between the options showed 429,500 UZS. When using Gambit s.k. - 3.0 l/ha, the conditional net income was 7,828,500 UZS higher than the control variant, and 1,446,000 UZS higher than the control variant. The cost of 1 centner of grain was the lowest and amounted to 79,706 UZS when using Gambit SC - 3.0 l/h, and the highest cost was 180,000 UZS in the control variant of the experiment with pendametalin. Gambit showed a higher yield when applying 3.0 l/ha and was 31.1% higher than the control and 6.3% higher than the standard.

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