SOME INNOVATIVE METHODS OF TEACHING THE SPECIAL COURSE ABOUT FUNGI WHICH DAMAGE VEGETABLES

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Abstract

Interactive lectures and groups are given in the article. Also there are given procedure of lectures and practical lessons on the chapter about fungi by using innovative methods (contrasting method, working in a group, writing an essay).

Keywords: innovation, interactive lectures, fungi, apothecium, perithecium, cleistothecium.

To achieve the high standard of knowledge that satisfies needs of labor market and governmental industrial-innovative development tasks, and meets the advanced

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world experience in education is a goal of Governmental Program on education development in 2011-2020 [1].

Globalization strengthens the world competition. And, therefore, society and the government pay special attention to the training of young professionals, the professional education and comprehensive training.

The innovative method of teaching the interwork “a teacher – a student” is a novelty in learning new materials. And one of them is interactive lectures (Figure 1). There are several types of interactive lectures (IL) [3]. The differences of interactive lectures from traditional lectures are: there is not given finished information, are directed to develop the theme, the printed or electronic material is given, the lesson is held through dialogue, the new information is given through thoughts and are finished with feedback [4-5].

![Fig. 1. Types of Interactive Lectures](image-url)
George Brown divided interactive lectures this types: classical, problem-centered, comparative, serialistic or sequential, progressive-story telling.

Now we need to form knowledge about fungi on a par with practical and theoretical knowledge of plant pathology, mycology, systematics of plants, botany. According to the results of our research work was prepared the special course to implement to the learning process of students in the specialty "Biology" of Kazakh State Women’s Teacher Training University. There are given some of these interactive lectures within the framework of the elective course.

Theme: Carpoascomycetidae or Euascomycetidae
Type of lecture: Comparative lecture

Comparative lectures structures (G.Brown): Introduction – comparing A and B; Comparison of feature 1; Comparison of feature 2; Comparison of feature 3; Summary.

There is a description to the group type. There are discussed the structure of mycelium, process of genus, shape of fruits, the differences. Also there are discussed the contrast of Plectomycetiidae, Pyrenomicetiidae and Dyscomomicetiidae [3].

Plectomycetiidae: fruit body is cleistothecia, rare pyrenocarp, pockets are randomly situated in a fruit body. This group is divided into Eurotiales, Onygenales, Microascales. The differences in fruit body, pockets, perithecia, cleistothecia are discussed among students. The biological features of Aspergillus, Penicillium are also considered.
There are nearly about 15,000 types of fungus belong to Pyrenomycetiidae. All of them have fruit body like peach or jar, perithecia and cleistothecia are situated on the top and have a small hole. Also there is a peculiarity in the situation of fruit body. Also peculiarities of Erysiphales or Perisporiales, Sphaeriales, Hypocreales, Diaporthales, Clavicipitales and types of damaging plants are considered.

The main features of discomycetes are apotecia of fruit body, shape of apotecia, gill peculiarities.

Questions for summing up the lecture (feedback):
1. The main description of Pyrenomycetiidae, features of classification.
2. The illness caused by Erysiphales, course of a disease and symptoms. What kind of disease control do we use?
3. The enlargement of Erysiphales, the peculiarities of its structure, ways of hibernate. How do they cause plant disease?
5. Structure of discocarp. What is hymenium?
6. The description of discomycetes, features of classification.
7. What kind of mushrooms causes white rot of carrots? Are these elements noticeable in everyday life?
8. Describe the disease symptoms of black and green mold on onion.
9. The importance of ascomycete in human life.
10. How do you explain the mushroom difference in color?
Activity level of students is announced. Students actively participated in discussions are accented. Proper evaluation of Students’ knowledge and competences can lead to the development of the efficiency of study process.

Practical lesson: species of fungi Penicillium and Aspergillus.

Aim of work: Getting the specifics of construction Euascomycetidae

Materials needed: Microscope (Micros austria camera 519 CU 5 otcmos with video equipment MCX100, microscope eyepiece EW10x/20, lens plan 40x/0.65), coating glass, dropper, needles, clamps, species of fungi Penicillium (green mold onion) and Aspergillus (black mold onion)

The tasks (are done in small groups):
1. Research the structure peculiarities of Penicillium and Aspergillus;
2. Take photos of structures of Penicillium and Aspergillus;
3. Count up (conidia, phialides);
4. Describe the structure of fruit body pockets;
5. Get acquainted with laboratory lessons on researching fungi’s structures on www.youtube.com. Make a research using those skills;
6. Make a review of native and foreign scientists’ researches, discuss the latest inventions, write an essay about the results of your research.

At the end of the lesson students sum up the lesson by asking questions according to the theme.
Now there are new tasks in training specialists according to intersection of social-economic and scientific-technical processes. Also it is demanded the newest teaching methods. For this reason during the teaching above course it is aimed to use the beneficial innovative methods.

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