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Analysis of the effects of Vigosuron herbicide on the “White Wheat” variety

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Abstract

Annotation: The total and root length of the plant in 0.4% solution, the number of roots and the total weight of the plant with 5 different effects on wheat germ from 0.2% solution of Vigosuron herbicide to 1.0% solution the 0.2% solution has been studied well when the surface of the plant, ie the germination length of 0.8%, is affected. In 1.0% solution of herbicide content in the solution was lower than all indicators. The experiments were carried out in laboratory conditions in the roll method and Petri dishes. 9 morphophilic traits were analyzed and tabulated in the roll method, 9 in wheat and in experiments in Petri dishes. Statistics of changes in the concentration of herbicides according to the morphological characteristics of the seedlings was studied and presented in tables.

Keywords: Vigosuron herbicides, wheat, solution, total length, length of subsurface, number of roots, new germination, root length

Introduction

All man's actions stem from satisfying his own needs. The first human need is foodstuff. Increasing population on earth has led to an increasing demand for food. In these situations, people are developing easy and convenient ways to increase their natural production quantities and produce products. In the cultivation of natural products, a variety of means are used in agriculture to obtain the harvest. One of the tools used for this purpose is herbicides. Herbicides (lot. Herb - grass, herb and caedo - kill) - is a group of chemicals used to eradicate weeds, fight pests, and affect the development of plants. In agriculture, field cultivation, orchards and vineyards, meadows are used to increase the above objectives. There are several types of herbicides: water-soluble powder (dalaponva etc.), water-absorbing powder (pakhton, cotoran, cotophor, promethrin, gezagard, atrazine, agelonwa, etc.), emulsifying concentrates with water granules (granulated drugs) consisting of treflane, dual, banolva, etc.), fillers and active substances.

Herbicides are grouped according to their influence and into groups of selective drugs. Massively affecting herbicides are applied to all kinds of plants (aerodromes, high voltage lines, etc.), and selective agents are used against weeds in fields, orchards and forests. These groups of herbicides do not have a strict boundary between them, since many drugs are selectively effective when used in small quantities and can have a high total mass effect. The selective effect of herbicides depends on the types of crops and weeds, the stages of their growth and development, and the soil climatic conditions. The selective effecting herbicides can be applied before sowing, during sowing, before or after germination or weeds. For example, treflane or promethrin are usually sprayed with weeds for one year in the fields prior to planting. The choice of herbicides depends on soil type, precipitation, and soil retention times. with special equipment installed in the sowing unit. It is possible to use any of the above herbicides before sowing. In this case, the herbicide selection depends on the depth of soil germination in the soil, its rate of germination and the shelf life of the drug. According to the method of action: chemicals that destroy the surface (only part of the plant tissue, such as mineral oils, nitraphene, DNA, etc.) and absorb (influencing, penetrating and penetrating into the body's tissues and tissues); such as atrazine, agelone, etc.) Herbicides. The strength of herbicides is weaker than that of external herbicides. Their effect is very slow and depends on the amount of solution used, the size of the drops, and how smooth the spray is. Effective herbicides are effective against perennial weeds, whose roots grow very deep.

Objects and methods of the research

In the experiment, 30 wheat seeds were sown for each experiment, and the effectiveness of the experiments was measured by measuring the length and mass of seedlings, taking into account 10 morphological features (total length, total weight, weight of the upper part, length of the upper part, width of the first leaf of the plant, width of the first leaf (mm), number of roots, length of the root, weight of the root, upper part weight and root weight ratio) of the experiment in the roll method, and 6 morphological features (total length, total weight, upper part length, hypocotyl length, number of roots, root length) in the Petri dish experiment.

Error for each arithmetic mean ($M \pm m$), root mean square deviation (s), coefficient of variability (CV), degree of variability of attributes (G.N. Zaytsev): $CV > 20\%$ - high, $CV = 11 - 20\%$ medium, $CV < 10\%$ - low.

The effectiveness of the experiment was determined by measuring the length and mass of the parts of the wheat seedlings to be studied (1, 2).

$$x = \frac{l}{L} \cdot 100\%$$

x – longitudinal inhibitory effect (%).

l – The average length of the experimental part (cm).

L – The average length of the controlled experiment (cm).

$$y = \frac{m}{M} \cdot 100\%$$

y - Mass inhibitory effect (%).

m – The average mass of the experimental part (gr).

M - The average mass of the controlled experiment (gr).

The processing of statistical data was carried out in accordance with the methods adopted using the software package STATISTICA and EXCELL (Ploxinsky, 1970; Zeytsev, 1991).

The ontogenetic tactic was assessed by the nature of the coefficient of variability (CV) as the growth conditions deteriorated (Zlobin, 1989). In general, four types of ontogenetic tactics are distinguished. The first type of ontogenetic tactic is the stabilization tactic (character change stabilizes), the second is the convergence tactic (variability decreases), the third is the difference tactic (variability increases), and the fourth is the indefinite variability tactic (indeterminate changes in the degree of character change). The ontogenetic strategy for species survival (Ishmuratova, Ishbirdin, 2004) was determined by the nature of the changes in the morphological integrity of the plants and by the coefficient of character detection (as the average square of the pair ratio coefficients for all characters - R^2_m).

Results and discussions

Herbicides are sprayed in 3 ways: bulk, ribbon-shaped and ashamed. The drug is sprayed evenly throughout the entire area (before planting treflane or promethrin, and deworm after the fall dew). During planting (tape width 25–30 cm; scotoran, promethrin, cotophor, agelon, dual, stomp, atrazine, etc.) and after sowing (12–15 cm from both sides of the protective zone, cotoran; promethrine). When weeds are encountered in different parts of the field, the herbicides (for example, perennial weeds and gummy sponges) are embarrassed. Some herbicides can be used as arboricides for desiccation of wild land, desiccation for dehydration of plant roots (tacrolol, dinitrol, pentachlor, etc.), defoliant (endothelial, etc.) and plant inhibitors in planting leaves, some have the same effect as growth stimulants when used in small quantities (2,4-D, 2,4-DM, etc.).

There are currently over 1,000 herbicide compounds known. More than 150 of them are used to fight weeds. In Germany, for the first time in 1934, organic compounds were used dinitroortokrezole for chemotherapy purposes. Subsequently, 2, 4-D, 2M-4X drugs were used. Improper application of herbicides (high dosages, breach periods, etc.) pollution of soil and water bodies, loss of plants and animals, disturbance of norms and deadlines for herbicide use in biogeocenosis in Uzbekistan is possible.

Since 2017, studies on the effects of herbicides on our plants have been conducted on such plants as wheat, peas, cotton. Our study investigated and analyzed the herbicide availability of selected plants. The following is an example of the Vigosuron herbicide classification for white wheat varieties. The drug is firstly presented in the form of emulsion concentrate, which has high permeability in weeds, does not reduce the technical effect in adverse weather conditions, and guarantees sustainable growth.

As a result of our analysis, Vigosuron herbicides for white wheat varieties were assessed at 0.2, 0.4, 0.6, 0.8, 1.0 levels and analyzed on 5 criteria:

1. The total length
2. Length of the underground
3. Number of roots
4. New shoots
5. According to the length marks.

During the experiment, 30 doses of wheat were obtained for each dose, and the results were analyzed using the Statistical Analysis Program. Based on the results of the analysis, the following data were obtained.

According to the results of the total wheat length, the highest value was observed when the herbicide was 0.4% and the lowest 1.0% solution (Diagram 1).

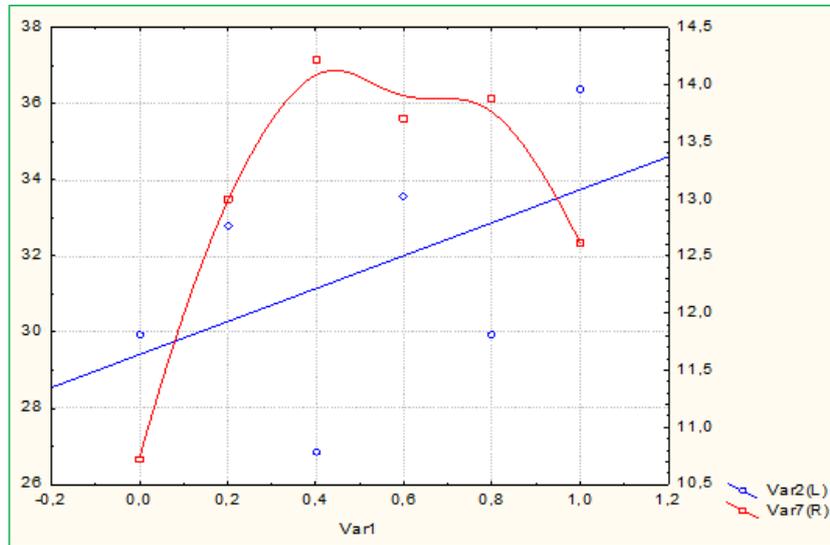


Diagram 1: Total length

It was studied that the Vigosuron herbicide increased from a 0.2% solution to a 0.8% solution and a drop in 1.0% solution (Figure 2).

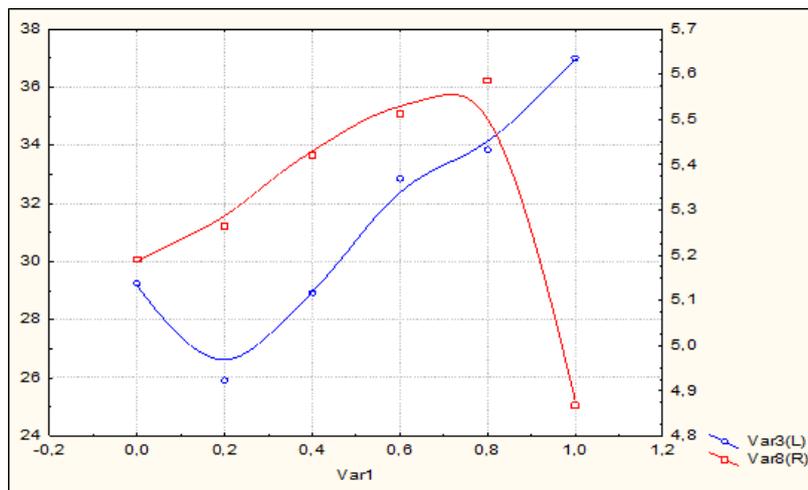


Diagram 2: Shows the length of the surface of the germination

Increase in the number of roots when the herbicide was injected with 0.2% solution, the increase in the herbicide size, that is, the increase in the number of roots from 0.4% solution to 0.8% solution, and the decrease in the number of roots in 1.0% solution. (Diagram 3).

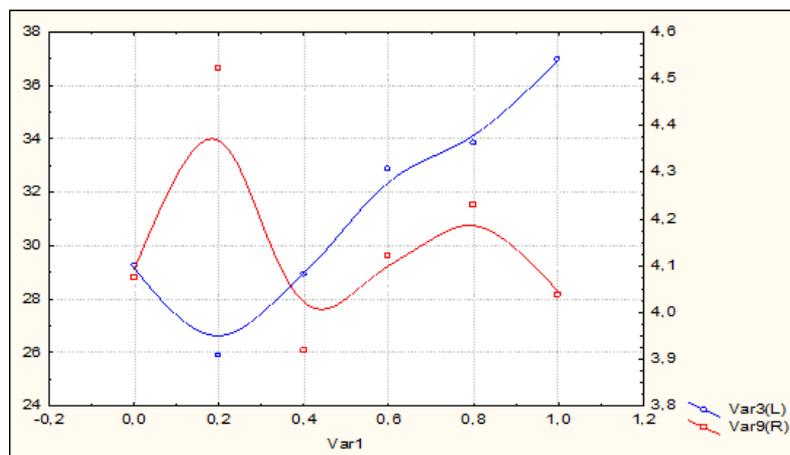


Diagram 3: Number of roots

High mass growth of the plant is reflected in the reduction of the Vigosuron herbicide by 0.2%, and from the 0.4% solution to 1.0% solution, the opposite is observed (Figure 4).

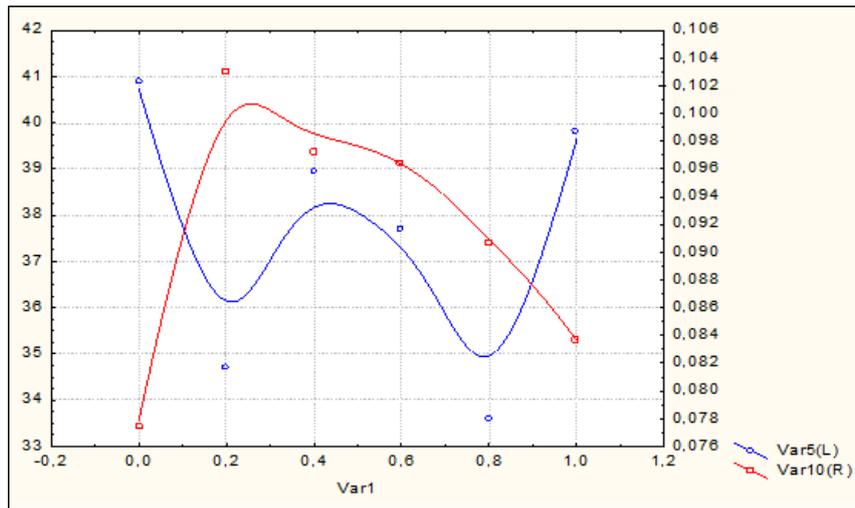


Diagram 4: The total mass of the plant

The longest root of wheat germination was observed when exposed to 0.4% solution of Vigosuron herbicide. The root length index was reduced from 0.6% solution of herbicide to 1.0% solution.

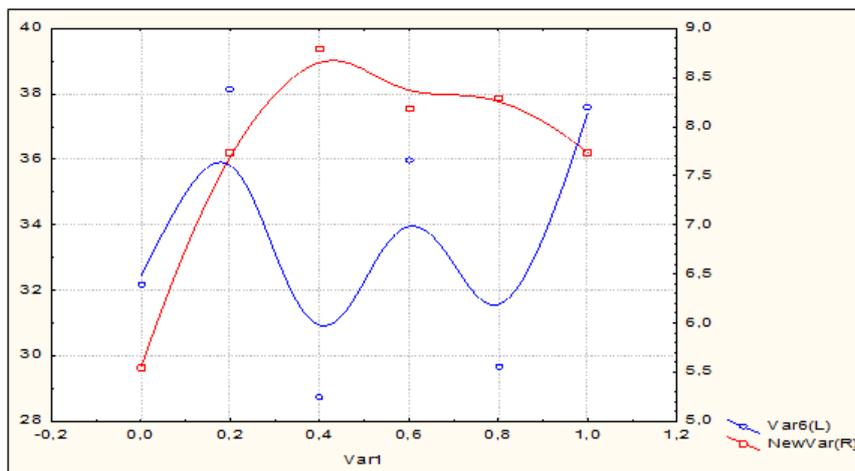


Diagram 5: The length of the root of the plant

According to our analysis, the total and root length of the plant in 0.4% solution, the number of roots and o the total weight of the wire was studied in 0.2% solution, when the surface of the plant was well developed, under the influence of 0.8% solutions of the germination length In 1.0% solution of herbicide content in the solution was lower than all indicators.

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