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The Influence of External Environmental Factors on Agricultural Plants of The Northern Districts of Surkhandarya Region

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In this article, the harmful effects of fluorine compounds released into the environment by the State Unitary Enterprise of Tajikistan Aluminum Company (TALKO DUK) on agricultural crops, humans, and animals are highlighted. there are cases of growth in the composition of plants. As a result of the increase in the amount of fluorine compounds in the air, it has been shown that plants cause various ecological problems, such as a decrease in productivity, some reductions in the growth and development of plants, and drying of plant leaves.

Key words: Sariosia, Dashnobot, Sufis, environment, atmosphere, Tajikistan, Aluminum Plant, biosphere, seed, ecology.

Since the 50s of the last century, the reason for the creation of the man-made environment in the biosphere is that, in order to satisfy its needs, mankind has polluted the environment by extracting more underground and surface resources, and by using non-incarnated technologies, it has polluted the environment even more. As a result, this environmental pollution has harmful effects on people, plants, and animals.

The fluorine compounds released into the environment from the Tajikistan Unitary Enterprise (Tajikistan Aluminum Plant) have a harmful effect on agricultural crops, people, and animals, and various diseases are increasing (Norboev et al. 2006; Turdiyeva, Norboev 2007; Boynazarov et al. 2007; Alikhanov 2008). The amount of fluoride compounds in soil, plants, and water is increasing year by year, resulting in environmental problems.

Atmospheric air pollution has a negative effect on the active growth and development of plants and agricultural crops. Due to the spread of many harmful substances, especially fluorine compounds, from the state unitary enterprise "Tajikistan Aluminum Company" (TALKO DUK) to the environment, Sariosiyo, Uzun, Denov, Altinsoy districts of Surkhandarya region

are creating an important environmental problem in agricultural production . Germination, growth, and development of existing plants are observed to decrease, yield and vitamin content are reduced. A decrease in the amount of vitamins, carbohydrates and mineral nutrients in living organisms has a harmful effect on the course of biophysical, biochemical and physiological reactions, and leads to a violation of the normal processes of cells and tissues. TALKO DUK is one of today's urgent environmental issues, which is the problem of applying measures to agriculture to regulate the amount of vitamins in developing plants, their seeds, grains.

Naturally, even if the amount of vitamins in plant seeds is high, physiological processes are disturbed. Therefore, the amount of vitamins in the seeds used in agriculture today should be moderate, otherwise their fertility, development and productivity will decrease. Plants become resistant to various diseases.

There is an effect of fluorine compounds on the amount of vitamins in plants growing under the influence of TALCO DUK, and the decrease in the amount of vitamins in the composition of plant grains and seeds was studied.

Under the influence of TALCO DUK, growing tomato seeds were soaked for 24 hours in various amounts of solutions of vitamin B1 and, of course, control (in plain water), and an average of 100 seeds were grown. Seeds were grown in petri dishes on hygroscopic (filter paper) paper in laboratory conditions and were observed and analyzed for 12 days.

According to the obtained results, the germination, growth and weight of tomato seeds with 5 mg/l solution of vitamin V 1 in our variant 1 are practically not different from the control variant.

It was determined that the germination of tomato seeds was 16-20% higher than the control in our options 2 and 3 developed with a solution of 10 mg/l to 30 mg/l of vitamin B1 .15-30% decrease in the germination of tomato seeds was observed in our variants 4 and 5 produced with 50 mg/l and 100 mg/ l solution of vitamin V1 compared to the control.

Conclusion High levels of vitamin B1 solution have a harmful effect on the fertility and development of plants.

Of Sariosia district were soaked in solutions of different concentrations of vitamin V1, and when the root mass was measured for 12 days, the solution of vitamin V1 of 15-20 mg/l is the highest standard for pumpkin, in which the increase in root mass was 28-31%, 20-30% mg/l in sunflower, 20-27% in corn, 30-50% mg/l, an increase in root mass by 20-34% was observed. According to the above results, even 50 mg/l vitamin B1 solution had a positive effect on the seeds of the corn plant , and an increase in the seed mass by 34% was observed.

Ascorbic acid (vitamin C) compound is quickly broken down under the influence of external factors. That is, under the influence of heat, in an alkaline environment, in the presence of oxygen and under the influence of heavy metal ions, the natural biocatalyst oxidation of ascorbic acid turns into ions and hemochromogens, phenols.

It is known that some vitamins are extracted from the roots of plants , and vitamins contribute to the fertility of the soil. There are more vitamins in the upper part of the soil than in the deep parts, because some vitamins are synthesized in the surface part of the soil with soil microorganisms.

Vitamin V 1 is more in the upper part of the soil, i.e. 2 3 смand 5 , compared to 9 смthe deeper part of the soil 40 50 см, in the soil at the depth of 60 80 см, even under the conditions of pollution with 250-300 mg/kg of fluorine compounds, it is almost unchanged compared to the control. Is the change of vitamins of ascorbic acid (S) and thiamine (V 1) dependent only on the direct effect of fluorine compounds or on the activity of enzymes? That is, the activity of enzymes of the above vitamins under the influence of fluorine compounds is not connected? To solve this problem, we determined the activity of ascorbinoxidase and thiaminose enzymes in the soil under the influence of TALKO DUK . It is known that ascorbinoxidase and thiaminose enzymes play an important role in the synthesis of vitamins C and V1 .

In conclusion The fluorinated compounds released into the environment by the state unitary enterprise "Tajikistan Aluminum Company" (TALKO DUK) or the former Tajikistan Aluminum Plant not only have a harmful effect on agricultural crops, but also cause a decrease in the amount of vitamins and enzyme activity in the soil where these crops grow.

List of Used Literature

1. I.A. Karimov "Uzbekistan on the threshold of the 21st century: threat to security, conditions of stability and guarantees of development", T.-1997y.

2. Gafurova L.A., Raimboeva G.Sh. Free amino acids and erodirovannyx typichnyx serozemax mejdurechya Chirchik-Keles. Tashkent-"Mekhnat" 2001.

3. Turdieva S., Norboev N. Amount of sugar and vitamins in plants affected by fluoride compounds (Uzbekistan, a legal democratic state. Collection of scientific articles) Tashkent 1996. pp. 132-134.

4. Turdieva S. Changes in the amount of vitamins in plants when the soil is polluted with fluorine compounds (abstracts of scientific-practical conference lectures on ecological aspects of rational use of soil) Tashkent 1997. pp. 18-20.

5 . Turdieva S., Norboev N., Norboev Sh. Effects of Alumina Wastes on Plants (Ecology Bulletin) 1998. No. 6. pp. 16-17.

6. Turdieva S. Changes in the amount of vitamins in the fruits of plants growing in polluted environment (Biology Journal of Uzbekistan) 1999. No. 3. Pages 32-35.

7. Norbaev N, Turdieva S. "Important problems of agroecology in Uzbekistan" Agrarian Science: Achievements and prospects. Tashkent 2002 pp. 98-99.

eight. Turdieva S., Norboev N. “Investigation of the combined effect of gamma radiation and hydrogen fluoride on the content of vitamins in maize sproutings . Agrarian science: achievements and prospects. Tashkent-2002. 116-117s.

9 . Riskyeva Kh.T. The influence of scientific and technical "progress" on the composition of biogeocenoses of individual landscapes, "Er resuslaridan Samarali foidalanish muammolari » Materials of the scientific-practical conference, Tashkent, 2007 г. pp. 183-192.

10 . RiskievaKh.T . etc. The content of heavy metals in irrigated glasses Surkhandarin region, "Er resuslaridan Samarali foidalanish muammolari » Materials of the scientific-practical conference, Tashkent, 2010 г. pp.224-227

11 . Riskyeva H.T. Patterns of changes in the ecological state of soils under the influence of pollutants "Er resuslaridan Samarali foidalanish muammolari » Materials of the scientific-practical conference, Tashkent, 2007 г. pp.13-18.

12 . N. Norboev , B. R. Boynazarov , Z. Berdiev . " Recommendations on determining the durability of agricultural crops growing under the influence of the aluminum plant of Tajikistan using electrophysical methods " T.-2006y .