Effect of Izatizon on the plant productivity

Steshenko O.V.

The T.G. Shevchenko Kyiv National University, Kyiv, Ukraine, e-mail: sirokko@mail.ru

Considering the present ecological conditions in our country, it is necessary to think about the problem of the organism protection from different diseases. As a result, of ecological crisis human and also plant and animal organisms became weak and their immunity level is comparatively low. This makes us weak to different harmful factors: bacteria, viruses.

Viruses are the biggest threat for us because they provoke most of serious, almost incurable illnesses that except not only acute clinical course but chronic course as well that leads to the infection complications and tumor growth. Moreover, it is very difficult to treat virus diseases because very often antiviral preparations kill not only infected cells but also they are very toxic for whole our organism. The study of new preparations that will help organism in the struggle against viral diseases is of current importance.

Cooperating during two years with the laboratory of Potopalskiy A.I. of the Institute of Molecular Biology and Genetics of NASA of Ukraine I made the research to determine izatizon influence on plant productivity and plant persistence to the viral diseases during vegetative period. I chose, for my research, the plant, derived by method of purposeful non vectorial hereditary information transfer from one plant to another. This plant was revealed in the laboratory of A.I. Potopalskiy. It is a hybrid of corn and rye called “Zhytnyah”. This is a plant of winter-annual type growth period and has some common characteristics with parent plants – corn and diploid rye. “Zhytnyah” was treated with izatizon by steep before sowing. After a time first harvest was obtained.

My contribution to this research consisted of statistic results balancing, comparison of phenotypic characteristics (ear length, segment quantity, awn length, seed quantity in the ear, seed weigh in the ear) control (meaning plants that weren’t treated with izatizon) with characteristics received in the first generation (each characteristic sample – 100).

Phenotypic characteristics of plants treated with izatizon vary in the intervals: ear length from 5,0 – 10,5 sm.; awn length from 2,5 – 7,0 sm.; segment quantity from 12 – 30; seed quantity from 7 – 30 sm.; seed weigh from 190-800 mg. average ear length – 7,675, awn length – 4,173, segment quantity – 19,63, seed quantity – 18,65, seed weigh – 415,3.

Phenotypic characteristics of control plants (that weren’t treated with izatizon) vary in the intervals: ear length from 3-7,8 sm.; awn length from 1-6 sm., segment quantity from 6-18 items, seed quantity from 5-18 sm., seed weigh from 100-470 mg. Average ear length – 4,798, awn length – 2,944, segment quantity – 10,9, seed quantity – 10,26, seed weigh – 229.

Statistic calculation data are given in the table:

Statistic calculation data:

	Izatizon				Divostim		
Indication name	Indication Average meaning	Average from averages	Average quadratic		Indication Average meaning	Average from averages	Average quadratic
Ear length	7,675	8,056	1,195		4,798	4,917	1,098
Awn length	4,173	5,421	0,842		2,944	3,520	1,296
Segment quantity	19,630	20,937	4,340		10,900	12,550	3,154
Seed quantity	18,650	18,364	4,842		10,260	10,820	3,042

Seed weigh	415,300	410,753	112,234		229,000	298,920	81,786

Conclusions:

1. According to obtained data izatizon is very advisable for farms because it adapts plants to the environment unfavorable conditions, has antiviral, antibacterial and immunomodulating influence that leads to the harvest increase.
2. Given results were obtained under the accurate validity of preparation concentration and seed treatment technology.
3. Based on my researches I consider it necessary to use izatizon in farming for greater harvests receiving.