Modern American Journal of Biological and Environmental Sciences
ISSN (E): 3067-7920
Volume 01, Issue 02, May, 2025
Website: usajournals.org

EFFECT OF APPLICATION OF SILICON NUTRITION ON ROOT AND STEM RESIDUAL MASS OF GROWTH

Charshanbiev U. Yu.
Ph.D. Associate Professors
Tashkent State Agrarian University,

Odil Yuldoshev,
Student of International Agriculture University, Tashkent Uzbekistan

Abstract
The article presents data on the improvement of general soil properties and an increase in the amount of stem and root residues of cotton when using the drug "Sila Silica". The results obtained show that in the variants of feeding cotton in addition to the root with "Sila Silica" 150 g 1, 2 and 3 times and applying herbicides before and after, an additional 1.21-1.70 t/ha of root and stem residues were achieved in the soil compared to the control variant.

Keywords: Soil, fertilizer, Sila silica, food, stem, root weed, herbicide, application.

INTRODUCTION

In China, Germany, the USA, Brazil, Argentina, India, Pakistan, Australia, South Korea, Russia, Ukraine, and a number of other leading countries in the world, more than 3,000 species of weeds are widespread in agriculture, of which more than 200 species damage the main agricultural crops. In more than 80 countries in the world, cotton is grown on about 33 million hectares of land, and 10-15% of the crop is lost as a result of damage by weeds. In our republic, it is very important to conduct research on the combined use of herbicides in various terms

Modern American Journal of Biological and Environmental Sciences
ISSN (E): 3067-7920
Volume 01, Issue 02, May, 2025
Website: usajournals.org

and rates, along with the main soil cultivation methods, in order to improve agrotechnologies for producing high and quality yields of cotton and winter wheat crops [1, 2, 3].

The development of agriculture requires the strengthening of crop nutrition, inter-row cultivation, and weed control and the improvement of its methods. Agrotechnical measures and crop rotation cannot ensure the complete elimination of weeds. Therefore, it is possible to significantly reduce them through the use of herbicides. It is necessary to map the types and quantities of weeds growing among agricultural crops, carry out crop rotation in all fields, and apply herbicides on this basis, that is, it is important to choose a particular herbicide based on the study of the composition and quantity of weeds growing in the fields [1, 2].

METHODS AND MATERIALS

Field experiments were conducted in the conditions of gray pasture soils of the Jizzakh region in 2020-2022 on cotton, winter wheat, and repeated crops of amaranth and buckwheat.

1 - experimental system. Field experiments in cotton in 2020 , 2021 , 2022 4 The experiment was conducted in 4 replicates with a 2-tiered layout . The total area of each plot was 7.2x50.0=360 m ^{2} , the calculated area 180.0 m ^{2} . The total area of the experiment is 0.5760 ha.

The experimental system is presented in Table 1. In the experiment Chances Herbicides 500 g/l were sprayed together with seed sowing, Galoshans 104 g/l was sprayed at the 2-6 leaf stage for annual weeds and when perennial weeds were 10-15 cm tall .

Modern American Journal of Biological and Environmental Sciences
ISSN (E): 3067-7920
Volume 01, Issue 02, May, 2025
Website: usajournals.org

Table 1 Experience system (2020 - 20 22 years)

Options	Suspension	Fertilizer rate, kg/ha, l/ha	Name of herbicides	Herbicide rate, l/ha
1.	Control	N 200 P 150 K 100 (BACKGROUND)	Herbicide-free	-
2.	BACKGROUND+ Power Silicon	(BACKGROUND) +1 5 0 g once	After Biogard , Galoshans 104 g/l	1.0+ 1.0
3.	BACKGROUND+ Power Silicon	(BACKGROUND)+ 1 5 0 g twice	Shansgard after Biogard 500 g/l	1.0+ 3.0
4.	BACKGROUND+ Power Silicon	(BACKGROUND)+ 1 5 0 g three times	Chances From 500 g/ l then Galoshans 104 g/l	3.0 +1.0

(2007) was used in conducting research (Table 1).

RESULTS AND DISCUSSION

Each plant in the field affects soil fertility to a greater or lesser extent. Plants absorb nutrients with them to a certain extent during the growth period. To restore nutrients, they can be restored by feeding with additional organic fertilizers and leaving the root and stem residues of the crop in the soil. Taking this into account, the amount of stem and root residues was determined in the experiment conducted on cotton crops (2020-2022).

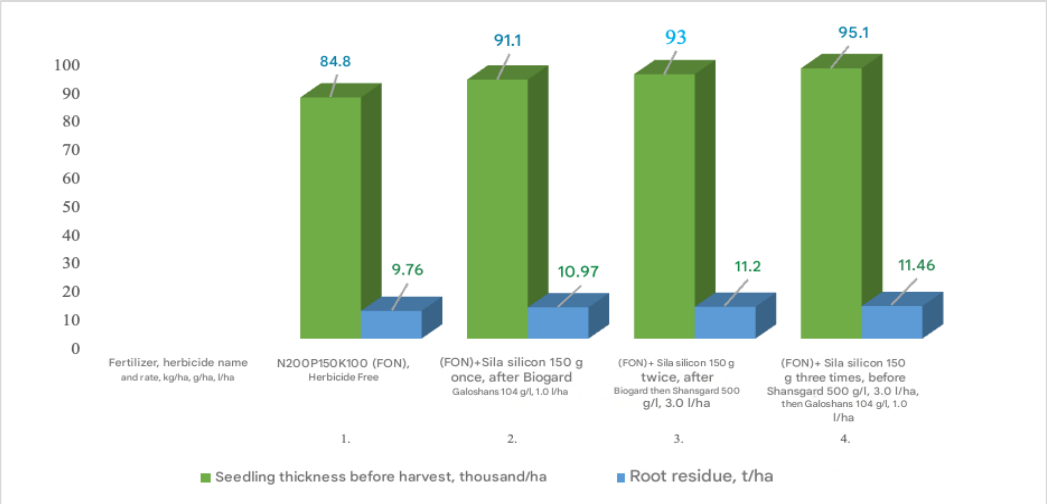

Figure 1. Effects of cotton feeding and weed control herbicides on root-root residue, (2020-2022)

Modern American Journal of Biological and Environmental Sciences
ISSN (E): 3067-7920
Volume 01, Issue 02, May, 2025
Website: usajournals.org

The effect of mineral fertilizers and "Sila silicon" feeding and the use of organic and chemical herbicides against weeds on the amount of root and stem residues was determined. In this case, the control $N_{200}P_{150}K_{100}$ (BACKGROUND) (without herbicide) variant was 9.6 t/ha, while in the second variant, where Galoshans 104 g/l, 1.0 l/ha herbicides were applied before and after Biogard , it was 10.97 t/ha. (BACKGROUND) + Sila silicon 1 5 0 g was sprayed twice , and after Biogard , Shansgard 500 g/l, 3.0 l/ha before - after the third option, fiber output is 11.2 t/ha. (BACKGROUND)+ Sila silicon 1 5 0 g sprinkled three times, Shansgard 500 g/l, 3.0 l/ha, followed by Galoshans 104 g/l, 1.0 l/ha pre-post was found to leave 11.46 t/ha of roots and stems in the fourth option. Compared to the control option, 1.21 - 1.7 t/ha more accumulation of root and stem residues was achieved (Figure 1).

CONCLUSION

In addition to root feeding, 1, 2 and 3 times of 150 g of "Sila silicon" and the use of herbicides in the pre- and post-treatment variants led to the deposition of 1.21-1.70 t/ha of additional root and stem residues in the soil compared to the control variant. This ensures an increase in organic humus in the soil. As a result, it helps to increase organic residues and activate the activity of microorganisms. As a result, it improves the general (agrophysical and agrochemical) properties of the soil, leading to an increase in crop growth, development, yield elements and productivity.

REFERENCES

1. Makhkam Shodmanov and Ozoda Mustafoeva. Effectiveness of successful application of herbicides " Chemical Glyphosate " and " Himstop 330 " against annual and perennial weeds in cotton fields of Uzbekistan.
2. Nasirov B., Charshanbiyev U., Eshankulov J. Efficiency of application of herbicides which are samurai 33% ek zellek super 104% ek and triflurex 48% ek against weeds in cotton fields, Web of Scientist: International Scientific Research Journal 209, 136-139 (2021).

Modern American Journal of Biological and Environmental Sciences
ISSN (E): 3067-7920
Volume 01, Issue 02, May, 2025
Website: usajournals.org

3. Cumali Ozaslan, Bekir Bend it. Determination of Weeds in Cotton Fields in Southeastern Anatolia Region of Turkey. Soil-Water Journal (2013) Vol. 2., Number 2 (2) Turkey-2013. pp. 777-1784.