HIGHER EDUCATIONAL INSTITUTION OF UKOOPSPILKA
«POLTAV UNIVERSITY OF ECONOMICS AND TRADE» (PUET)
Department of Commodity Science,
Biotechnology,examinations and customs

A. Tsereniuk, L. Floka

PROGRAM

AND METHODICAL RECOMMENDATIONS

regarding the passing of Internship acquirers'
higher education 4 course specialty
162 Biotechnology and bioengineering educational program
"Biotechnology" degree bachelor's degree

Poltava
PUET
2023

Authors: ***A. Tsereniuk,*** Doctor of Agricultural Sciences, Professor of the department of commodity studies, of Biotechnology, Expertise and Customs of the Higher Educational Institution of the Ukoopspilka «University of Poltava economy and trade»;
L. Floka, PhD, Associate Professor of Department commodity studies, of Biotechnology, Expertise and Customs of the Higher Educational Institution of the Ukoopspilka «University of Poltava economy and trade».

Reviewers: ***H. Birta,*** Doctor of Agricultural Sciences, Manager of the Department Commodity, Biotechnology, Expertise and Customs of the Higher Educational Institution of the Ukoopspilka «University of Poltava economy and trade»;
A. Shostya, Doctor of Agricultural Sciences, dean of the Faculty of Technology production and processing products animal husbandry of Poltava state agrarian university

CONTENT

INTRODUCTION

Internship is designed to consolidate higher education specialty 162 Biotechnology and bioengineering theoretical knowledge and acquisition professional skills.

Biotechnology – interdisciplinary branch, what arose on the joint biological, chemical and of technical sciences.

Biotechnology is it branch of knowledge that studies and develops methods obtaining useful products for enterprises and medicine, technologies for cleaning household and industrial waste using biological objects: microorganisms, cells, animals, plants and use alive organisms and biological processes in production

With development biotechnology connect solution global problems of humanity - elimination of lack of food, energy, mineral resources, improvement of the state of health care of people and quality surrounding environment

Production practice directed on fixing theoretical of knowledge and acquisition practical skills on many enterprises of Ukraine, in particular pharmaceutical, food, perfumery and cosmetic, veterinary, processing industries and in rural economy

A biotechnologist is a specialist who has a broad perspective and possesses knowledge in sphere chemistry, genetics, microbiology, commodity studies, technology, biochemistry, which necessary for implementation many tasks

Getters higher of educational education programs «Biotechnology» can pass production practice in chemical, microbiological, biochemical laboratories, on enterprises from production different food products, bioenterprises; pharmaceutical companies; enterprises agricultural and industrial complex; scientific and research institutes and laboratories.

A bachelor of the educational program «Biotechnology» is not only a technologist of biotechnological production, but also a breeder, biologist, scientist howl employee, manager, microbiologist etc.

Professional skills: skills work with laboratory equipment; selection samples; cultivation microorganisms; carrying out microbiological measurements equipment and products; analysis data microbiological indicators.

GENERAL POSITION

Passage internship provides fixing, deepening and generalization of theoretical knowledge, as well as acquisition of practical skills and skills the future professional activity.

In as a result passage production practice students should

know:

- laws and normative acts of Ukraine that ensure economic and environmental protection of the country;
- organizational structure of departments (subdivisions) of biotechnological production of the enterprise or laboratory;
- job instructions for the main categories of workers who carry out production activities in biotechnological production;
- nomenclature of biotechnological preparations and products;
- main objects of biotechnology and the course of the biotechnological process;
- procedure for drawing up scientific documentation in the process of work at biotechnological production and in the laboratory;
- technological equipment of biotechnological industries;

be able to:

- to investigate the quality of goods using laboratory methods research;
- to ensure the efficiency of the technology of production processes at enterprises for the production of biotechnological food products, biotechnological veterinary and pharmaceutical preparations;
- to keep scientific documentation during work at biotechnological production and in the laboratory;
- carry out microbiological measurement of products and equipment;
- be able to use laboratory equipment in biotechnological laboratories, following safety rules while working on it.

GOAL AND TASK INTERNSHIP

In accordance with the directions of the future professional activity of bachelors, the program provides for industrial practice.

The object of production practice is the economic activity of enterprises, which is carried out in organizations and enterprises for the production of biotechnological food products and in laboratories.

The subject of production practice is the activity of a separate enterprise (organization) or production for the production of biotechnological food products, which corresponds to the educational program "Biotechnology". The purpose of industrial practice is to acquire the skills of full-fledged professional activity in areas that require knowledge: basic legislative, guiding, instrumental, regulatory documents that regulate the production activities of enterprises producing biotechnological food products; means of creating favorable conditions for improving the production of biotechnological products; processes of improving product quality control, assessing the impact on the formation of the production and assortment strategy of the enterprise for the production of biotechnological food products; principles of construction and main directions of activity of production enterprises, state institutions and services that provide protection of the consumer market from low-quality and dangerous biotechnological food products.

ORGANIZATION AND LEADERSHIP BY INTERNSHIP

Internship is carried out in accordance with the curriculum in the 8th semester in the relevant organizations.

The management of the practice is carried out by the head of the practice from the graduation department of the university (the department of commodity science, biotechnology, expertise and customs affairs) and the head of the practice base - the enterprise. Head of practice from the university (department):

- conducts briefings on the procedure for passing practice;
- provides proper scientific and methodical guidance;
- conducts counseling;
- supervises the practice procedure in accordance with the approved program.

Head of practice base:

- together with the supervisor of practice from the university, organizes and monitors students' practice in accordance with the program;
- provides counseling if necessary;
- monitors students' compliance with the rules of the company's internal regulations and reports their violation to the head of practice from the university;
- if possible, involves students in active participation in the current

work of the enterprise (organization, institution) where the practice takes place ; helps students in heels materials, necessary for writing report from production practice.

During practice, the student must:

- follow the practice program and perform the tasks provided for by it;
- to implement the working day schedule, rules of labor protection, safety techniques and industrial sanitation and hygiene in places of practice;
- systematically record, collect and process the necessary material;
- submit a duly prepared report to the manager based on the results of the internship;
- to defend the practice report within the time limit stipulated by the order of the university.

THEMATIC PLAN OF THE INTERNSHIP

No s/p	Content of production practice according tosections	Place passagepractice	Semester	Duration, week
1	**Topic 1.** Familiarization with organization and conditions of production activity of the enterprise with production biotechnological food products	Manufacturing enterprises and associations of various forms of ownership; laboratories; biotechnological enterprises for the production of food products; agricultural enterprises, pharmaceutical and veterinary enterprises, etc.	8	3
2	**Topic 2.** Identification of goods and determination of their falsification using laboratory methods. Ensuring the efficiency of technological processes			
3	**Topic 3.** Determination of conformity quality of goods, containers, requirements of standards and other ND			
4	**Topic 4.** Control of compliance with the rules of production of biotechnological food products, storage of goods			
5	**Topic 5.** Rules for processing biotechnological documentation			

GUIDELINES OF IMPLEMENTATION OF INTERNSHIP

Content practice

The implementation of the program is carried out in accordance with the tasks, which are divided into sections and topics of practice. During the internship, students must not only fulfill the general and individual tasks set by the program, but also take an active part in the current work of the enterprise.

Internship

Topic 1. Familiarization with the organization and conditions production activity of the manufacturing enterprise biotechnological food products

Task 1. Analysis organizational and legal forms enterprises, what is basis of practice.

Task 2. Familiarization with objects biotechnology on production and their classification. Study basic biotechnological processes on production and prospects search new ones directions their using.

Task 3. Familiarization with structure biological enterprises, features of the production of food products, medicinal products means etc. Familiarization with the main ones workshops biological enterprises.

Task 4. Acquaintance with the scientific biotechnological laboratory. Skills work with equipment, what is used in biotechnological laboratories

Task 5. Machinery security under time biotechnological of research

Topic 2. Identification of goods and definition of counterfeiting their by using laboratory methods. Software efficiency technological processes

Task 1. Analysis of the process of formation of the structure of the assortment of manufactured goods at biotechnological enterprises food products, pharmaceutical and veterinary enterprises.

Task 2. Study features production biotechnological food products, solid, soft and liquid medical forms, veterinary drugs etc. (in accordance to places passage practices).

Task 3. Identification of goods and determination of availability falsification by help microbiological research, histological sections of meat,

composition of the product, etc. (according to the place passage practices).

Topic 3. Determining conformity of the quality of goods, containers requirements standards and others ND

Task 1. Carrying out checks qualities, compliance labeling completeness of goods domestic production, what are produced the company from production biotechnological food products, pharmaceutical and veterinary enterprises, domestic or foreign production in an accredited laboratory (respectively to places passage practices).

Task 2. Determining the conformity of packaging and containers with the help of regulatory documents (on examples specific groups goods).

Task 3. Determination of the degree of environmental safety of goods and containers(on examples specific groups goods).

Task perform using ND and SANVIP.

Topic 4. Monitoring compliance with production rules biotechnological food products, storage goods

Task 1. Acquaintance with the features of laboratory control of compliance with service technology, compliance with rules protection labour, techniques security and protection the environment from pollution.

Task 2. Acquaintance with methods of cultivation of bio objects and types of nutrient environments. Describe how the quality of food products is controlled by the method of determining microbiological indicators, permissible levels toxic elements and mycotoxins.

Task 3. Analyzing the security of enterprises is necessary technological equipment for production biotechnological goods, medical and veterinary drugs.

Task 4. development activities of elimination reasons violations technological processes and increase quality biotechnological products at the enterprise.

Task 5. Familiarization with the organization of product storage regimes and its impact on the quality of biotechnological food products, medical drugs etc. (in accordance to places passage practices).

Topic 5. Rules for processing biotechnological documentation

Task 1. Study basic species scientific and production documentation.

Task 2. Participation in the preparation of the laboratory journal, reports of quality examination, etc.

FORMS AND CONTROL METHODS

To control the completion of practice, the student conducts diary (contains a summary of the daily work with a note about checking the records by the head of practice from the university and the company). In addition to daily entries, the diary may include comments from the supervisor regarding the intern's performance of individual sections of the program. The internship schedule is drawn up together with the student and approved by the internship manager from the university (enterprise) (Appendix A).

Based on the results of the internship, the student prepares a report to which a package of organizational, legal, operational and other documents is attached. A written report and diary is submitted to the practice manager from the business for review. The report and diary checked by the head of the enterprise are signed and certified with the seal of the enterprise.

Based on the results of the internship at the company, the manager of the internship from the company prepares a review in which the student's work is evaluated, the acquired skills and abilities are determined, suggestions are made regarding the type of work that the student can be used for after graduating from a higher educational institution. The review is signed by the head of practice from the company, the document is certified with the seal of the company.

REQUIREMENTS FOR FORMING THE REPORT OF THE INTERNSHIP

Report trace to issue in printed in the form of adhering to of generally accepted requirements (DSTU 3008-95) on standard sheets of through page numbering.

Work must to contain such sections:

- Title sheet (being processed according to requirements DSTU 3008-95).
- Content sections
- Report in accordance to sections
- Conclusions.

In reports student gives answers on such question:

- short characteristic enterprises – base practice (structure, functions and task enterprises);

- assortment products, what is produced on him the enterprise(name goods, price, way packing, weight, prescription storage etc.);
- characteristic main and auxiliary raw materials (requirements to qualities, sources of income etc.);
- definition identification and availability falsification goods;
- scheme production and her description (equipment, modes, control quality at the stages of production) on the example of one product name, that produces this enterprise (by choice student);
- are possible defects and their methods elimination;
- organization storage ready products and realization consumers

To control the completion of practice, the student conducts diary, which receives before leaving for practice

Written report and the diary follows submit to the head of practice from enterprises for inspection. Checked by the head of the company report and diary sign and assure seal enterprises.

By the results passage production practice on the enterprise, checking the report and diary of the practice manager from the enterprise makes up response, which signs and assures seal enterprises. These documents are then submitted to the practice manager for review from university (on Department commodity studies, of Biotechnology, Expertise and Customs). After checks (for three working days) takes place protection report

PROCEDURE FOR SUPPLYING TOTALS INTERNSHIP

The report and diary are submitted, duly completed and certified the head of practice from the university. In case of receiving comments, student finalizes report and serves on repeated reviewing Report, which got positive review is allowed to protection

Materials related to practice, which are submitted for defense should contain: a report, a diary and a review of the head of the practice from university Protection report is carried out before commission, approved manager department. To composition Commission are included head practice and teachers department. The results protection are entered to record book and examination information.

Assessment student is conducted according to with by letter assessment, which given in Add.

Students who did not complete the practice program or received a negative grade during the defense are expelled from the university or re-but are sent to practice. Students can be directed to production practice again,

not earlier than after 10 months of work for by profession by presence of a positive characteristics of places work

The results of the practice are discussed at the meeting of the graduation department together with the employees of the university responsible for the practice, clarified question organizations and efficiency carrying out practices, compliance of the practice bases with the requirements of educational and qualification characteristics etc.

LIST RECOMMENDED INFORMATIONAL SOURCE

1. Biotechnology: textbook / V. Gerasimenko, M. Gerasimenko, M. Tsvilikhovsky and others.; under general ed. V. Gerasimenko. - Kyiv: Firm "INKOS", 2006. — 647 p.
2. Eggeling,L.,Pfefferle,W.and Sahm,H.(2001).Aminoacids. In Basic Biotechnology,e ds, C. Ratledge and B. Kristiansen. Cambridge: Cambridge University Press,pp. 281–304.
3. Johnson-Green, P. (2002).Introduction to Food Biotechnology. Boca Raton, USA: CRCPres
4. Kirk, O., Borchest, T.V. and Fuglsang, C.C. (2002). Industrial enzyme applica-tions. Current Opinions in Biotechnology 13, 345–51.McCarthy, K. C. and Rastall, R. A. (2003). Sticking your ‘osein it: prebiotics. Biologist 50, 259–62.
5. Pirog T. General biotechnology: textbook / Pirog T/, O. Ignatova – Kyiv: NUHT, 2009. – 336 p.
6. Van Beilan, J.B. and Li, Z. (2002). Enzyme technology: an overview. Current Opin- ions in Biotechnology 13, 338–44.
7. Yulevych O. Biotechnology: education manual / O. Yulevych, S. Kovtun, M. Gil; under the editorship M. Gil. – Mykolaiv: MDAU, 2012. – 476 p.

APPENDICES
Appendix A
Sample design graphics passage production practice

I approve
Head of practice
from enterprises

_____
(signature)

" ____ " _____r.

Schedule
passage production practice

_____
(name, name, on father)

in

_____
(full name institutions)

with " _" _____r. on " ____ " _____r.

No s/p	Topics programs production practice	The main ones task	Number hours
1			
2			
3			
	That's all		

Trainee_____ _____
(signature) *(surname)*

Head from
university_____ _____
(signature) *(surname)*

Addition B

Sample design titular report pages with practice

HIGHER EDUCATIONAL INSTITUTION UKOOPSPILKA
"POLTAVSKY UNIVERSITY ECONOMY AND TRADE" (PUET)
Chair commodity studies, biotechnology, examinations and customs affairs

REPORT
from production practice

on _____
(name enterprises)

student of the _____group course_____

_____
(name, name, on father)

IN period with " _____ " _____20
_____yearson " _____ " _____20 ___
_____years

Head practice from enterprises _____
(position, name, name, on father)

Head practice from department _____
(scientific degree, scientific rank, position,
name, name, on father)

Report from practice protected on _____

_____
(signature student)

Signatures members
Commission

_____

_____
" ___ " _____20
____years

POLTAVA 20 __years

Addition C

A sample of the evaluation letter production practice performed

a student _____of the group_

Educational and Scientific Institute of International Education

Date admission to protection _____

Date protection _____

No s/p	Criteria assessment	Points
	Content report (to 50 points)	
1	Justification relevance goals and task practice (to 3 points)	
2	Completeness disclosure topics from practice (to 10 points)	
3	Using mathematical and statistical methods, modeling methods, computer technologies (to 5 points)	
4	Using the newest informative sources, valid regulatory and legislative documents (to 2 points)	
5	Creative approach to analysis, originality coverage of practice (to 10 points)	
6	Availability in reports visual materials (tables, graphs, schemes), and their analysis (to 5 points)	
7	Reasonableness conclusions and practical significance recommendations (offers) (to 10 points)	
8	Completeness and correctness filling a diary (to 5 points)	
	Design and organization implementation (to 20 points)	
9	Conformity valid standards of design report in general (title pages, content, structure etc) (to 5 points)	
10	Conformity valid standards of design tables, formulas, graphic illustrations (to 5 points)	
11	Conformity valid requirements of design literary and others informative sources (to 5 points)	
12	Compliance graphics implementation report (of the project) (to 5 points)	
	Protection (to 30 points)	
13	Completeness and brevity illumination in reports key aspects report (to 10 points)	
14	Presentation report (project) (to 10 points)	
15	Argumentativeness and completeness answers on additional questions (to 10 points)	
	That's all points	
	Final number points and rating by national scale	
	Final number points according to the scale EXT	
	Signature members Commission	