# 2 AGRICULTURE AND FISHERIES

# **HOG PRODUCTION**

PROGRAM OF STUDY 5671





# **HOG PRODUCTION**

PROGRAM OF STUDY 5671

© Gouvernement du Québec Ministère de l'Éducation, 2000 – 99-1035

ISBN 2-550-35522-9

Legal Deposit—Bibliothèque nationale du Québec, 2000

# AGRICULTURE AND FISHERIES

# HOG PRODUCTION

### PROGRAM OF STUDY 5671

The *Hog Production* program leads to the Diploma of Vocational Studies (DVS) and prepares the student to practise the trade of

SKILLED HOG PRODUCTION WORKER

Direction générale de la formation professionnelle et technique

### **Development Team**

Project Coordinator	André Hébert Direction générale de la formation professionnelle et technique Ministère de l'Éducation
Production Team Coordinator	Suzanne Provost and Georges Lemay Commission scolaire Saint-Hyacinthe - Val-Monts
Design and Development	Jean-Marie Jeanson Direction générale de la formation professionnelle et technique Ministère de l'Éducation
	André Gaumond and Gina Lamontagne Teachers Commission scolaire Saint-Hyacinthe - Val-Monts
	Louis Gagnon Technical consultant, program development
Technical Revision	Direction des programmes, Direction générale de la formation professionnelle et technique
Translation	Services à la communauté anglophone Direction de la production en langue anglaise

### ACKNOWLEDGMENTS

The Ministère de l'Éducation wishes to thank the following people for their invaluable assistance in the development of this program:

## Representatives from Business and Industry

Daniel Beauregard Saint-Simon

Isabelle Bélanger Saint-Édouard-de-Lotbinière

Pierre Blais Stanstead

Claude Fritsch Upton

Victor Girouard Saint-Valérien

Bertrand Ménard F. Ménard Inc. L'Ange-Gardien

Guy St-Laurent Nutribec Saint-Hyacinthe

Partice Villeneuve Saint-Thomas-de-Joliette

#### Representatives from Education

Yolande Audet Centre de formation agricole de Saint-Anselme

Gilles Laverdière Centre de formation agricole de Saint-Anselme

André Samson Direction de la formation de la main-d'oeuvre en agro-alimentaire Ministère de l'agriculture, des pêcheries et de l'alimentation

### TABLE OF CONTENTS

	1
GLOSSARY	3

### PART I

1.	SYNOPTIC TABLE	7
2.	PROGRAM TRAINING GOALS	9
3.	COMPETENCIES	11
	Grid of Learning Focuses	12
4.	GENERAL OBJECTIVES	13
5.	FIRST- AND SECOND-LEVEL OPERATIONAL OBJECTIVES	15
	5.1 Definition      5.2 How to Read First-Level Operational Objectives	

### PART II

MODULE 1:	THE TRADE AND THE TRAINING PROCESS	21
MODULE 2:	APPLYING HEALTH AND SAFETY RULES IN FARMING AND	
	ENVIRONMENTAL PRACTICES	. 25
MODULE 3:	INTRODUCTION TO THE PRACTICE OF THE TRADE	29
MODULE 4:	COMMUNICATING IN THE WORKPLACE	35
MODULE 5:	ORGANIZING THE TECHNICAL DATA IN A HOG PRODUCTION	
	BUSINESS	39
MODULE 6:	ASSOCIATING THE ANATOMY AND PHYSIOLOGY OF THE	
	PIG WITH BREEDING REQUIREMENTS	43
MODULE 7:	HERD CONTROL ACTIVITIES	. 47
MODULE 8:	HEALTH CARE AND TREATMENTS	51

MODULE 9:	IMPROVING THE GENETIC QUALITY OF THE HERD	57
MODULE 10:	IMPLEMENTING A BREEDING PROGRAM	31
MODULE 11:	ASSOCIATING THE NUTRITIVE VALUE OF FOODS WITH THE	
	NUTRITIONAL REQUIREMENTS OF PIGS	35
MODULE 12:	IMPLEMENTING A FEEDING PROGRAM FOR PIGS	39
MODULE 13:	CHOOSING, MAINTAINING AND OPERATING A TRACTOR	73
MODULE 14:	SAFE, RATIONAL USE OF PESTICIDES	77
MODULE 15:	SOIL PREPARATION	33
MODULE 16:	ASSOCIATING PLANT ANATOMY AND PHYSIOLOGY WITH THE PLANTS	
	GROWN	37
MODULE 17:	PREVENTIVE TOOL AND MACHINE MAINTENANCE	<b>9</b> 1
MODULE 18:	IMPLEMENTING A FERTILIZATION AND CONDITIONING PROGRAM	95
MODULE 19:	PLANTING CROPS	99
MODULE 20:	MAINTAINING CROPS 10	)3
MODULE 21:	OXYACETYLENE CUTTING AND ARC WELDING 10	)5
MODULE 22:	HARVESTING	)9
MODULE 23:	BUILDING AND EQUIPMENT MAINTENANCE	13
MODULE 24:	PRACTISING SUSTAINABLE AGRICULTURE	19
MODULE 25:	JOB SEARCH TECHNIQUES 12	23
MODULE 26:	ENTERING THE WORK FORCE	27

### INTRODUCTION

The *Hog Production* program was designed on the basis of a new framework for developing vocational education programs that calls for the participation of experts from the workplace and the field of education.

The program of study is developed in terms of competencies, expressed as objectives. These objectives are divided into modules, which are organized into teaching blocks. Various factors were kept in mind in developing the program: training needs, the job situation, purposes, goals, and strategies and means used to attain objectives.

The program of study lists the competencies that are the minimum requirements for a Diploma of Vocational Studies (DVS) for students in both the youth and adult sectors. It also provides the basis for organizing courses, planning teaching strategies, and designing instructional and evaluation materials. The duration of the program is 1170 hours, which includes 705 hours spent on the specific competencies required to practise the trade and 465 hours on general competencies. The program of study is divided into 26 modules, which vary in length from 15 to 120 hours (multiples of 15). The time allocated to the program is to be used not only for teaching but also for evaluation and remedial work.

This document contains two parts. Part I is of general interest and provides an overview of the training plan. It includes a synoptic table of basic information about the modules, a description of the program training goals, the competencies to be developed and the general objectives, and an explanation of operational objectives. Part II is designed primarily for those directly involved in implementing the program. It contains a description of the operational objectives of each module.

In keeping with this broad approach, three accompanying documents will be provided: a teaching guide, an evaluation guide, and a planning guide.

### GLOSSARY

### **Program Training Goals**

Statements that describe the educational aims of a program. These goals are the general goals of vocational education adapted to a specific trade or occupation.

### Competency

A set of socio-affective behaviours, cognitive skills or psycho-sensori-motor skills that enable a person to correctly perform a role, function, activity or task.

#### **General Objectives**

Instructional objectives that provide an orientation for leading the students to attain one or more related objectives.

#### **Operational Objectives**

Statements of the educational aims of a program in practical terms. They serve as the basis for teaching, learning and evaluation.

#### Module of a Program

A component part of a program of study comprising a first-level operational objective and the related second-level operational objectives.

#### Credit

A unit used for expressing quantitatively the value of the modules in a program of study. One credit corresponds to 15 hours of training. Students must accumulate a set number of credits to graduate from a program.

# PART I

### 1. SYNOPTIC TABLE

Hog Production CODE: 5671		Number of n Duration in I Credits:	
CODE	TITLE OF THE MODULE	HOURS	CREDITS*
721 211	1. The Trade and the Training Process	15	1
721 222	2. Applying Health and Safety Rules in Farming and Environmental Practices	30	2
721 233	3. Introduction to the Practice of the Trade	45	3
721 241	4. Communicating in the Workplace	15	1
721 255	5. Organizing the Technical Data in a Hog Production Business	75	5
721 264	<ol> <li>Associating the Anatomy and Physiology of the Pig with Breeding Requirements</li> </ol>	60	4
721 283	7. Herd Control Activities	45	3
721 288	8. Health Care and Treatments	120	8
721 293	9. Improving the Genetic Quality of the Herd	45	8 3
721 307	10. Implementing a Breeding Program	105	7
721 314	11. Associating the Nutritive Value of Foods with the Nutritional Requirements of Pigs	60	4
721 323	12. Implementing a Feeding Program for Pigs	45	3
721 332	13. Choosing, Maintaining and Operating a Tractor	30	
721 142	14. Safe, Rational Use of Pesticides	30	2 2 4
721 344	15. Soil Preparation	60	4
721 353	16. Associating Plant Anatomy and Physiology with the Plants Grown	45	3
721 362	17. Preventive Maintenance of Tools and Machinery	30	2
721 372	<ol> <li>Implementing a Fertilization and Conditioning Pro- gram</li> </ol>	30	2 2
721 382	19. Planting Crops	30	2
721 391	20. Maintaining Crops	15	1
721 213	21. Oxyacetylene Cutting and Arc Welding	45	3
721 403	22. Harvesting	45	3
721 414	23. Building and Equipment Maintenance	60	4
721 421	24. Practising Sustainable Agriculture	15	1
721 431	25. Job Search Techniques	15	1
721 444	26. Entering the Work Force	60	4

\* 15 hours = 1 credit This program leads to a DVS in Hog Production

### 2. PROGRAM TRAINING GOALS

The training goals of the *Hog Production* program are based on the general goals of vocational education and take into account the specific nature of the trade. These goals are:

# To develop effectiveness in the practice of the trade of skilled pork production worker.

- To prepare students to perform pork production tasks and activities correctly and at a level of performance acceptable for entering the job market.
- To prepare students to perform satisfactorily on the job by fostering:
  - the development of the skills required to organize and plan their work;
  - the development of the basic skills required to carry out trade-related tasks such as arc and gas welding;
  - the application of basic concepts related to animal and plant physiology and anatomy, nutrition, genetics, fertilizers and conditioners;
  - the acquisition of the knowledge required to use computer systems;
  - the development of the ability to communicate in the workplace;
  - the acquisition of the basic knowledge required to identify crop pests and use pesticides;
  - a constant concern for the environment, health and safety;
  - observation and precision in carrying out tasks.

To ensure that students are prepared to enter the work force.

- To help students integrate into the job market by fostering:
  - knowledge of their rights and responsibilities as workers;
  - knowledge of the job market in general and pork production in particular.

To foster personal development and the acquisition of occupational knowledge.

- To foster independence and a sense of responsibility.
- To help students develop a concern for excellence.
- To help students acquire good work habits.

#### To ensure job mobility.

- To help students develop a positive attitude toward technological change.
- To foster the ability to learn and to obtain information.

### 3. COMPETENCIES

The competencies to be developed in the *Hog Production* program are shown in the grid of learning focuses on the following page. The grid lists general and specific competencies as well as the major steps in the work process.

General competencies involve activities common to several tasks or situations. They cover, for example, the technological or scientific principles that the students must understand to practise the trade or occupation. Specific competencies focus on tasks and activities that are of direct use in the trade or occupation. The work process includes the most important steps in carrying out the tasks and activities of the trade or occupation.

The grid of learning focuses shows the relationship between the general competencies on the horizontal axis and the specific competencies on the vertical axis. The symbol ( $\triangle$ ) indicates a correlation between a specific competency and a step in the work process. The symbol ( $\circ$ ) indicates a correlation between a general and a specific competency.

The symbols  $(\bullet)$  and  $(\bullet)$  indicate that these relationships have been taken into account in the formulation of objectives intended to develop specific competencies related to the trade or occupation.

The logic used in constructing the grid influences the course sequence. Generally speaking, this sequence follows a logical progression in terms of the complexity of the learning involved and the development of the students' autonomy. The vertical axis of the grid shows the competencies directly related to the practice of a specific trade or occupation. These competencies are arranged in a relatively fixed order; therefore, the modules should be taught, insofar as possible, in the order represented on the grid. The modules including the general competencies on the horizontal axis should be taught in relation to those on the vertical axis. This means that some modules are prerequisite to others, while other modules are taught concurrently.

				WORK PROCESS (major steps)								GENERAL COMPETENCIES (related to technology, subjects, personal development, etc.)												TOTALS		
(dire	GRID OF LEARNING FOCUSES IN HOG PRODUCTION SPECIFIC COMPETENCIES totly related to the practice of the specific occupation)	IRST LEVEL OPERATIONAL OBJECTIVES	JURATION (IN HOURS)	Jo verification	Determine the work to be done	alan the work	repare material	Jo the work	erify the quality of the work done	Jo follow-up	Establish relationships between farming practices, the environment, and health and	Communicate in the workplace	Drganize the technical data in a hog production business	Associate the anatomy and physiology of the pig vith breeding requirements		Associate the nutritive value of foods with the utritional requirements of pigs	lse pesticides safely and rationally	Associate plant anatomy and physiology with the plants grown	mplement a fertilization and conditioning program	Apply concepts of oxyacetylene cutting and arc velding	Practise sustainable agriculture	lse job search techniques	NUMBER OF OBJECTIVES	DURATION (IN HOURS)		
ន	MODULES										2	4	5	6	9	11	14	16	18	21	24	25	~			
MODULES	FIRST LEVEL OPERATIONAL OBJECTIVES										В	S	В	В	В	В	В	В	В	В	s	В	12			
М	DURATION										30	15	75	60	45	60	30	45	30	45	15	15		465		
1	Determine their suitability for the trade and the training process	S	15		$\bigtriangleup$																					
3	Learn about the practice of the trade	S	45				$\bigtriangleup$	$\bigtriangleup$	$\bigtriangleup$		•	•										•				
7	Use herd control procedures	В	45								•	٠	•	0	0	0					0					
8	Give health care and treatment to pigs	В	120								٠	•	•	•	0	0					0					
10	Implement a breeding program	В	105	$\bigtriangleup$							•	0	•		۲	0					0					
12	Implement a feeding program for pigs	В	45								•	0	•	•	0	•			0		0					
13	Do periodic maintenance on tractors	В	30		$\bigtriangleup$	$\bigtriangleup$					•	0	0							0	0					
15	Prepare the soil	В	60						$\triangle$	$\triangle$	•	0	0				ullet	0			٠					
17	Maintain tools and machinery and do minor repairs	В	30						$\bigtriangleup$	$\bigtriangleup$	•	0	0				0	0	0	•	0					
19	Plant a crop	В	30								٠	0	•				٠	0	•		•					
20	Maintain a crop	В	15								٠	0	•				٠	0	0		•					
22	Harvest crops	В	45								٠	0	•			0										
23	Do building and equipment maintenance	В	60						$\bigtriangleup$	$\bigtriangleup$	•	0	0							•						
26	Enter the work force	S	60								•	٠		•	•	•	•			٠	•	•				
NUM	BER OF OBJECTIVES	14																					26			
DUR	ATION (IN HOURS)		705																					1170		

S : Situational objectives B : Behavioural objectives

△ Correlation between a step and a specific competency
 △ Correlation to be taught and evaluated
 ○ Correlation between a general and a specific competency Correlation to be taught and evaluated

### **4. GENERAL OBJECTIVES**

The general objectives of the *Hog Production* program are presented below, along with the major statement of each corresponding first-level operational objective.

# To develop in the students the competencies required to integrate harmoniously into the school and work environments.

- Determine their suitability for the trade and the training process.
- Establish relationships between farming practices, the environment, and health and safety.
- Communicate in the workplace.
- Learn about the practice of the trade.
- Practise sustainable agriculture.
- Use job search techniques.
- Enter the work force.

#### To develop in the students the competencies required to carry out the tasks related to swine production.

- Associate the anatomy and physiology of the pig with breeding requirements.
- Give health care and treatments to pigs.
- Improve the genetic quality of a herd of pigs.
- Apply concepts of animal feeding.
- Associate the nutritive value of foods with the nutritional requirements of pigs.
- Implement a feeding program for pigs.
- Use herd control procedures.
- Organize the technical data in a swine production business.
- Implement a breeding program.

To develop in the students the competencies required to carry out the tasks related to the production of crops.

- Associate plant anatomy and physiology with the plants grown.
- Use pesticides safely and rationally.
- Prepare the soil.
- Implement a fertilization and conditioning program.
- Plant a crop.
- Maintain a crop.
- Harvest crops.

To develop in the students the competencies required to carry out the tasks related to the maintenance of machinery and buildings.

- Do periodic maintainenance on tractors.
- Apply concepts of oxyacetylene cutting and arc welding
- Maintain tools and machinery and do minor repairs.
- Do building and equipment maintenance.

### 5. FIRST- AND SECOND-LEVEL OPERATIONAL OBJECTIVES

### **5.1 DEFINITION**

A first-level objective is defined for each competency to be developed. Competencies are organized into an integrated training program designed to prepare students to practise the trade or occupation. This systematic organization of competencies produces better overall results than training by isolated objectives. More specifically, it fosters a smooth progression from one objective to the next, saves teaching time by eliminating needless repetition, and integrates and reinforces learning material.

**First-level operational objectives** are the main, compulsory teaching/learning targets and they are specifically evaluated for certification. There are two kinds of operational objectives: behavioural and situational.

- A behavioural objective is a relatively closed objective that describes the actions and results expected of the student by the end of a learning step. Evaluation is based on expected results.
- A situational objective is a relatively openended objective that outlines the major phases of a learning situation. It allows for output and results to vary from one student to another. Evaluation is based on the student's participation in the activities of the learning context.

**Second-level operational objectives** are intermediate teaching/learning targets deemed prerequisite for attaining first-level objectives. They are grouped according to the specifications (see 5.2 A) or the phases (see 5.2 B) of the first-level objective.

The division of operational objectives into firstand second-level objectives is based on a clear distinction between the levels of learning:

- learning involving prerequisite knowledge
- learning involving competencies

Second-level operational objectives indicate prerequisite knowledge. They prepare the students to learn what is necessary to attain the first-level operational objectives, which collectively lead to the development of a competency. The objectives should always be adapted to meet the particular needs of the individual students or groups of students.

First-level operational objectives cover the learning that the students need to develop a competency:

• The specifications or the phases of the objective determine or guide specific learning, thereby allowing the competency to be developed step by step.

• The objective as a whole (i.e. the six components and in particular the last phase of a situational objective) determines or guides the overall learning and the integration and synthesis of this learning, allowing the competency to be developed fully.

To attain the objectives, the following learning activities may be prepared:

- specific learning activities for second-level objectives
- specific learning activities for the specifications or phases of first-level objectives
- general learning activities for first-level objectives

### 5.2 HOW TO READ FIRST-LEVEL OPERATIONAL OBJECTIVES

### A. How to Read a Behavioural Objective

Behavioural objectives consist of six components. The first three provide an overview of the objective:

- 1. The **expected behaviour** states a competency in terms of the general behaviour that the students are expected to have acquired by the end of the module.
- 2. The conditions for performance evaluation define what is necessary or permissible to the students during evaluation designed to verify whether or not the students have attained the objective. This means that the conditions for evaluation are the same wherever and whenever the program is taught.
- 3. The **general performance criteria** define the requirements by which to judge whether or not the results obtained are generally satisfactory.

The last three components ensure that the objective is understood clearly and unequivo-cally:

- 4. The **specifications of the expected behaviour** describe the essential elements of the competency in terms of specific behaviours.
- 5. The **specific performance criteria** define the requirements for each of the specifications of behaviour. They ensure a more enlightened decision on the attainment of the objective.
- 6. The **field of application** defines the limits of the objective, where necessary. It indicates cases where the objective applies to more than one task, occupation or field.

Situational objectives consist of six components:

- 1. The **expected outcome** states a competency as an aim to be pursued throughout the course.
- 2. The **specifications** outline the essential aspects of the competency and ensure a better understanding of the expected outcome.
- 3. The **learning context** provides an outline of the learning situation designed to help the students develop the required competencies. It is normally divided into three phases of learning:
  - information
  - performance, practice or involvement
  - synthesis, integration and self-evaluation.

- 4. The **instructional guidelines** provide suggested ways and means of teaching the course to ensure that learning takes place and that the same conditions apply wherever and whenever the course is taught. These guidelines may include general principles or specific procedures.
- 5. The **participation criteria** describe the requirements the students must fulfil, which are usually related to each phase of the learning context. They focus on how the students take part in the activities rather than on the results obtained. Participation criteria are normally provided for each phase of the learning context.
- 6. **The field of application** defines the limits of the objective, where necessary. It indicates cases where the objective applies to more than one task, occupation or field.

# PART II

### MODULE 1: THE TRADE AND THE TRAINING PROCESS

### CODE: 721 211

### Duration: 15 hours

# FIRST-LEVEL OPERATIONAL OBJECTIVE SITUATIONAL OBJECTIVE

### EXPECTED OUTCOME

By participating in the required activities of the learning context according to the indicated criteria, the students will be able to **determine their suitability for the trade and the training process.** 

### **SPECIFICATIONS**

At the end of this module, the students will:

- Be familiar with the nature of the trade.
- Understand the training process.
- Confirm their career choice.

### LEARNING CONTEXT

### PHASE 1: Information on the Trade

- Learning about the nature of the trade and the employment requirements: tasks, physical and intellectual skills, working conditions, etc.
- Situating the chosen production sector with respect to the other production sectors.
- Discovering different sources of information:
  - observations made in the field, written references, internal and external resource persons.
- Visiting enterprises in the chosen production sector and collecting information on how they are organized and how they operate.

### FIRST-LEVEL OPERATIONAL OBJECTIVE SITUATIONAL OBJECTIVE

### LEARNING CONTEXT

 Presenting to the members of the group data collected on different subjects, a report on their agricultural experience, etc., and discussing their perception and the agricultural context: advantages, disadvantages.

### PHASE 2: Information on the Training Process

- Learning about the training process: program, instructional approach, evaluation methods, certification.
- Learning about the physical organization of and the resources available in the educational institution and in the community.

### PHASE 3: Evaluation and Confirmation of Career Choice

- Determining their preferences, aptitudes, and interests in relation to the chosen trade.
- Discussing the accuracy of their perception of the trade.
- Specifying their preferences, interests and aptitudes for the trade.
- Listing their prior learning and the difficulties they anticipate in relation to the training process.
- Preparing a report in which they assess their career choice by comparing the nature and requirements of the trade with their preferences, aptitudes and interests.

### INSTRUCTIONAL GUIDELINES

The teacher should:

- Provide the students with the means to assess their career choice honestly and objectively.
- Create a climate that favours the students' personal growth and integration into the job market.
- Encourage the students to engage in discussions and express their opinions.
- Motivate the students to take part in the suggested activities.
- Help the students to arrive at an accurate and objective perception of the trade.

# FIRST-LEVEL OPERATIONAL OBJECTIVE SITUATIONAL OBJECTIVE

- Ensure that the students are well-suited to the trade.
- Organize visits to businesses that are representative of the workplace in swine production.
- Make available all pertinent reference materials, e.g. information on the trade, training programs, guides.
- Provide a list of businesses where former students are working as employees or as owners.
- Make available appropriate support during research, visits and discussions.
- Provide students with a model for the report to be prepared in the course of the module.

### **PARTICIPATION CRITERIA**

### PHASE 1:

- Become familiar with most of the topics to be covered.
- Adequately express their views on the trade during individual or group meetings.

### PHASE 2:

- Study the documents provided.
- Give their opinion of the program of study as it relates to the trade.
- Gather information on most of the topics to be covered.

### PHASE 3:

 Write a report that explains how they arrived at their career choice, taking into account the characteristics and requirements of the trade and their preferences, aptitudes and interests.

### SECOND-LEVEL OPERATIONAL OBJECTIVES

# IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

### Before undertaking any of the activities:

- 1. Realize the importance of choosing a suitable career.
- 2. Understand the competency being developed and the suggested training process.
- 3. Be receptive to information about the trade and the training process.
- 4. Practise using various techniques that facilitate intellectual work:
  - note taking, the résumé, research, observation sheets, evaluation checklists, text analysis, examination of model reports and preparation for an examination.

#### Before undertaking the activities of Phase 1:

- 5. Prepare a visit to a farm.
- 6. Determine how to record and present information.
- 7. Explain the term entry-level qualifications.
- 8. Explain the main rules governing group discussion.

#### Before undertaking the activities of Phase 2:

- 9. Differentiate between the skills, aptitudes and knowledge required to practise the trade.
- 10. Describe the nature, purpose and content of a program of study.

#### Before undertaking the activities of Phase 3:

- 11. Differentiate among preferences, aptitudes and interests.
- 12. Describe the main parts of a report confirming their career choice.

### MODULE 2: APPLYING HEALTH AND SAFETY RULES IN FARMING AND ENVIRONMENTAL PRACTICES

### CODE: 721 222

**Duration: 30 hours** 

### FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

### EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must establish relationships between farming practices, the environment, and health and safety

in accordance with the following conditions, criteria and specifications.

### CONDITIONS FOR PERFORMANCE EVALUATION

- Using cases specific to the trade
- Using simulations
- Using a first-aid kit
- Referring to laws and regulations on occupational health and safety

### GENERAL PERFORMANCE CRITERIA

- Appropriate solutions and actions during case studies
- Observance of laws

### FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

# SPECIFICATIONS OF THE EXPECTED BEHAVIOUR

A. Identify and explain preventive measures aimed at protecting the environment.

### SPECIFIC PERFORMANCE CRITERIA

- Accurate recognition of environmental stressors and of areas that are at risk of pollution on a pig farm
- Observance of the laws and regulations on environmental protection
- Observance of work methods that are safe for the environment
- B. Identify and explain preventive measures aimed at reducing the risks of accidents and illnesses inherent in the practice of the trade.
- List of the risks related to carrying out certain tasks, to the working environment, to the use of hazardous substances, and to certain types of equipment and tools
- Determination of protective equipment required for the safety of the user
- Suitability of work areas

### FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

# SPECIFICATIONS OF THE EXPECTED BEHAVIOUR

C. Develop a prevention program specifically for a pig farm.

### SPECIFIC PERFORMANCE CRITERIA

- Complete review of the safety rules specific to the tasks to be carried out on a pig farm
- Appropriate choice of the components of a prevention program
- Observance of instructions on the use of products and equipment
- D. Apply the main emergency response measures.
- Correct application of response techniques in cases of crushing, poisoning, fire, bleeding, spills of hazardous substances or the emission of toxic gases

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

### Before learning how to define the concept of the environment:

1. Realize the importance of the environment for living creatures, including human beings.

Before learning how to identify and explain preventive measures aimed at protecting the environment (A):

- 2. Recognize the importance of protecting the environment and workers.
- 3. Define the legal framework of environmental protection and occupational health and safety.
- 4. Explain the rights and obligations of farmers and of farm workers.

Before learning how to identify and explain preventive measures aimed at reducing the risks of accidents and illnesses inherent in the practice of the trade (B):

5. Recognize that we are all at risk for accidents and illnesses.

### Before learning how to apply the main emergency response measures (D):

- 6. Describe the main items in a first-aid kit.
- 7. Define first aid and its purposes.
- 8. List all the emergency situations that are likely to occur on a swine farm.

## **MODULE 3: INTRODUCTION TO THE PRACTICE OF THE TRADE**

### CODE: 721 233

#### **Duration: 45 hours**

### FIRST-LEVEL OPERATIONAL OBJECTIVE SITUATIONAL OBJECTIVE

### EXPECTED OUTCOME

By participating in the required activities of the learning context according to the indicated criteria, the students will be able to **learn about the practice of the trade**.

### **SPECIFICATIONS**

During this module, the students will:

- Find a practicum position.
- Become familiar with the working environment.
- Evaluate the training received in comparison with their perception of conditions during the practicum.

### LEARNING CONTEXT

### PHASE 1: The Search for a Practicum Position

- Becoming aware of the practicum procedures.
- Determining, in order of priority, the selection criteria that are necessary for choosing an ideal farm for a practicum position.
- Drawing up a list of farms and describing their characteristics.
- Comparing the selection criteria with the characteristics of the farms.

### LEARNING CONTEXT

- Approaching the farm owners and seeing if there is a possibility for an agreement on a practicum.
- Choosing a practicum position and concluding an agreement with the persons in charge.

### PHASE 2: Participation in the Workplace

- Becoming familiar with the farm: the family situation, the interpersonal relationships, the history of the business, the operating structure of the farm, the equipment, the machinery, health and safety practices.
- Observing the occupational tasks or activities that are characteristic of an agricultural enterprise, and participating in them.
- Keeping a log to record observations of the work setting and the activities carried out.
- Participating in the evaluation of the practicum with the teacher and the supervisor on the farm.

## PHASE 3: Comparison of Their Initial Impressions with the Realities of the Workplace

- Discussing their perception of the trade before and after the practicum.
- Noting the aspects of the trade that differ from the training received.
- Discussing the implications of the experience in relation to the training to be acquired.

### INSTRUCTIONAL GUIDELINES

The teacher should:

- Provide the students with the means to make an appropriate choice of practicum position.
- Provide the students with a student practicum guide.

- Ensure that the person responsible for the student trainee on the farm understands clearly the objectives of the practicum.
- Make it possible for students to observe, participate in and carry out occupational activities.
- Ensure that there is constant supervision of the students by a responsible person on the farm.
- Provide guidance for the students.
- Take action in cases of difficulties or problems.
- Ensure that the student writes a practicum report.
- Maintain close cooperation between the school and the farm that is receiving the student.

### **PARTICIPATION CRITERIA**

PHASE 1:

- Draw up a list of selection criteria.
- Describe the characteristics of at least three farms.
- Compare, using a table, the selection criteria and the characteristics of the different farms.
- Approach the persons at the chosen farm.
- Propose and negotiate an agreement with the person responsible for the practicum at the farm.

### PHASE 2:

- Respect the family environment and way of life.
- Respect the restrictions and requirements with regard to certain activities such as the use of equipment and machinery by student trainees.
- Respect the working hours and policies of the farm.
- Participate actively in the farm activities.
- Show an ongoing interest throughout the practicum.
- Keep a log of their participation in the occupational activities, observations on the work setting, thoughts, areas of interest and aptitude for the tasks of an agricultural business.
- Evaluate themselves as future workers, in accordance with the training received.
- Participate in the evaluation of the practicum with the teacher and the person in charge of the student on the farm.

PHASE 3:

- Note the aspects of the trade that differ from the training received or from the perception that they had of the trade.
- Discuss the experience and evaluate their perception of the trade before and after the practicum.
- Explain to the teacher their perception of themselves as workers, using the evaluation report supplied by the person responsible for the practicum.

## IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

### Before undertaking any of the activities:

1. Understand the competency to be developed and the suggested training process.

### Before undertaking the activities of Phase 1:

2. Draw up a list of their personal preferences, areas of interest and non-negotiable values as a guide in choosing a practicum position.

### Before undertaking the activities of Phase 2:

- 3. List the elements to be recorded during the practicum.
- 4. Describe the method of observation.
- 5. Determine a means of recording their observations.
- 6. Describe the main components of a report.

### Before undertaking the activities of Phase 3:

7. List the perceptions to be checked.

### MODULE 4: COMMUNICATING IN THE WORKPLACE

#### CODE: 721 241

#### Duration: 15 hours

### FIRST-LEVEL OPERATIONAL OBJECTIVE SITUATIONAL OBJECTIVE

### EXPECTED OUTCOME

To demonstrate the required competency, the students must **communicate in the workplace** in accordance with the following conditions, criteria and specifications.

### SPECIFICATIONS

By the end of this module, the students will:

- Realize the importance of communication in the workplace.
- Know the principles and techniques related to various forms of communication.
- Increase their capacity to communicate with the different members of the agricultural sector.

### LEARNING CONTEXT

### PHASE 1: Awareness

- Participating in activities that underline the difficulty of communicating.
- Recognizing the characteristics of effective communication and the factors that favour and hinder communication.
- Recognizing that forms of communication can differ according to the persons involved.

#### PHASE 2: Application

- Participating in activities using different communication techniques.
- Participating in role plays using various communication techniques with different people.

## PHASE 3: Evaluation of their ability to communicate with the different members of the agricultural sector

 Preparing a report on their weak and strong points in the area of communication with the different people in the agricultural workplace and measures to be taken to improve their performance.

### INSTRUCTIONAL GUIDELINES

The teacher should:

- Make available all pertinent reference materials.
- Encourage the participation of all students.
- Develop learning situations related to the agricultural sector.
- Provide support for carrying out activities.
- Provide hypothetical situations in the agricultural sector for purposes of role playing.
- Provide charts to help students gather data during role playing.
- Promote serious attitudes and respect during role playing and group evaluation.

### PARTICIPATION CRITERIA

PHASE 1:

- Participate in activities that illustrate the difficulty of communicating.
- List characteristics of effective communication and factors that favour or hinder communication.
- List problem situations that could arise with the different members of the agricultural sector.

PHASE 2:

- Participate in role plays involving practice with different communication techniques.
- Participate in role plays representing various situations involving members of the agricultural sector.

PHASE 3:

 Produce a realistic and coherent report, based on a self-evaluation, on the measures to take to improve their communication techniques with the members of the sector.

## IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

### Before undertaking any of the activities:

1. Understand the competency being developed and the suggested training process.

### Before undertaking the activities of Phase 1:

2. Realize the importance of communication.

### Before undertaking the activities of Phase 2:

- 3. Explain what role playing consists of.
- 4. Explain the main rules governing a proper group discussion.

### Before undertaking the activities of Phase 3:

- 5. Explain the stages of a self-evaluation process.
- 6. List the parts of a report.

### MODULE 5: ORGANIZING THE TECHNICAL DATA IN A HOG PRODUCTION BUSINESS

#### CODE: 721 255

#### **Duration: 75 hours**

### FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

### EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must **organize the technical data in a swine production business** in accordance with the following conditions, criteria and specifications.

### CONDITIONS FOR PERFORMANCE EVALUATION

- On the basis of actual and hypothetical cases, using data they have gathered or received, and following instructions.
- Using authorized reference materials, different registers, a microcomputer and its peripherals and software packages

### GENERAL PERFORMANCE CRITERIA

- Observance of the proposed methods and instructions
- Critical sense during the input of technical data
- Observance of the rules for presenting documents
- Sense of logic
- Precision and attention to detail

## SPECIFICATIONS OF THE EXPECTED BEHAVIOUR

A. Enter the data in the registers.

B. Keep accounts.

C. Prepare specialized reports.

- Proper collection of technical data
- Appropriate selection of technical data
- Classification of technical data according to recognized methods
- Accurate recording of technical data in the registers
- Observance of accounting principles
- Collection of all bills, receipts, order forms, cheques, etc.
- Correct classification of all documents
- Correct recognition of the data necessary for accounting
- Accurate data entry
- Full verification of all operations
- Correction of errors
- Collection of all technical data
- Selection of appropriate technical data
- Correct data entry using the computer
- Appropriate choice of reports
- Correct use of agricultural software
- Use of appropriate terminology
- Complete and accurate information on the subject treated

## IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

### Before learning how to enter the data in the registers (A):

- 1. Know the terminology appropriate for different sectors of a swine production enterprise.
- 2. Be familiar with the machinery and materials typical of a swine production enterprise.
- 3. Recognize the importance of gathering technical data in order to improve the productivity of an enterprise.
- 4. Use a note-taking method.

### Before learning how to keep accounts (B):

5. Master basic mathematical operations.

### Before learning how to prepare specialized reports (C):

6. Be familiar with the basic concepts of operating a microcomputer and its peripherals.

### MODULE 6: ASSOCIATING THE ANATOMY AND PHYSIOLOGY OF THE PIG WITH BREEDING REQUIREMENTS

### CODE: 721 264

**Duration: 60 hours** 

### FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

#### **EXPECTED BEHAVIOUR**

To demonstrate the required competency, the students must **associate the anatomy and physiology of the pig with breeding requirements** in accordance with the following conditions, criteria and specifications.

### CONDITIONS FOR PERFORMANCE EVALUATION

- Using models, diagrams or illustrations

### **GENERAL PERFORMANCE CRITERIA**

- Proper use of terminology

## SPECIFICATIONS OF THE EXPECTED BEHAVIOUR

A. Locate the principal anatomical systems.

- Accurate location of the systems:
  - locomotive
  - respiratory
  - cardio-vascular
  - digestive
  - endocrine
  - reproductive
  - elimination
  - nervous

## SPECIFICATIONS OF THE EXPECTED BEHAVIOUR

- B. Describe the interaction between the organs of a given system.
- C. Describe the interaction between the different systems.
- D. Relate the anatomy and physiology of the animal to procedures used in breeding and reproduction.

- Accurate location of organs within a system
- Awareness of the role of each organ
- Description of interaction between the organs of a system
- Awareness of the role of the different systems
- Establishment of interaction between different systems and its effect on the animal
- Awareness of the effects of the environment, feeding and reproductive methods on the physiological anatomy of the animal

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before learning how to locate the principal anatomatical systems (A):

1. Explain the nature of a system.

Before learning how to describe the interaction between the organs of a given system (B):

2. Differentiate between an organ and a system.

## MODULE 7: HERD CONTROL PROCEDURES

### CODE: 721 283

#### Duration: 45 hours

### FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

### EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must **use herd control procedures** in accordance with the following conditions, criteria and specifications.

### CONDITIONS FOR PERFORMANCE EVALUATION

- In a piggery:
  - working with a production register and pigs, and following instructions
  - using appropriate equipment, a computer and appropriate materials

### **GENERAL PERFORMANCE CRITERIA**

- Observance of occupational health and safety rules
- Observance of animal health and hygiene standards
- Proper handling of the animals
- Proper use of equipment
- Sense of observation and attention to detail

## SPECIFICATIONS OF THE EXPECTED BEHAVIOUR

- A. Tour the grounds to evaluate needs.
- B. Plan the work.
- C. Prepare the material and the premises.
- D. Prepare the pigs for slaughtering.

- Accurate evaluation of the situation
- Consideration of the general condition of the animals
- Appropriate choice of activities
- Logical order of activities
- Consideration of the control program
- Creation of appropriate alleys and pens for handling the animals
- Correct preparation of the material
- Correct preliminary classification
- Correct procedure for removing a pig from the group
- Observance of selection methods
- Appropriate tatooing of pigs
- Observance of the system for carcass classification
- Correct loading of the animals
- Appropriate record-keeping concerning the animals
- Appropriate management of the remaining stock

### FIRST-LEVEL OPERATIONAL OBJECTIVE **BEHAVIOURAL OBJECTIVE** SPECIFICATIONS OF THE EXPECTED SPECIFIC PERFORMANCE **BEHAVIOUR** CRITERIA E. Sever piglets. Appropriate choice of weaning method - Correct procedure for separating the sow from her piglets - Proper procedure for transferring the piglets to the nursery - Consideration of the animals' F. Determine which pigs to cull. health Accurate evaluation of the productivity of a pig to be culled - Appropriate choice of animals for culling G. Participate in the evaluation of the pigs' - Accurate interpretation of performance. zootechnical parameters - Appropriateness of the proposed corrective measures H. Fill in the registers Notation of all data and activities Accurate data Clear information - Register correctly kept Observance of classification I. Create homogenous lots. criteria: sex, weight, health, competitiveness

### MODULE 8: HEALTH CARE AND TREATMENTS

#### CODE: 721 288

**Duration: 120 hours** 

### FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

### **EXPECTED BEHAVIOUR**

To demonstrate the required competency, the students must **give health care and treatments to pigs** in accordance with the following conditions, criteria and specifications.

### CONDITIONS FOR PERFORMANCE EVALUATION

- Working with pigs
- Using appropriate equipment, medications and vaccinations

### **GENERAL PERFORMANCE CRITERIA**

- Observance of health and safety standards
- Observance of health and hygiene standards when dispensing care
- Attention to order and cleanliness
- Correct handling of the animals

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE	
SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
A. Observe the condition of the pigs.	<ul> <li>Accurate identification of symptoms of disease such as loss of appetite, fever, listlessness, etc.</li> <li>Correct consultation of the production register</li> <li>Correct assessment of flesh condition</li> <li>Identification of causes of disease and of measures to prevent and control disease</li> </ul>
<ul> <li>B. Interpret a health care and treatment program for pigs.</li> </ul>	<ul> <li>Accurate identification of the care and treatments required</li> </ul>
C. Plan the work.	<ul> <li>Precise determination of the tasks to perform</li> <li>Correct choice of priorities</li> <li>Logical organization of work</li> </ul>
D. Prepare the materials.	<ul> <li>Appropriate choice of materials</li> <li>Careful verification of the condition of the materials</li> <li>Appropriate remedial action taken</li> <li>Correct installation of isolation pens</li> </ul>
E. Give the pigs injections.	<ul> <li>Correct dosage</li> <li>Correct injection technique</li> </ul>

## SPECIFICATIONS OF THE EXPECTED BEHAVIOUR

- F. Crop needle teeth and dock tails.
- G. Castrate pigs and suture scrotal hernias.

H. Administer a non-injectable medication.

I. Provide care for sows.

- Observance of correct cutting technique
- Correct tooth and tail length
- Correct incision of the scrotum
- Correct removal of testicles
- Correct suturing of hernias
- Disinfection of the site of the operation
- Correct dosage
  - Correct administration of product
  - Correct cleaning of the sow and especially of the genital organs
  - Especially close attention during parturition
  - Correct examination of the sow
  - Appropriate hormone treatment
  - Correct technique for controlling aggressive sows
  - Correct technique for checking teats for wounds, swelling, etc.

## SPECIFICATIONS OF THE EXPECTED BEHAVIOUR

- J. Provide care for piglets.
- K. Place the piglets.
- L. Check the quality of the work.

- Correct technique for disinfecting the navel
- Correct technique for disinfecting and treating the piglets' hooves
- Proper feeding of very weak piglets
- Correct choice of piglets to be adopted
- Accurate assessment of a sow's nursing ability
- Follow-up to ensure that the adoption was successful
- Work in accordance with instructions
- Registers, information sheets and files correctly completed
- Appropriate data
- Clear information
- Appropriate recording of a case history

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

### Before learning how to observe the condition of the pigs (A):

1. Know the characteristics of a healthy animal.

### Before learning how to plan the work (C):

2. Explain the importance of planning the work correctly.

### Before learning how to give the pigs injections (E):

- 3. Know the units of measure.
- 4. Understand the concept of ratio or of a mathematical equation in one variable.

## MODULE 9: IMPROVING THE GENETIC QUALITY OF THE HERD

#### CODE: 721 293

#### Duration: 45 hours

### FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

### EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must **improve the genetic quality of a herd of pigs** in accordance with the following conditions, criteria and specifications.

### CONDITIONS FOR PERFORMANCE EVALUATION

- Following instructions
- Using the herd register, breeders' catalogues, classification reports, production records and registration certificates

### **GENERAL PERFORMANCE CRITERIA**

- Clear interpretation of the main management tools used in genetics and reproduction

## SPECIFICATIONS OF THE EXPECTED BEHAVIOUR

- A. Select the breed or breeds to be used for reproduction.
- B. Select the inherited characters appropriate for a breeding program.
- C. Establish and retain inherited characters by means of a breeding program.
- D. Establish a genetic relationship between breeding animals.
- E. Associate the components of genetic progress in pigs with the economic yield of the herd.

- Accurate description of the principal breeds of pigs
- Concise description of the standards and objectives of each breed
- Evaluation of genetic value
- Identification of genotypes and phenotypes
- Heritability of different characters
- Economic assessment of an inherited character
- Accurate distinction between dominance and recessivity
- Single cross, backcross or three or four-way cross
- Inbreeding (concept of hybrid vigour)
- Type of cross to favour
- Detection of hereditary defects
- Awareness of the Hal gene
- Consideration of the indicators of genetic progress

## SPECIFICATIONS OF THE EXPECTED BEHAVIOUR

F. Predict the results of a cross.

- Genotypical and phenotypical evaluation of a pig
- Cull certain pigs
- Take genetic defects into account
- Inclusion of all relevant data
- Clarity of entries
- Immediate entry of data
- G. Enter technical data in the herd register.

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before learning how to select the breed or breeds to be used for reproduction (A):

- 1. Be familiar with the various breeds.
- 2. Know the desired characteristics.

Before learning how to select the inherited characters appropriate for a breeding program (B):

3. Explain the phenomenon of the transmission of characteristics to future generations, using Mendel's laws.

## Before learning how to establish and retain inherited characters by means of a breeding program (C):

4. Grasp the importance of following a breeding program.

## MODULE 10: IMPLEMENTING A BREEDING PROGRAM

#### CODE: 721 307

#### **Duration: 105 hours**

### FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

### EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must **implement a breeding program** in accordance with the following conditions, criteria and specifications.

### CONDITIONS FOR PERFORMANCE EVALUATION

- Working individually and in two-person teams
- In a real situation
- Using a herd of pigs, a breeding program and herd registers, and following instructions
- Using equipment

### **GENERAL PERFORMANCE CRITERIA**

- Observance of occupational health and safety rules
- Proper use of the equipment
- Concern for efficiency and attention to detail
- Sense of observation
- Concern for the comfort and safety of the animals

## SPECIFICATIONS OF THE EXPECTED BEHAVIOUR

- A. Plan the breeding activities.
- B. Select the animals to be bred.
- C. Have the pigs mate or inseminate them.
- D. Test for pregnancy.
- E. Help harvest the boar's semen.

- SPECIFIC PERFORMANCE CRITERIA
- Correct interpretation of the farm's breeding program
- Consultation of the appropriate registers
- Following the owner's instructions
- Logical planning of activities
- Accurate assessment of performance, health and conformation
- Appropriate choice of animals
- Accurate detection of heat period and return of heat period
- Proper preparation of animals for breeding
- Proper observation of mating
- Correct insemination technique
- Proper preparation of material
- Correct use of the pregnancy detection apparatus
- Correct interpretation of data provided by the apparatus
- Correct preparation of the material
- Appropriate assistance during semen collection
- Rigorous verification of semen quality
- Appropriate storage of semen
- F. Record the technical data in the herd register. Inclusion of all relevant data
  - Clear information
  - Immediate data entry

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

### Before learning how to plan the breeding activities (A):

1. Realize the importance of following a breeding program.

Before learning how to select the animals to be bred (B):

- 2. Understand that the selection of breeding subjects is an essential condition for successful breeding.
- 3. Be aware of the desirable characteristics in breeding pigs

### Before learning how to have the pigs mate or inseminate them (C):

- 4. Use a microscope.
- 5. Know the dilution method.

### Before learning how to record the technical data in the herd register (F):

6. Explain the importance of recording all significant data.

## MODULE 11: ASSOCIATING THE NUTRITIVE VALUE OF FOODS WITH THE NUTRITIONAL REQUIREMENTS OF PIGS

#### CODE: 721 314

#### **Duration: 60 hours**

## FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

## EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must **associate the nutritive value of foods with the nutritional requirements of pigs** in accordance with the following conditions, criteria and specifications.

## CONDITIONS FOR PERFORMANCE EVALUATION

- Using feeding charts and following instructions

- Concern for efficiency and attention to detail
- Concern for the health of the animals

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE		
SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA	
A. Determine the feed requirements of the pigs.	<ul> <li>Consideration of the category to which an animal belongs and its physiological stage</li> <li>Accurate interpretation of nutritional tables</li> <li>Accurate evaluation of needs</li> <li>Accurate calculations</li> <li>Accurate assessment of flesh condition</li> </ul>	
B. Calculate the nutritional value of a feed ration.	<ul> <li>Consideration of the different characteristics of foods</li> <li>Accurate calculations</li> <li>Accurate interpretation of analyses and tables</li> </ul>	
C. Evaluate the effects of a food on an animal.	<ul> <li>Establishment of relationships between a pig's general condition and what it eats</li> <li>Recognition of effects observed on the animal</li> </ul>	
D. Adapt a diet plan.	<ul> <li>Substitution of appropriate foods</li> <li>Consideration of the various nutritional problems and deficiencies</li> </ul>	

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before learning how to calculate the nutritional value of a mash (B):

1. Solve a mathematical equation.

## **MODULE 12: IMPLEMENTING A FEEDING PROGRAM FOR PIGS**

### CODE: 721 323

#### **Duration: 45 hours**

## FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

## EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must **implement a feeding program for pigs** in accordance with the following conditions, criteria and specifications.

## CONDITIONS FOR PERFORMANCE EVALUATION

- In a real situation
- Working with a herd of pigs, registers and information sheets and following instructions
- Using the necessary equipment and supplies

- Observance of occupational health and safety rules
- Appropriate use of the equipment
- Concern for efficiency and attention to detail
- Sense of observation
- Concern for the health of the animals

# SPECIFICATIONS OF THE EXPECTED BEHAVIOUR

A. Evaluate the effectiveness of the pigs' nutrition.

## SPECIFIC PERFORMANCE CRITERIA

- Consultation of the appropriate registers or information sheets
- Correct determination of the different coefficients of production
- Correct interpretation of these factors

B. Prepare the feed.

- Accurate interpretation of prescribed recipes
- Determination of the nutrients necessary
- Accurate calculation of the cost of the ingredients
- Proper verification of supplies
- Proper incorporation of ingredients in the recipe
- Maintenance of equipment in good operating order
- Proper storage of the feed
- Collection of representative samples of feed
- Correct expedition of samples to laboratory for analysis

C. Grade the pre-mix.

- Correct grading technique
- Appropriate choice of grind

## FIRST-LEVEL OPERATIONAL OBJECTIVE **BEHAVIOURAL OBJECTIVE** SPECIFICATIONS OF THE EXPECTED SPECIFIC PERFORMANCE CRITERIA BEHAVIOUR D. Distribute the feed. - Observance of owner's instructions - Detection of anorexic behaviour Correct consultation of information sheets - Accurate identification of the animals - Appropriate waste prevention measures - Correct feed quality control measures - Respect for individual needs E. Monitor the operation of the feed distributor. - Observance of owner's instructions - Detection of any problems with the distributor Correct consultation of information sheets Appropriate waste prevention measures - Proper adjustment of feed flow - Inclusion of all relevant data F. Record the technical data in the register.

- Clear information
- Prompt, regular data entry

# IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

## Before learning how to evaluate the effectiveness of the pigs' nutrition (A):

1. Calculate a coefficient.

## Before learning how to prepare the mash (B):

2. Solve a mathematical equation.

## Before learning how to distribute the feed (D):

- 3. Recognize the symptoms of feeding problems.
- 4. Understand and respect the animals' behaviour.

## MODULE 13: CHOOSING, MAINTAINING AND OPERATING A TRACTOR

### CODE: 721 332

#### Duration: 30 hours

## FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

## EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must **do periodic maintenance on tractors** in accordance with the following conditions, criteria and specifications.

## CONDITIONS FOR PERFORMANCE EVALUATION

- Using agricultural tractors
- Referring to maintenance manuals
- Using a maintenance table
- Using products and spare parts
- Using lifting and blocking tools

- Order and cleanliness during the work
- Observance of occupational health and safety rules
- Conformity with maintenance manual instructions
- Sense of observation

# SPECIFICATIONS OF THE EXPECTED BEHAVIOUR

A. Choose the tractor that is appropriate for common operations on the farm.

## SPECIFIC PERFORMANCE CRITERIA

- Determination of needs in terms of performance, related systems and accessories
- Proper choice of tractor, taking into account the size of the fields, the time available, the tasks to be carried out and the implements available on the farm
- Smooth, safe use of the tractor

- B. Drive the tractor.
- C. Do periodic maintenance on a tractor.
  - Use a maintenance manual.
  - Change oils and filters.
  - Grease equipment.

- Selection of relevant information from the manual
- Accurate interpretation of the information
- Correct reading of the periodic maintenance tables
- Choice of appropriate oils and filters
- Changing of filters and oils
- Adequate maintenance of levels
- Proper selection of the types of grease to use
- Proper amount of grease, according to the parts

# SPECIFICATIONS OF THE EXPECTED BEHAVIOUR

- Do the checks, adjustments and minor repairs recommended by the maintenance manual.
- Record the information.

## SPECIFIC PERFORMANCE CRITERIA

- Choice of appropriate technique
- Adjustment in accordance with recommendations
- Appropriate cleaning of parts and systems
- Safe lifting and blocking set-ups
- Adequate repairs of minor breaks
- Accurate recording of the information in the maintenance records, such as dates of oil and filter changes and greasings
- Recording of additional information such as hours of work, conditions for use and repair costs
- Careful preparation

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

## Before learning how to drive a tractor (B):

- 1. Be familiar with the safety rules related to using tractors.
- 2. Describe the minimum checks to make before starting.
- 3. Describe the functions of the instruments on the instrument panel.
- 4. Describe the role of each lever or foot pedal.
- 5. Be familiar with the procedures for cold starting
- 6. Differentiate the types of motors, transmissions, power take-offs, hydraulic lifts, brakes and final drives.
- 7. Be familiar with the basic structure of tractors and their specialized attachments.
- 8. Be familiar with the operation of the mechanical, hydraulic, electrical and electronic systems of tractors.
- 9. Define the heat conditions for oil changing.
- 10. Purge air from the diesel systems.
- 11. Explain how to dispose of used oil.
- 12. Explain the procedures for cleaning air filters.
- 13. Explain the procedures for adjusting the linkages of the brakes and the clutch.
- 14. Explain the adjustment of a wheel hub.
- 15. Explain the operating checks for the hitching accessories.
- 16. Explain the method for checking the air pressure in wheels with or without liquid filling.
- 17. Design a technique that takes into account the information in the maintenance manual.

## **MODULE 14: SAFE, RATIONAL USE OF PESTICIDES**

#### CODE: 721 142

Duration: 30 hours

## FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

## EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must **use pesticides safely and rationally** in accordance with the following conditions, criteria and specifications.

## CONDITIONS FOR PERFORMANCE EVALUATION

- Based on the results of previous measures
- Using information on environmental conditions on the land to be treated
- On the basis of a hypothetical situation
- Consulting the recommendations of pesticide makers
- Referring to the information on pesticide dispenser labels, toxicology information sheets and instructions on the use, calibration and maintenance of pesticide dispensing equipment

- Observance of occupational health and safety rules
- Observance of laws and regulations concerning environmental protection and pesticide use
- Adoption of practices recommended by the Ministère de l'Environnement et de la Faune
- Constant concern for the effect of pesticides on the environment
- Correct use of equipment
- Logical sequence of operations

# SPECIFICATIONS OF THE EXPECTED BEHAVIOUR

A. Plan a specific intervention designed to combat crop pests or external animal parasites.

## SPECIFIC PERFORMANCE CRITERIA

- Accurate evaluation of damage done
- Accurate identification of biotic or abiotic cause of damage
- Appropriate choice of measures, taking into account:
  - the extent of the damage
  - the result of previous measures
  - the overall pest control program
  - the environmental conditions
- Extermination of external parasites on animals

B. Choose a pesticide.

- Respect for criteria such as:
  - the development stage of the crops
  - environmental conditions
  - the classification of pesticides
  - the characteristics of pesticides
  - factors influencing the effectiveness of the pesticide
- Appropriate choice of adjuvant
- C. Prepare the materials and equipment used for pesticide application.
- Appropriate choice of application equipment
- Appropriate choice of protective equipment
- Verification of the state of the various types of equipment
- Observance of the manufacturer's instructions for calibration

# SPECIFICATIONS OF THE EXPECTED BEHAVIOUR

D. Prepare different pesticides for application.

## SPECIFIC PERFORMANCE CRITERIA

- Creation of an appropriate area for preparing and handline of the product
- Accurate interpretation of information on label and the toxicological information sheet
- Accurate calculation of the amount of pesticide to prepare for the area to be treated
- Accurate calculation of the rate of application
- Homogeneity of the mixture
- Correct elimination of empty containers
- Consideration of environmental factors
- Consideration of ways to minimize exposure to pesticide
- Adequate environmental protection measures
- Adjustment of height of spray boom according to type of crop and development stage
- Constant monitoring of flow of pesticide being released
- Appropriate form of transportation or displacement
- Control of pesticide drift
- Maintenance, decontamination and storage of protection and application equipment
- Precautions taken when using pesticides in agricultural buildings

E. Apply the pesticide.

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE		
SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA	
F. Store the pesticides	<ul> <li>Distinction among security measures to adopt according to the nature and use of the pesticides</li> <li>Appropriate adjustments to installations and emergency measures</li> </ul>	
G. Evaluate the intervention.	<ul> <li>Evaluation of effectiveness of measures taken</li> <li>Determination of factors influencing success or failure</li> </ul>	
H. Record the technical data in a register of pesticide use.	<ul> <li>Full description of technical data such as:</li> <li>determination of crop needing treatment</li> <li>description of problem</li> <li>quantity of pesticide used</li> <li>result of treatment</li> </ul>	
I. Plan an overall pest control program.	<ul> <li>Observance of the steps of the overall program</li> <li>Appropriateness of measures chosen</li> </ul>	

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

#### Before learning how to choose a pesticide (B):

- 1. Become aware of the extent of pesticide use.
- 2. Describe the socio-economic factors associated with pesticide use.
- 3. Become aware of the phenomena that underlie the presence of pesticides in the environment.
- 4. Become aware of the short- and long-term effects of pesticides on plants and animals and recognize that pesticides are associated with increases in intoxication levels in the food chain.
- 5. Recognize the harmful effects of pesticides on human health.
- 6. Become aware of reliable sources of information on the safe use of pesticides.
- 7. Become aware of the limits of scientific knowledge about pesticides, weeds and pests, and alternative methods.
- 8. Understand the need for a change in attitude concerning pesticide use, and more generally the need for greater respect for the environment.
- 9. List the levels of government that can regulate the use and areas of application of pesticides.
- 10. Know the laws and regulations regarding pesticide use.

# Before learning how to prepare the materials and equipment used for pesticide application (C):

11. Know how to drive motorized equipment.

#### Before learning how to prepare the product (D):

- 12. Solve a mathematical equation containing an unknown quantity.
- 13. Understand the importance of careful planning of pesticide purchases.
- 14. Understand metric and imperial units of measure and how to convert from one to the other.
- 15. Calculate areas and volumes.

#### Before learning how to apply the pesticide (E):

- 16. Understand the importance of using pesticide application equipment properly.
- 17. Give the reasons why the steps to be followed should be reviewed regularly.
- 18. Know the principles governing professional behaviour in dealings with the public.

## **MODULE 15: SOIL PREPARATION**

## CODE: 721 154

#### **Duration: 60 hours**

## FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

#### EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must **prepare the soil** in accordance with the following conditions, criteria and specifications.

## CONDITIONS FOR PERFORMANCE EVALUATION

- In a field
- Following instructions
- Using:
  - field records
  - analysis reports
  - appropriate tillage implements
  - appropriate supplies

- Observance of the crop program
- Observance of work methods and techniques
- Observance of occupational health and safety rules
- Correct use of the equipment

## FIRST-LEVEL OPERATIONAL OBJECTIVE **BEHAVIOURAL OBJECTIVE** SPECIFICATIONS OF THE EXPECTED SPECIFIC PERFORMANCE BEHAVIOUR CRITERIA A. Assess the condition of the field. - Appropriate consultation of the field register - Verification of soil drainage - Consideration of productivity B. Define soil preparation needs. Accurate evaluation of the work required for good soil drainage - Consideration of the history of the farm, its crops and its tillage practices C. Plan soil preparation work. - Accurate interpretation of instructions Observance of crop rotation, if applicable - Choice of the best time for the various operations - Consideration of the order of operations and of the amount of time required for each operation - Appropriate choice of equipment - Logical sequence of operations - Consideration of soil conservation techniques D. Prepare the machinery. - Verification of lubrication - Verification of good operating order - Appropriate corrective measures

## FIRST-LEVEL OPERATIONAL OBJECTIVE **BEHAVIOURAL OBJECTIVE** SPECIFICATIONS OF THE EXPECTED SPECIFIC PERFORMANCE BEHAVIOUR CRITERIA E. Adjust and calibrate tillage implements. - Observance of the manufacturer's instructions - Accurate adjustment and calibration F. Plough - Correct marking out of the field - Correct ploughing techniques: - appropriate depth - straight furrows - correct peat burial - straight back furrows and drainage ditches G. Harrow. - Correct seed bed depth - Without disturbing the drainage ditches - Following the direction of the ploughing H. Record the information. - Full record of all work done - Clear information Accurate information

# IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

## Before learning how to assess the condition of the field (A):

1. Determine the different crop and soil problems that can be corrected when the soil is prepared.

#### Before learning how to define soil preparation needs (B):

- 2. Describe the main soil conservation techniques.
- 3. Know the needs of proposed crop regarding soil preparation.

#### Before learning how to adjust and calibrate tillage implements (C):

4. Recognize the roles of different tillage implements and the action of their components.

## Before learning how to plough (F):

5. Drive a tractor.

## MODULE 16: ASSOCIATING PLANT ANATOMY AND PHYSIOLOGY WITH THE PLANTS GROWN

### CODE: 721 353

**Duration: 45 hours** 

## FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

## EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must **associate plant anatomy and physiology with the plants grown** in accordance with the following conditions, criteria and specifications.

## CONDITIONS FOR PERFORMANCE EVALUATION

- Using maquettes, diagrams or illustrations

## **GENERAL PERFORMANCE CRITERIA**

- Accurate use of terminology

# SPECIFICATIONS OF THE EXPECTED BEHAVIOUR

- A. Relate plant growth to the phenomenon of photosynthesis.
- B. Locate the anatomical parts of a plant.
- C. Relate the physiology of a plant to its environment.
- D. Identify cultivated plants and weeds.

E. Relate the various physiological phenomena of plants to tillage practices.

## SPECIFIC PERFORMANCE CRITERIA

- Establishment of relevant relationship between growth and the corn heat unit
- Consideration of the storage of solar energy
- Correct identification
- Correct association of soil nutrients with plant growth
- Correct linkage of plant growth with the availability of nutrients
- Demonstration of the influence of the environment on healthy plant growth
- Correct identification of the cultivated plants
- Correct classification of the cultivated plants in their respective families
- Accurate identification of weeds affecting crop production
- Association of the phenomenon of tillering with cereal yield
- Determination of the most favourable conditions for germination

# SPECIFICATIONS OF THE EXPECTED BEHAVIOUR

- F. Predict the yield of the crop.
- G. Relate the mode of absorption of plants to soil fertilization.

## SPECIFIC PERFORMANCE CRITERIA

- Consideration of the life cycle of the plant
- Appropriate estimate of crop yield
- Correct association of soil fertilization with plants' absorption of nutrients
- Consideration of the exchange mechanism between the soil solution and the plant
- Correct association of the symbiosis of legumes with their fertilization

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before learning how to relate plant growth to the phenomenon of photosynthesis (A):

1. Explain the food chain.

Before learning how to identify cultivated plants and weeds (D):

2. Use an identification key.

Before learning how to relate the mode of absorption of plants to soil fertilization (G):

3. Know the principal chemical elements in nature.

## MODULE 17: PREVENTIVE MAINTENANCE OF TOOLS AND MACHINERY

#### CODE: 721 362

#### **Duration: 30 hours**

## FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

## EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must **maintain tools and machinery and do minor repairs** in accordance with the following conditions, criteria and specifications.

## CONDITIONS FOR PERFORMANCE EVALUATION

- Working individually
- Using agricultural equipment
- Using tools from the farm workshop
- Using petroleum products and maintenance manuals

- Order and cleanliness of work
- Appropriate evaluation methods
- Appropriate work techniques
- Observance of the manufacturers' specifications
- Observance of health and safety rules

# SPECIFICATIONS OF THE EXPECTED BEHAVIOUR

- A. Use and maintain the farm workshop tools.
- B. Select the petroleum products used in the maintenance of tractors, machines and small engines.
- C. Plan the maintenance of mechanical farm equipment.
- D. Perform common maintenance operations and minor repairs.
- E. Perform minor repairs required by the farm equipment.

## SPECIFIC PERFORMANCE CRITERIA

- Appropriate choice of tool
- Proper handling
- Appropriate choice of products
- Accuracy of mix calculations
- Complete maintenance records
- Clear data
- Realistic planning of work
- Observance of specifications
- Appropriate evaluation methods
- Proper techniques
- Observance of specifications
- Appropriate evaluation methods
- Proper techniques

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

### Before learning how to use and maintain the farm workshop tools (A):

- 1. Be familiar with the specifications of combination tools.
- 2. Determine the maintenance requirements of the farm workshop tools.
- 3. Understand why it is important to properly store and clean the farm workshop tools.

Before learning how to select the petroleum products used in the maintenance of tractors, machines and small engines (B):

- 4. Be familiar with the service and viscosity classifications of motor, hydraulic, twostroke and transmission oils.
- 5. Be familiar with the classifications of greases and their uses.
- 6. Use the usual mathematical relations to calculate the mixes for two-stroke engines.
- 7. Be familiar with the cleaning and protection products for farm equipment.

#### Before learning how to plan the maintenance of mechanical farm equipment (C):

- 8. Write an equipment maintenance record.
- 9. Draw up a list of supplies (e.g. oils, greases, parts).

# Before learning how to perform common maintenance operations and minor repairs (D):

10. Acquire the visual, auditive, tactile and technical methods of evaluation of equipment wear.

## Before learning how to perform minor repairs required by the farm equipment (E):

11. Evaluate the wear on parts.

## MODULE 18: IMPLEMENTING A FERTILIZATION AND CONDITIONING PROGRAM

CODE: 721 372

**Duration: 30 hours** 

## FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

## EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must **implement a fertilization and conditioning program** in accordance with the following conditions, criteria and specifications.

## CONDITIONS FOR PERFORMANCE EVALUATION

- In a plot or a field
- Following instructions
- Using:
  - tillage machines and instruments
  - protective clothing
  - the necessary supplies

- Observance of instructions
- Observance of occupational health and safety standards
- Observance of environmental protection laws
- Concern for detail and precision

SPECIFIC PERFORMANCE

CRITERIA

# SPECIFICATIONS OF THE EXPECTED BEHAVIOUR

A. Assess the condition of the field.	<ul> <li>Take soil samples</li> <li>Accurate interpretation of the productivity of the field and of analysis reports</li> <li>Evaluation of drainage, sanitation and plant growth</li> <li>Consideration of crop needs</li> <li>Recognition of inadequate or excess mineral content</li> </ul>
B. Plan the fertilization and conditioning tasks.	<ul> <li>Proper consultation of the field register</li> <li>Accurate assessment of the work required to spread fertilizer</li> <li>Appropriate choice of machinery and supplies</li> <li>Accurate calculation of fertilizer and conditioner requirements</li> <li>Proper choice of fertilizer formula</li> <li>Correct evaluation of costs</li> <li>Accurate evaluation of amount of conditioner to use</li> </ul>
C. Prepare the equipment.	<ul> <li>Accurate adjustment and calibration of the spreader</li> </ul>
D. Spread the fertilizer.	<ul> <li>Determination of the appropriate moment for spreading fertilizer</li> <li>Observance of appropriate techniques for spreading fertilizer</li> <li>Safe loading of the spreader</li> <li>Regular checking of fertilizer flow</li> </ul>
E. Record the technical data in the field register.	<ul> <li>Full record of work done and materials used</li> <li>Clear and accurate information</li> </ul>
F. Verify the result of fertilization and conditioning.	<ul> <li>Accurate determination of errors in application techniques</li> <li>Accurate evaluation of the productivity of the field</li> </ul>

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

## Before learning how to assess the condition of the field (A):

- 1. Explain the roles of soil.
- 2. Determine the physical, biological and chemical characteristics of the soil.

## Before learning how to plan the fertilization and conditioning tasks (B):

3. Explain the importance of fertilizing and conditioning the soil.

## Before learning how to spread the fertilizer (D):

- 4. Explain the importance of observing application periods.
- 5. Explain the the importance of environmental protection.

# MODULE 19: PLANTING CROPS

## CODE: 721 382

## **Duration: 30 hours**

## FIRST-LEVEL OPERATIONAL OBJECTIVE **BEHAVIOURAL OBJECTIVE**

## **EXPECTED BEHAVIOUR**

To demonstrate the required competency, the students must **plant a crop** in accordance with the following conditions, criteria and specifications.

## CONDITIONS FOR PERFORMANCE EVALUATION

- In a field
- Following instructions
- Using seeding machinery and the required supplies

- Observance of the planting plan or of instructions
   Appropriate use of machinery
   Observance of appropriate work techniques during the planting operations
   Respect for the environment and for occupational health and safety rules
   Attention to detail and precision

# SPECIFICATIONS OF THE EXPECTED BEHAVIOUR

A. Assess the condition of the fields.

C. Prepare the equipment and materials.

B. Plan the activities.

- Accurate evaluation of soil dryness
- Verification of seed bed quality
- Proper consultation of the field register
- Proper choice of varieties and stand density
- Consideration of the size of fields
- Accurate calculation of required supplies
- Accurate evaluation of costs
- Appropriate choice of supplies such as seed, inoculants, fertilizer and treatment products
- Appropriate choice of planting methods
- Determination of the correct date for seeding
- Precise adjustment of the tillage machines
- Precision of the seed and the fertilizer flow, if applicable
   Treatment of seed, if necessary
- Treatment of seed, if necessary
   Verification of operating condition of machinery and materials
- Appropriate corrective measures
- Appropriate furrow depth
- Constant monitoring of operation of seed drill
- Correct placing of seed
- Observance of the technique

D. Seed.

# SPECIFICATIONS OF THE EXPECTED BEHAVIOUR

- E. Record the information in the field register.
- Full record of the work done and the materials usedClear and accurate information
- F. Evaluate the quality of the planting.
- Determination of weaknesses in the application of techniques

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

## Before learning how to plan the activities (B):

1. Describe the characteristics and requirements of the different species of crops.

## Before learning how to seed (D):

2. Realize the importance of stand density.

# **MODULE 20: MAINTAINING CROPS**

## CODE: 721 391

### **Duration: 15 hours**

## FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

## EXPECTED **BEHAVIOUR**

To demonstrate the required competency, the students must **maintain a crop** in accordance with the following conditions, criteria and specifications.

## CONDITIONS FOR PERFORMANCE EVALUATION

- In a field
- Following instructions
- Using:
  - agricultural equipment
  - protective clothing
  - the required supplies

## **GENERAL PERFORMANCE CRITERIA**

- Observance of instructions
- Mastery of maintenance operation techniques
- Observance of occupational health and safety standards
- Precision and attention to detail

## FIRST-LEVEL OPERATIONAL OBJECTIVE **BEHAVIOURAL OBJECTIVE** SPECIFICATIONS OF THE EXPECTED SPECIFIC PERFORMANCE BEHAVIOUR CRITERIA - Evaluation of drainage and of plant A. Evaluate the condition of the crop. health and growth - Accurate determination of the degree of infestation - Detection of crop pests B. Plan the maintenance tasks. - Consultation of the field register - Consideration of previous and present problems - Appropriate choice of treatment - Appropriate choice of supplies - Correct evaluation of costs Determination of the best times for treatment Accurate calculation of supplies C. Prepare the equipment. - Precise adjustment and calibration of the agricultural equipment - Verification of equipment operation - Appropriate corrective measures D. Carry out the maintenance tasks. - Proper weeding technique - Application of the appropriate pesticide - Full record of the work done and E. Record the relevant data in the field register. the materials used Clear and accurate information F. Evaluate the quality of the maintenance Determination of weaknesses in activities. the application of techniques - Evaluation in terms of the expected results

# MODULE 21: OXYACETYLENE CUTTING AND ARC WELDING

### CODE: 721 213

Duration: 45 hours

## FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

### EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must **apply concepts of oxyacetylene cutting and arc welding** in accordance with the following conditions, criteria and specifications.

## CONDITIONS FOR PERFORMANCE EVALUATION

- Working on plates and steel parts
- Using gas welding and cutting machines
- Using the appropriate tools, equipment and accessories
- Using work sheets specifying the operations to be carried out

### **GENERAL PERFORMANCE CRITERIA**

- Observance of occupational health and safety rules
- Appropriate use of tools and equipment
- Observance of the techniques
- Work done in accordance with the instructions received
- Appearance and solidity of the welds in accordance with established standards

# SPECIFICATIONS OF THE EXPECTED BEHAVIOUR

- A. Set up the oxyacetylene welding machine.
- B. Perform oxyacetylene cutting operations on metal.

### SPECIFIC PERFORMANCE CRITERIA

- Proper choice of accessories and gas
- Safe set-up procedure
- Set-up in accordance with established rules
- Correct adjustment of regulator valves
- Appropriate choice of tips
- Safety measures suited to the working conditions
- Use of proper techniques
- Clean cut
- Proper preparation of the parts
- Proper choice of electrodes
- Proper settings for the machine
- Proper use of methods and techniques
- Appearance and solidity of welds

C. Make shielded metal arc welds.

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

### Before learning how to set up the oxyacetylene welding machine (A):

- 1. Describe ferrous and non-ferrous metals.
- 2. Be familiar with the physical effects of heat on metals.
- 3. Describe the principles of autogenous and heterogeneous welding.
- 4. Describe the gases and material in oxyacetylene welding.
- 5. Be familiar with the safety rules related to the use of oxyacetylene welding machines.

#### Before learning how to perform oxyacetylene cutting operations on metal (B):

- 6. Explain the principles of oxyacetylene cutting.
- 7. Choose the tips and adjust the torch.
- 8. Apply the safety rules specific to oxyacetylene cutting.
- 9. Handle the torch correctly.

### Before learning how to make shielded metal arc welds (C):

- 10. Be familiar with the principles of arc welding.
- 11. Be familiar with the types of machines and equipment.
- 12. Be familiar with the electrodes.
- 13. Be familiar with the safety rules related to arc welding.
- 14. Prepare the parts to be arc welded.
- 15. Adjust the settings on the arc welding machine.
- 16. Do flat welding.
- 17. Do horizontal and vertical welds.

## MODULE 22: HARVESTING

### CODE: 721 403

### **Duration: 45 hours**

## FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

### EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must **harvest crops** in accordance with the following conditions, criteria and specifications.

## CONDITIONS FOR PERFORMANCE EVALUATION

- Following instructions
- In a field
- In a real situation
- Using the appropriate machinery and equipment

### **GENERAL PERFORMANCE CRITERIA**

- Observance of occupational health and safety rules
- Appropriate use of harvesting machinery and material
- Efficiency and attention to detail

## FIRST-LEVEL OPERATIONAL OBJECTIVE **BEHAVIOURAL OBJECTIVE** SPECIFICATIONS OF THE EXPECTED SPECIFIC PERFORMANCE **BEHAVIOUR** CRITERIA - Proper consultation of the field A. Evaluate the state of the crops. register Accurate evaluation of crop maturity Accurate assessment of the state of the harvest during the work B. Plan the work. List of all tasks to be carried out during the harvest Accurate evaluation of the scope of tasks related to the harvest - Accurate estimate of the equipment required - Consideration of the effectiveness of the machinery, the location of the fields and the workers available Consideration of weather conditions in the organization of the work C. Prepare the machinery. - Verification of operating condition - Adjustment according to the manufacturer's instructions Verification of lubrication and greasing of machines Observance of the techniques for D. Harvest the crops. using the machinery

# SPECIFICATIONS OF THE EXPECTED BEHAVIOUR

- E. Record the relevant data in the field register.
- Correct recording of data on:
  - work done, with dates
  - quantities harvested
  - crops harvested
  - the quality of the crops
  - weather conditions, etc.
- Clear, accurate and relevant information
- F. Evaluate the results of the work and the quality of the crop storage.
- Evaluation of the effectiveness of the machinery and equipment
- Thorough checking of the storage conditions of the harvested crops

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

### Before learning how to evaluate the state of the crops (A):

- 1. Correctly identify the plants.
- 2. Be familiar with the growing period of the crops.

### Before learning how to plan the work (B):

3. Know the effectiveness of the various machines

### Before learning how to harvest the crops (D):

- 4. Drive a tractor hitched to a machine.
- 5. Operate a combine harvester.
- 6. Clean the machine after use.

# Before learning how to evaluate the results of the work and the quality of the crop storage (F):

7. Be familiar with the different storage methods.

## MODULE 23: BUILDING AND EQUIPMENT MAINTENANCE

### CODE: 721 414

**Duration: 60 hours** 

## FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

### EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must **do building and equipment maintenance** in accordance with the following conditions, criteria and specifications.

## CONDITIONS FOR PERFORMANCE EVALUATION

- Given practical, common cases or problems that typify the minor work related to the general maintenance of the buildings and equipment on a pig farm
- Following instructions
- Using the tools, material, equipment and systems that are normally available on a pig farm
- Using all relevant information
- Inside or outside farm buildings

### **GENERAL PERFORMANCE CRITERIA**

- Observance of occupational health and safety standards
- Appropriate use of tools, materials and equipment
- Observance of the various codes that apply to the field of agriculture
- Observance of techniques
- Mastery of knowledge related to the operations

# SPECIFICATIONS OF THE EXPECTED BEHAVIOUR

A. Become familiar with the work to be done.

- Accurate interpretation of the preventive maintenance records and the maintenance program
- Accurate interpretation of the instructions
- Precise description of the main maintenance tasks
- Realistic estimate of the tasks involved
- Appropriate choice of all the necessary tools, materials and equipment
- Logical order of tasks
- Demonstration of a sense of organization
- Observance of precautions and safety measures
- Solid, safe set-up of work equipment and scaffolding
- Complete visual check of the buildings and their surroundings
- Precise list of all anomalies and defects observed

- B. Organize the work.
- C. Prepare the work area.
- D. Do the normal checks on and around the buildings.

# SPECIFICATIONS OF THE EXPECTED BEHAVIOUR

E. Do minor repairs on buildings and equipment.

- Proper checking of humidity, ventilation and temperature inside buildings
- Observance of instructions
- Appropriate choice of materials such as lumber, roof coverings, insulation and vapour barriers
- Appropriate choice of materials for ventilation, cleaning, heating and power supply
- Correct repair of structures:
   solidity of installations
  - accurate measurements
  - observance of the
  - manufacturers' instructions
- F. Take action when important problems occur.
- Prompt action when there is a defect, fire or accident
- Location of defective equipment
- Observance of health and safety rules
- Complete observance of the Electrical Code
- G. Check and maintain the generator set.
- Regular checking of operation
- Replacement of filters and oils
- Checking of fuel level

# SPECIFICATIONS OF THE EXPECTED BEHAVIOUR

H. Do minor repairs on the various systems.

- Location, repair and replacement of defective parts
- Observance of manufacturers' instructions
- Observance of all codes
- Observance of techniques for replacing and repairing equipment
- Proper operation of the systems
- Evaluation of the performance of the systems
- I. Complete the work, clean up and store tools and materials.
- J. Record the technical data in the register.
- Absence of rubbish on the work site
- Cleanliness of the tools and equipment used
- Accurate evaluation of the corrective work carried out
- Inclusion of all relevant information
- Clear information

# IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

### Before learning how to organize the work (B):

- 1. Distinguish the respective characteristics and functions of the different hand tools and electrical devices.
- 2. Identify the different construction materials used and their respective uses.

### Before learning how to prepare the work area (C):

- 3. Describe the main risks and dangers related to the use of tools and equipment in maintenance work on buildings and equipment.
- 4. Describe the main risks and dangers related to the use of hazardous substances and toxic gases.

### Before learning how to do the normal checks on and around the buildings (D):

- 5. Identify the different mechanisms and components of the buildings.
- 6. Identify the different mechanisms and components of the different lifting systems and materials.
- 7. Be familiar with the types of vermin to be controlled on the farm.

### Before learning how to take action when important problems occur (F):

- 8. Identify the symbols that indicate the components of an electrical system on sketches.
- 9. Recognize the components of electrical distribution networks and of the generator set.
- 10. Identify the main electrical variables, such as amperage, voltage and power.
- 11. Master the basic concepts of electricity.

## MODULE 24: PRACTISING SUSTAINABLE AGRICULTURE

#### CODE: 721 421

**Duration: 15 hours** 

## FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

### EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must **practise sustainable agriculture** in accordance with the following conditions, criteria and specifications.

### CONDITIONS FOR PERFORMANCE EVALUATION

- Using models, diagrams or illustrations
- On the basis of a project in a hog production enterprise
- Using:
  - technical data concerning the firm
  - information provided by the producer
  - texts of laws and regulations adopted by the Ministère de l'Environnement
  - advice from resource persons
  - reference materials
- Following instructions

### **GENERAL PERFORMANCE CRITERIA**

- Observance of occupational health and safety rules
- Observance of environmental protection laws and regulations
- Respect for confidentiality
- Respect for the opinions and management of the hog producer
- Constant concern for objectivity

# SPECIFICATIONS OF THE EXPECTED BEHAVIOUR

- A. Describe the infrastructure of the enterprise.
- B. Analyze the situation of the enterprise.
- C. Propose a development plan.

- Full inventory of the herd
- General description of the crops
- Consideration of all elements of the infrastructure
- Accuracy of diagnostic
- Appropriateness of conclusions
- Appropriateness of proposed measures
- Feasibility of proposed measures
- Consideration of impact of proposed measures on the environment and on productivity
- Accuracy of cost calculations

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

### Before learning how to describe the infrastructure of the enterprise (A):

- 1. Be familiar with the environmental problems associated with agriculture.
- 2. Know the characteristics of drinkable water.

### Before learning how to propose a development plan (C):

- 3. Be familiar with the various methods of practising sustainable agriculture.
- 4. Know the different methods of spreading fertilizer on crops.

# **MODULE 25: JOB SEARCH TECHNIQUES**

#### CODE: 721 431

#### **Duration: 15 hours**

## FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

### **EXPECTED BEHAVIOUR**

To demonstrate the required competency, the students must **use job search techniques** in accordance with the following conditions, criteria and specifications.

### CONDITIONS FOR PERFORMANCE EVALUATION

- In a simulated situation or as part of a search for a practicum position
- Using a personal evaluation
- Using information provided by the instructor, corresponding to possible situations for farm workers
- Using models of résumés and letters of introduction
- Using reference material

### **GENERAL PERFORMANCE CRITERIA**

- Quality of oral and written communication

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE	
SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
A. Describe the steps in a dynamic job search.	<ul> <li>Inclusion of all the steps</li> <li>Logical order of steps</li> <li>Description of the important elements</li> </ul>
B. Write a résumé.	<ul> <li>Quality of the presentation of the document: <ul> <li>legibility of the text</li> <li>attractive layout of the text</li> <li>careful presentation</li> </ul> </li> <li>Quality of the content: <ul> <li>inclusion of all relevant</li> <li>information: personal</li> <li>data,schooling, personal and professional experience, etc.</li> </ul> </li> <li>Quality of the writing: <ul> <li>style, spelling and grammar</li> </ul> </li> </ul>
C. Write a job application letter.	<ul> <li>Quality of the presentation:</li> <li>appropriate typing or legible writing</li> <li>attractive text layout</li> <li>neatness</li> <li>Quality of the contents:</li> <li>relevance to the job sought</li> <li>Quality of the writing:</li> <li>style, spelling and grammar</li> </ul>
D. Be interviewed for a job.	<ul> <li>Courteous, natural attitude</li> <li>Attentive listening and clear understanding of the questions</li> <li>Clear, concise, appropriate communication</li> </ul>
E. Describe an effective follow-up technique.	<ul> <li>Inclusion of the important elements</li> <li>Description of the follow-up</li> <li>Follow-up methods</li> </ul>

# IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

#### Before learning how to describe the steps in a dynamic job search (A):

- 1. Define the concept of "dynamic job search."
- 2. Be familiar with the attitudes required for a successful job search.
- 3. Explain the different types of interviews.
- 4. Prepare for an interview.
- 5. Explain how certain behaviours and attitudes can help or hinder during an interview.

#### Before learning how to write a résumé (B):

- 6. Write a personal profile for the job search.
- 7. Define the purpose of the résumé, taking into account the advantages of its use.

#### Before learning how to be interviewed for a job (D):

8. Understand the importance of the interview in getting hired.

### Before learning how to describe an effective follow-up technique (E):

- 9. Define the role of the follow-up.
- 10. Understand whether it is appropriate to do a follow-up or not.

# MODULE 26: ENTERING THE WORK FORCE

## CODE: 721 444

## **Duration: 60 hours**

## FIRST-LEVEL OPERATIONAL OBJECTIVE SITUATIONAL OBJECTIVE

#### EXPECTED OUTCOME

By participating in the required activities of the learning context according to the indicated criteria, the students will be able to **enter the work force**.

### **SPECIFICATIONS**

During this module, the students will:

- Negotiate an agreement with the person in charge of the practicum on the farm.
- Carry out occupational activities in the workplace.
- Evaluate their integration as workers.

### LEARNING CONTEXT

### PHASE 1: Agreement with the Person in Charge of the Practicum

- Analyzing the evaluation of the first practicum, *Introduction to the Practice of the Trade*, and modifying, if necessary, the rules of conduct for the current practicum.
- Negotiating and signing the agreement with the person in charge of the practicum on the farm.

## FIRST-LEVEL OPERATIONAL OBJECTIVE SITUATIONAL OBJECTIVE

### LEARNING CONTEXT

### PHASE 2: Entering the Work Force

- Carrying out occupational tasks and participating in activities that are characteristic of a farm.
- Producing a report on their observations of the work context and the tasks carried out by the business.
- Participating in the evaluation of the practicum with the teacher and the supervisor on the farm.

# PHASE 3: Comparison of Perceptions of the Trade with Their Aptitudes and Areas of Interest

- Noting aspects of the trade that differ from the training received or the perception they had of the trade.
- Discussing the accuracy of their perception of the trade.
- Noting aspects of the trade that differ from their aptitudes, preferences and areas of interest.
- Discussing the implications of the experience for their choice of a future job.

### INSTRUCTIONAL GUIDELINES

The teacher should:

- Provide the students with a student practicum guide and tables for recording information.
- Ensure that the person responsible for the student trainee on the farm understands clearly the objectives of the practicum.
- Ensure that there is constant supervision of the students by a responsible person on the farm.
- Provide guidance for the students.
- Take action in cases of difficulties or problems.
- Provide students with the means to ease their integration into the work force.

## FIRST-LEVEL OPERATIONAL OBJECTIVE SITUATIONAL OBJECTIVE

- Enable the students to observe, participate in and carry out occupational activities.
- Ensure that the person in charge of the practicum on the farm writes a practicum report on the student trainee.
- Ensure that the student trainee writes a practicum report on the person in charge of the practicum on the farm.
- Maintain close cooperation between the school and the farm that is receiving the student.

### PARTICIPATION CRITERIA

PHASE 1:

- Establish the rules of conduct with the person in charge of the practicum.
- Write and negotiate the terms of an agreement with the person in charge of the practicum.

#### PHASE 2:

- Respect the habits of the farm.
- Respect the restrictions and requirements with regard to certain activities and the use of equipment and machinery as a student trainee.
- Respect the working hours and policies of the farm when doing work.
- Participate actively in the activities of the farm.
- Show an ongoing interest throughout the practicum.
- Keep a log of their participation in the occupational activities, their observations on the working context, and their thoughts, areas of interest and aptitudes in carrying out the tasks of an agricultural business.
- Evaluate themselves as future workers, on the basis of the training received.
- Participate in the evaluation of the practicum with the teacher and the person in charge of the student on the farm.
- Explain to the teacher their perception of themselves as workers using the evaluation report supplied by the person responsible for the practicum.

### PHASE 3:

- Note the aspects of the trade that differ from the training received or the perception that they had of the trade.
- Discuss the accuracy of their perception of the trade.
- Note aspects of the trade that differ from their aptitudes, preferences and areas of interest.
- Discuss the implications of the experience for their choice of a future job.

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

### Before undertaking any of the activities:

1. Understand the competency to be developed and the suggested training process.

### Before undertaking the activities of Phase 1:

2. Write a personal evaluation of the first practicum: *Introduction to the Practice of the Trade*.

#### Before undertaking the activities of Phase 2:

- 3. Be familiar with the elements to be recorded during the practicum.
- 4. Describe the method of observation.
- 5. Determine how to note their observations.
- 6. Describe the main components of a report.
- 7. Explain the stages in a self-evaluation process.

### Before undertaking the activities of Phase 3:

8. List the perceptions to be checked.

Éducation



17-0207-01A