European Journal of Innovation in Nonformal Education (EJINE)
Volume 1 | Issue 2 | ISSN: 2795-8612

Methods of Teaching the use of Radioactive Elements in Practical Areas in Biology Lessons

Sattorova Sadokat Khayriddinovna
Biology teacher of secondary school No. 34 of Nuratinsky district of Navoi region

A B S T R A C T

Currently, as a result of the very rapid development of science, technological progress, the sharply increased amount of information, the limited time of its use in the educational process necessitate a technological approach to the educational process.

A R T I C L E I N F O

Article history:
Received 28 October 2021
Received in revised form
28 November 2021
Accepted 31 December 2021

Keywords: Teaching, Methods, Biology, Areas.

Hosting by Innovatus Publishing Co. All rights reserved. © 2021

In order to further develop students' interest in biological sciences, it is possible to further develop interest in the information provided by us on the branches of agriculture and animal husbandry. To give students knowledge about the effective use of radioactive isotope radiation in the agricultural sectors of the Republic: cotton growing, sericulture, crop production, animal husbandry, etc. One of the main means of forming practical skills and abilities about the inextricable connection of scientific achievements with production and increasing their interest in science.

Currently, scientists in Uzbekistan are studying the effect of radioactive radiation on crops in order to improve existing cotton varieties, increase yields and other purposes. It has been established that when crops are irradiated with radioactive radiation in this area, along with the rapid growth of cotton, its yield also increases. The change in the content of fat, hydrocarbons, proteins, enzymes and other substances in grain under the influence of radioactive rays is the main reason for this. Such chemical changes lead to biological changes in cotton. This circumstance requires an even more thorough study of the effects of radioactive rays on grain. [3]

We can very easily see that the target atoms are scattered on the cotton leaves. To do this, the same leaf or a certain sprig of cotton is held, glued to a photographic plate, after a while we see a trace of target atoms on it.

At a later time, the marked atoms are widely used in various fields of agrobiology. The purpose of this:

1. To study the process of plant nutrition through roots and leaves.

2. Study of the accumulation of nutrients in the plant body.

3. It consists in studying the process of transformation of various substances present in plants into plants.

Studies on which feeds are most useful for livestock at the present time and can be fattened quickly also provide information that they are carried out using the marked atom method. Such knowledge is very interesting for students studying biology. He also forms his interests in physics. It convinces of the importance of radioactive radiation for the future, and also contributes to the formation of ecological and patriotic feelings among students, while developing an interest in the subject, a worldview, and the ability to think logically.

We will introduce readers to the following data obtained from experiments using reliable atoms in cotton:

If superphosphate is thrown to a depth of 3-4 cm under manure, the plant will digest it well. The intensity of assimilation of superphosphate by the plant is accelerated. If phosphorus is diverted from the seed material by 2-3 cm to a depth of 10 cm, then the flow of phosphorus to the plant is delayed for 8 days. If you bypass 5-7 cm at a depth of 13-15 cm, then the intake of phosphorus into the plant will be delayed for 18 days. As a result, the lack of phosphorus in the plant slows down growth. The method of marked atoms is of great importance for determining different periods of plant growth and development.

Experiments show that the nutritional abilities and timing of plant development are different. There are two critical periods for cotton, during which the absorption of phosphorus by the plant becomes very strong. If phosphorus is introduced in these two periods, another measure will be taken for a higher cotton yield. Another measure for obtaining a high yield of cotton is irradiation of its crops with radioactive light. Experiments show that when the sown seed material is irradiated with 1500-2000 X-rays, the yield increases by 5-6 quintals per hectare, the quality of cotton fiber improves, the fat content in the seed material increases.

γ- rays are used for storing agricultural products and pest control. A measure was found to prevent the insect from entering and reproducing in grain stored in warehouses, elevators. This work is carried out in two ways: 1) by placing an isotope emitting a γ-ray in an elevator; 2) by passing grain to be stored in warehouses through a special conveyor with a device containing an isotope emitting a γ-ray.

Potatoes, onions and other agricultural products do not turn blue and do not fade in the warehouse when irradiated with γ- rays. 10-15 m is enough to do this work.

Studies on which feeds are most useful for livestock at the present time and can be fattened quickly also provide information that they are carried out using the marked atom method. Such knowledge is very interesting for students studying biology. He also forms his interests in physics. It convinces of the importance of radioactive radiation for the future, and also contributes to the formation of ecological and patriotic feelings among students, while developing an interest in the subject, a worldview, and the ability to think logically.

List of literature:

1. S.A.Asimov, Sh.Abzhalilov. "Elementary Particle Physics". Tashkent. "Teacher." 1985.
2. R.B. Bekzhonov "physics of the atomic nucleus and elementary particles". Tashkent. "Teacher." 1995.
3. Sh. Khatamov., Tillaev T. G. Kuzeev. et al . "Biogeochemical assessment of the state of soils and vegetation of cotton-growing farms in Uzbekistan" Tashkent. Preprint of the INP A N RUz. P - 3-520. 1991-ya. - 20-b.