



Influence of Fluorine in Atmospheric Waste on Mulberry Trees in Surkhandarya Regions of the Southern Region of our Republic

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ABSTRACT

The change in the intensity of respiration of mulberry trees depending on the season depends primarily on temperature and humidity, as well as the time of exposure to aluminum emissions from plants. The intensity of respiration of mulberry leaves decreases by 15% in April, by 20% in May, by 39% in June, and by almost 50% by October.

Keywords:

tyr, leaf, aluminum plant, fluorine, chemical, biological, chlorine.

120 tons of over 22,000 tons of substances produced by the aluminum plant in Tajikistan are hydrogen fluoride, which is harmful to human health and nature. "Sariosiyo, Uzun, Denov, Oltinsoy and Jargorgan districts of Surkhandarye region, where 600,000 people live, are the most affected by the release of toxic waste into the environment," said the statement issued by the Ecological Movement of Uzbekistan.

The amount of elements K, Mn, Cu, Cr decreases in the leaves of mulberry trees growing under conditions polluted with fluorine compounds. The amount of Fs, Br, Fe increases. This, in turn, leads to disruption of biophysical, physiological and other processes in cells and tissues, as well as their functional states (2).

Washing the leaf brought from Sariosia district in ordinary drinking water is beneficial to a certain extent. When a mulberry leaf brought from the damaged place is treated with a calcium chloride solution, the viability of the

mulberry silkworm is 90-95% from the 2nd to the 4th year. At the age of 5, it is 60-65%. The total number of wrapped cocoons is 64. The control experiment consisted of 96 cocoons (4).

We believe that hydrogen fluoride gas reacts with calcium oxide to form the compound CaF_2 . Due to the extremely low solubility of CaF_2 in water (40 ml/l), permeability in cells and tissues is extremely low. As a result, fluorine has little effect on internal organelles.

The results obtained in the experiments show that sodium fluorine, due to its extremely good solubility (4040-4210 ml/l), affects the internal organs of the cell and causes severe poisoning of the silkworm, negatively affecting its growth, development and productivity. In fact, aluminum makes the silkworm extremely resistant to the effects of industrial toxic gases (Azimjonov et al. 1991).

In 2008-2011, we conducted experiments on the oxygen absorption of the respiration intensity of the leaves of the mulberry tree growing within the influence of

the aluminum plant in the agricultural fields of Dashnabod, Saryosi district.

As a control, leaves from the fields of Norali Boymurodov collective farm of Zharkurgan district were taken. In 2008, the leaves we collected for the experiment contained fluoride compounds above 200/mg kg. In the previous years, the amount of fluorine compounds, which pollute the environment, corresponds to 100-1300 tons per year. (Konyukhov, 1991).

Mulberry leaf oxygen absorption intensity, carbon dioxide gas release and respiration coefficient were determined by gasometric Warburg apparatus and electronic polarography (PA-3) apparatus (DK).

Table 1

Changes in respiration intensity in mulberry leaves growing under the influence of an aluminum plant

The name of the plant	Jarkurgan district (control)	Sariasia district (experience)	Respiration intensity %
Mulberry tree	136 ± 3,5	102 ± 2,4	79%

The results of the experiments show (Table 1) that the intensity of respiration in all the analyzed plants decreases by 79% in the mulberry leaf on June 10-15.

The intensity of respiration in mulberry leaves was studied. The obtained results showed that the respiration intensity of these trees decreases by 5-15% in April and May, as a result of the arrival of summer season, i.e. as the days get warmer, there is less moisture and more accumulation of aluminum plant toxic substances.

Table 2

Seasonal variation of respiration intensity in leaves of mulberry trees growing under the influence of aluminum plant (1g per wet leaf per hour, in terms of moles)

Changes in respiration intensity of mulberry leaves during the growing season							
Control	April	May	June	July	August	September	October

	96, 5± 5,4	119 ,7± 5,2	13 8± 3,3	132 ,6± 2,5	126 ,8± 4,0	113 ,0± 5,0	117 ,6± 4,2
exp	82, 9± 5,3	94, 5±3 ,4	85 ±5, 1	80, 0±3 ,9	71, 4±2 ,2	68, 4±1 ,0	57, 3±4 ,0
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200 mg/kg in mulberry tree, accumulation of T. It corresponds to the experiments of Toylokov et al., 1991. Former Sverdlov, Pravda, Dashnobad collective farms were considered the most heavily polluted fields. Therefore, it was found that the intensity of mulberry leaf respiration decreases by 5-10% in May, April, 30-40% in June, August, September. But the respiratory intensity, i.e. the reduction of respiratory intensity in the mulberry leaf in April is 15% in May, 20% in June, 39% in October, almost 50% in comparison to the control.

In the experiments we conducted, we observed a decrease in respiration intensity in agriculturally important plants such as tomato, bell pepper, corn, and cotton, as in the case of the above mulberry leaf.

Summary. The change of respiration intensity in mulberry trees depending on the season depends primarily on the temperature and humidity and the time of exposure to aluminum plant emissions. Mulberry leaf respiration intensity is reduced by 15% in April, 20% in May, 39% in June, and almost 50% by October.

Reference

1. И.А.Каримов "Ўзбекистон XXI аср бўсағасида: хавфсизликка таҳдид, барқарорлик шартлари ва тараққиёт кафолатлари" //Тошкент 2017 йил
2. Азимжанов И.А., Чичигина И.Л., Бекпулатов С.Т., "Роль шелковицы загрязненного воздуха и гебли гусениц шелкопряда в зоне воздействия Таз АЗ В сб."// Рекомендация научно-практический конференции по рассмотрению состояния итогов в выполнения "Целевой научно-технической программы работ по снижению Таджикского алюминийевым

заводом выбросов загрязняющих веществ окружающую среду до предельно допустимых уровней" город Турсунзаде. 1991. С. 73-85.

3. Маматкулов К. Полярографические методы исследования содержания глюкозы и фруктозы у плодовоощных культур, растущих в условиях фтористых загрязнений.// Қишлоқ хўжалигини инновацион ривожланишида аграр фани ва илмий техник ахборотнинг роли. Республика илмий-амалий анжумани материаллари I- қисм 2010 й. Ташкент. – С.123-124.
4. С.Саматова, У.Т.Данияров "Республиканизнинг жанубий вилояти Сурхондарё туманларида тут дарахтига фторли атмосфера чиқиндиларининг таъсири" Ўзбекистон аграр фани хабарномаси журнал №6(6) 2022 йил 71-73 бет
5. Норбаев Н., Примоченко О. Влияние фтористых засолений на содержание минерального питания сельскохозяйственных культур. //Тезисы докладов участников 1-ой региональной конференции по миграции солей на территории Среднеазиатского региона. Ташкент, 1988. -С.43-45.
6. Норбаев Н., Турдиева С. Ўзбекистонда агроэкологиянинг муҳим муаммолари. //Международная научно практическая конференция. Аграрная наука: достижения и перспективы. Ташкент. 1-2 май 2002. -Б. 98-99. 9.
7. Норбаев Н., Бойназаров Б. Исследования электрокинетического потенциала клеток в условиях атмосферного загрязнения. //Ҳозирги замон физикасининг долзарб муаммолари. Термиз. 2002. -С.34-35
8. <https://ziyouz.uz/tag/ekologik-muammolar/> интернет сайд.