

Pork Production Technician Level 1

Pork Production Technician

Unit: A1 Orientation I: Structure and Scope of Pork Production Technician

Level: One

Duration: 10 hours

Theory: 10 hours

Practical: 0 hours

Overview:

Jobsite learning and teaching have long been fundamental to Pork Production Technician trade-practice, including its safety, health, and environmental implications. The chance to gain maximum benefit from workplace trade learning can be shaped by such complex factors as production schedules and jobsite politics. As adult trade-learners, Pork Production Technician apprentices at all levels of skill-development are encouraged to use their eyes, ears, prior knowledge, and interpersonal skills to encourage journeypersons to teach as well as to supervise them. This requires understanding the trade's dynamics, including the roles and responsibilities that order jobsite activity. Unit content outlines the trade's skill-requirements and long-term career possibilities. It includes suggestions about trade-related learning styles/strategies. It also introduces the concept of skills stewardship, stressing the obligations that trainees incur in learning from journeypersons to 'pay it forward' by assisting other newcomers who will follow them into the trade. The unit's purpose is to provide this essential information about learning to learn as a Manitoba Skilled Labourer trainee. Elsewhere in Technical Training, senior trainees explore the importance of learning to teach in trade workplaces – a central function of Skilled Labourer journeywork.

This unit of instruction is designed to give an overview of how the pork production industry is structured in Manitoba. The apprentice will follow the pig from conception to consumption and learn the roles and responsibilities of the pork production technician. In order to work effectively, it is important for the pork production technician to be familiar with the entire industry and to recognize the key role this trade holds within the industry.

Objectives and Content:	<u>Percent of Unit Mark (%)</u>
1. Describe the structure and scope of the trade.	34%
a. Historical background, including trainee experiences	
b. Structure/scope of the trade	
• International and national characteristics	
• Important features of practicing the trade in Manitoba	
• Trade and construction industry organizations	
c. Historical background, including trainee experiences	
• Generalists and specialists	
• Lead hands and other immediate supervisors	
• Geographic mobility	
• Job hierarchies and innovations	
d. Terms used in pork production	
• Definitions of barn terms	
• Definition of industry terms	

- e. Pig production cycle overview
 - Diagram – production stages
 - Types of pork production facilities
 - Key events
- f. Organizational structure within industry
 - Business structure
 - Resources
 - Marketing options

2. Describe the Manitoba Pork Production Technician Apprenticeship Program. 33%

- a. Concept and significance of skills stewardship
 - To the trade
 - To trainees
 - To journeypersons
 - To employers
- b. Practical Training: on-site component of program
 - Roles/responsibilities of employer and journeyperson(s)
 - Roles/responsibilities of Training Coordinator
 - Roles/responsibilities of trainee, including record-keeping re: job experience
- c. Technical Training: off-site component of program
 - Roles/responsibilities of instructors (including Related'-area faculty)
 - Roles/responsibilities of trainees: occupational analysis, task checklist, list of key tasks by area
- d. Attendance requirements
- e. Progression requirements
- f. Reporting of grades
- g. Other (as may be specified by instructor and by Apprenticeship Manitoba)

3. Describe special opportunities and challenges re: Skilled Labourer training. 33%

- a. Adapting personal learning goals to program contexts
 - Principles of adult learning (including importance of self-direction)
 - Description/recognition of learning and teaching styles
 - Significance of work culture and interpersonal skills re: trade-learning
 - Integrating Technical Training and Practical Training content
 - Possibilities and perils of peer learning
 - Budgeting and other necessary personal arrangements
 - Identifying sources of support (e.g. upgrading trade-related math skills)
- b. On-site learning challenges and opportunities
 - Significance of jobsite supervision roles and teaching styles (e.g. journey-level skills-coach vs. mentor)
 - Communication with journeypersons and employers
 - Coverage of prescribed tasks/subtasks that define the scope of trade, and the content of the certification exam administered to apprentices who are completing their program
 - Getting help and fixing mistakes
 - Maintaining personal record of trade-learning challenges/achievements (e.g. a learning journal, and/or a personal training plan, if possible, discussed with employers and others supporting the apprenticeship journey to certification)
 - Significance of jobsite supervision roles and teaching styles (e.g. journey-level skills-coach vs. mentor)
 - Communication with journeypersons and employers
- c. In-school opportunities/challenges
 - Personal arrangements that support progress in Technical Training

- “Baggage-handling” – self-assessing potential impacts of previous experiences (favourable/unfavourable) on current learning; availability of supports
- Techniques for note-taking, record-keeping, and review
- Relations with instructors (including ‘Related’-area faculty)
- College resources (library, support services, etc.)

Pork Production Technician

Unit: A3 Trade Safety Awareness

Level: One

Duration: 20 hours

Theory: 20 hours

Practical: 0 hours

Overview:

Safe working procedures and conditions, injury prevention, and the preservation of health are of primary importance to industry in Canada. These responsibilities are shared and require the joint efforts of government, employers, and employees. It is imperative that all parties become aware of circumstances that may lead to injury or harm. Safe learning experiences and environments can be created by controlling the variables and behaviours that may contribute to incidents or injury. It is generally recognized that safety-conscious attitudes and work practices contribute to a healthy, safe, and accident-free working environment. It is imperative to apply and be familiar with the Workplace Safety and Health Act and Regulations. As well, it's essential to determine workplace hazards and take measures to protect oneself, co-workers, the public, and the environment. Safety education is an integral part of Insulator apprenticeship training both in school and on-the-job. Unit content is supplemented throughout Technical Training by trade-specific information about Insulator safety hazards and precautions presented in the appropriate contexts of discussion and study. **Note: No percentage-weightings for test purposes are prescribed for this unit's objectives. Instead, a 'Pass/Fail' grade will be recorded for the unit in its entirety.**

Objectives and Content:

**Percent of
Unit Mark (%)**

1. Identify safety and health requirements.

- a. Overview of The Workplace Safety and Health Act
 - Rights and responsibilities of employees under the Act
 - Rights and responsibilities of employers under the Act
 - Rights and responsibilities of supervisors under the Act
- b. Fourteen (14) regulations
- c. Codes of practice
- d. Guidelines
- e. Right to refuse
 - Explanation of right to refuse process
 - Rights and responsibilities of employees
 - Rights and responsibilities of employers
 - Rights and responsibilities of supervisors under the Act

2. Identify personal protective equipment (PPE) and procedures.

- a. Employer and employee responsibilities as related to personal protective equipment.
- b. Standards: ANSI (U.S.A. standards), etc.
- c. Work protective clothing and danger if it fits poorly.
- d. Gloves – Importance of proper glove selection (when handling chemicals, cold items, slivers, etc.)

- e. Headwear – appropriate protective headwear when required and the approved type of headwear.
- f. Eye protection – comparison and distinction of everyday eyeglasses, industrial safety glasses and safety goggles
- g. Foot protection – when required according to safety standards
- h. Hearing protection
 - Hazards of various noise levels (hearing protection must be worn)
 - Laws
 - Types of hearing protection
- i. Respiratory protection – types, overview of proper selection
- j. Fall protection – Manitoba requirements standards guidelines
 - ANSI (U.S.A. standards), etc.
- k. Ladders and scaffolding
- l. Safety principles for working with or around industrial trucks site-specific (forklifts, pallet trucks, etc.)

3. Identify regulations pertinent to care and cleanliness in the working area.

4. Identify the regulations relevant to the safe use of chemicals.

5. Identify regulations governing the use of scaffolding.

6. Identify regulations governing the use of ladders and related equipment.

7. Identify ergonomics.

- a. Definition of ergonomics and conditions that may affect the body
 - Working postures
 - Repetition
 - Force
 - Lifting
 - Tools
 - Identify tool and safety equipment
 - Causes of hand tool accidents
 - equipment

8. Hazard recognition and control.

- a. Safe work practices
- b. Basic risk assessment
- c. Injury prevention and control measures
- d. Identification of hazards involved in pneumatic tool use and explanation of how to guard against them
- e. Refrigerants
- f. Toxic chemical (non-refrigerant)
- g. High pressure fluids

9. Hazard of confined space entry.

- a. Identification of a confined space
- b. Hazards of a confined space
 - physical
 - biological
- c. Working in a confined space
- d. Emergency response plan
- e. Self-contained breathing apparatus (SCBA)

- 10. Identify first aid/CPR.**
- a. Overview of first aid regulation
 - b. Obligations of employers regarding first aid
 - Who is certified to provide first aid?
 - What to do while waiting for help?
 - Where is first aid kit?
 - c. Describe basic first aid requirements and techniques
 - Scope and limits of first aid intervention
 - Specific interventions (cuts, burns, abrasions, fractures, suffocation, shock, electrical shock, etc.)
 - What is it?
 - Interface with other services and agencies (eg. Workers Compensation claims)
 - d. Describe basic CPR requirements and techniques
 - How do you get certified?
 - Scope and limits of CPR intervention (include varieties of CPR certification)
- 11. Identify the current safety requirements as they apply to WHMIS with emphasis on:**
- a. WHMIS is a system
 - b. Provincial regulation under the Safety and Health Act
 - Each province has a WHMIS regulation
 - c. Federal Hazardous Products Act
 - d. WHMIS generic training:
 - WHMIS defined and the format used to convey information about hazardous materials in the workplace
 - Information found on supplier and workplace labeling using WHMIS
 - Hazardous materials in accordance with WHMIS
 - Compliance with government safety standards and regulations
 - e. Description of WHMIS (include varieties of WHMIS Certification)
 - Typology of WHMIS labels, symbols, and classifications
 - Scope and use of Materials Safety Data Sheets (MSDS)
- 12. Identifying and controlling hazards.**
- a. Basic control measures (injury prevention)
 - b. Safe work procedures
 - c. Explanation on the importance of industrial housekeeping
 - d. Employer responsibilities
 - e. How and where to store materials
 - f. Safety measures related to walkways, stairs and floor openings
 - g. Explanation of how to protect the worker and others when working in traffic paths
- 13. Describe the safe storage of stock equipment in service vehicles.**
- 14. Discuss transportation of dangerous goods.**

Pork Production Technician

Unit: A4 Health and Safety in the Pork Production Unit

Level: One

Duration: 25 hours

Theory: 20 hours

Practical: 5 hours

Overview:

This unit of instruction is designed to provide the apprentice with the understanding of safe work habits and policies in a barn. Also, apprentices will gain knowledge of potential hazards such as dust and toxic gases and working in confined spaces. As the pork production industry requires workers who are safety conscience, this unit will provide training to be aware of safety issues.

Objectives and Content:	<u>Percent of Unit Mark (%)</u>
1. Describe basic safety practices.	15%
a. Fire prevention and control	
• Fire triangle	
• Classes of fires	
• Fire extinguishers	
b. Barn inspections	
2. Describe potential hazards in a pork production unit	50%
a. Classes of hazards	
b. Storage and handling of flammable materials	
c. Personal health risks when handling animal health products and equipment	
d. Disease transmission	
• Protective equipment	
e. Carcass disposal	
• Moving/lifting	
• Handling	
f. Animal handling	
• Equipment	
h. Water failure or burst	
• Main valve	
• Stand-by pump	
i. Dust and toxic gases	
• Protective equipment	
• H2S awareness	
j. New technologies and practices	
• Needle-less injections	

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| 3. Recognize the principles of confined space entry | 10% |
| a. Hazards of a confined space | |
| b. Assisting certified confined-space entry personnel | |
| c. Emergency response plan | |
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| 4. Demonstrates awareness of and practices safety and personal protection. | 25% |

Pork Production Technician

Unit: B1 Basic Stockmanship

Level: One

Duration: 40 hours

Theory: 36 hours

Practical: 4 hours

Overview:

This unit of instruction examines the genetic and environmental causes of pig behavior and teaches the technician to recognize signs of normal and abnormal behavior. Other topics explored will be pig handling methods, environmental needs of the pig, and attitudes towards animal welfare. The understanding and skills of basic stockmanship are essential to the apprentice and will provide background and purpose for all other units in the technical training of this trade.

Objectives and Content:	Percent of Unit Mark (%)
1. Describe and identify pig behavior. a. Domestication and genetic influences b. Environmental influences c. Normal vs. abnormal behaviour d. Pig signals	25%
2. Examine pig handling concepts and techniques. a. Pig handling <ul style="list-style-type: none"> • Pregnant sows • piglets • Boars b. Shipping and receiving c. Equipment for moving pigs d. Pig groups	25%
3. Describe the animal's environmental needs. a. Thermal comfort zone b. Heat and cold stress c. Other environmental factors	20%
4. Define animal welfare issues. a. Differences between animal welfare and animal rights b. Attitudes towards animal welfare c. Recommended code of practice	30%

Pork Production Technician

Unit: B2 Pig Anatomy and Physiology

Level: One

Duration: 14 hours

Theory: 14 hours

Practical: 0 hours

Overview:

This unit of instruction will examine the body systems of pigs and how these systems work. The apprentice will learn how a pig's body functions and grows, and how to recognize the characteristics of a healthy pig and an unhealthy pig.

Objectives and Content:	<u>Percent of Unit Mark (%)</u>
1. Describe parts of a pig. a. Monogastric animal b. Identify parts of body systems	30%
2. Describe how pigs' body systems function. a. Circulatory b. Digestive a. Endocrine b. Immune a. Muscular b. Nervous a. Reproductive b. Respiratory a. Sensory b. skeletal a. Urinary	30%
3. Describe the characteristics of healthy and unhealthy pigs. a. Posture and behaviour b. Physical signs	40%

Pork Production Technician

Unit: B3 Breeding/Gestation

Level: One

Duration: 37 hours

Theory: 27 hours

Practical: 10 hours

Overview:

This unit of instruction deals with caring for the breeding herd. The apprentice will study the following areas: nutrition, reproductive anatomy and physiology, the estrus cycle, use of breeding groups, sound breeding practices and care of gestation sow. Additionally, this unit will include a section on how environmental conditions can impact reproductive performance.

Objectives and Content:	<u>Percent of Unit Mark (%)</u>
<p>1. Describe reproductive anatomy and physiology of boar and sow</p> <p>a. Puberty</p> <ul style="list-style-type: none"> • Definition • Age <p>b. Estrus cycle</p> <ul style="list-style-type: none"> • Stages 	10%
<p>2. Determine sow/gilt in heat</p> <p>a. Physical signs of estrus</p> <p>b. Heat detection procedures</p> <ul style="list-style-type: none"> • Boar exposure • Back pressure test 	20%
<p>3. Determine breeding groups</p> <p>a. Breeding targets</p> <p>b. Physical soundness of gilts/sows</p> <ul style="list-style-type: none"> • Legs • Teats <p>c. Culling criteria</p> <ul style="list-style-type: none"> • Age/parity • Pervious performance • Soundness <p>d. Use and requirements for gilts pools</p> <ul style="list-style-type: none"> • Replacements <p>e. Use of hormones to regulate cycles.</p>	10%

- 4. Co-ordinate breeding** **10%**
- a. Daily routine in breeding barn
 - Tasks
 - Prioritizing
 - b. Selecting breeding pairs
 - Comparable size
 - Genetic background
 - Sow preference
 - c. Courtship behaviour
 - Nosing
 - Mounting
 - d. Boar usage
 - Frequency
 - e. Breeding schedule
 - Production flow
- 5. Maintain facility requirements for breeding and gestation barn** **10%**
- a. Space requirements
 - Sows
 - Boars
 - Breeding pen
 - b. Air quality and temperature
 - c. Environmental conditions impact on reproductive performance
 - Heat stress
 - Cold stress
 - d. Breeding pen design
 - Size
 - Shape
 - Floor
 - Location
- 6. Describe the breeding process** **10%**
- a. Natural matings
 - Assisted or not
 - Duration
 - b. A.I. equipment and procedures
 - Semen
 - Pipette
 - c. Breeding success
- 7. Monitor pregnancy** **10%**
- a. Heat and pregnancy checks
 - Timing
 - Importance
 - b. Ultrasound principles and equipment use
 - c. Pregnancy failure signs
- 8. Describe nutritional requirements of the breeding herd** **10%**
- a. Nutrient requirement affects on growth and development
 - Stages of growth
 - b. Water requirements
 - Rate

- c. Principles of body condition score
 - Purpose/importance
 - How to measure
 - Back-fat testing
 - Implication for feeding
- d. Feeding strategies
 - Goals for each stage

9. Demonstrates correct heat detection and artificial insemination procedures. 10%

Pork Production Technician

Unit: B4 Farrowing

Level: One

Duration: 37 hours

Theory: 27 hours

Practical: 10 hours

Overview:

This unit of instruction deals with caring for animals in the farrowing barn. Caring for the sow and her piglets will be discussed in detail focusing on principles associated with farrowing, fostering and weaning. The nutritional requirements of the sows during this key phase of the reproductive cycle will be included in this unit. The apprentice will also examine the causes and reduction of pre-weaning mortality.

Objectives and Content:

**Percent of
Unit Mark (%)**

1. Establish how to care for sows in the farrowing barn.

15%

- a. Room preparation requirements
 - Temperature
 - Supplemental heat source
- b. Visual signs of sow beginning the farrowing process
 - Behaviour
 - Physical signs
- c. Farrowing process
 - Duration
 - Normal vs. abnormal
- d. Farrowing intervention techniques and procedures
 - Inducing
 - Assisting
 - Oxytocin use
- e. Lactation length
 - Long vs. short
 - Implication on sow management
- f. Physiology of lactating sows

2. Establish how to care for and process pigs

15%

- a. Post-natal care procedures
 - Attended farrowing
- b. Piglet environmental needs
 - Temperature
 - Air
- c. New born piglet behaviour
- d. Colostrum requirements

- Importance
 - Function of colostrums intake
 - e. Teat selection
 - f. Sow's rearing ability
 - Milk production
 - Number of teats
 - Udder conformation
 - g. Handling piglets
 - h. Piglet processing procedures and techniques
 - i. Piglet processing tools
- 3. Define fostering principles and protocols 15%**
- a. Sow's rearing ability and corresponding piglet needs
 - Number of functional teats vs. number of pigs
 - Milk production
 - Sow health
 - Size/age of pigs
 - b. Piggy deck use
 - Grouping
 - c. Purpose of nurse sows
 - Methods of use
- 4. Describe the methods for reducing pre-weaning mortalities. 15%**
- a. Understanding still births
 - b. Causes of pre-weaning mortalities
- 5. Describe the weaning principles and procedures for piglets and sows 15%**
- a. Specific work requirements on weaning day
 - b. Piglet selection for weaning
 - Age
 - Weight
 - c. Weighing piglets
 - d. Moving piglets
 - Equipment
 - e. Pig flow schedules
 - f. Physiology of weaned sows
 - g. Moving weaned sows
 - Equipment
- 6. Describe nutritional requirements of sows 15%**
- a. Digestive system of the pig
 - b. Requirements for growth and development
 - c. Feed allowance
 - d. Feeding strategies
 - e. Water requirements
- 7. Demonstrate correct farrowing techniques. 10%**

Pork Production Technician

Unit: C1 Biosecurity

Level: One

Duration: 7

Theory: 6 hours

Practical: 1 hours

Overview:

This unit of instruction is designed to provide the pork production technician with the knowledge and understanding of biosecurity practices and procedures for the pork production facility and the importance of biosecurity as one of the key elements for preserving the health status of a herd.

Objectives and Content:	<u>Percent of Unit Mark (%)</u>
<p>1. Identify the importance of biosecurity</p> <ul style="list-style-type: none"> a. Biosecurity issues <ul style="list-style-type: none"> • Health status • Costs of disease b. General practices and procedures <ul style="list-style-type: none"> • Barn protocol • Employee responsibility 	25%
<p>2. Describe the causes of disease transfer and components of disease control</p> <ul style="list-style-type: none"> a. Disease transfer <ul style="list-style-type: none"> • Vectors b. Acclimatization and immunity <ul style="list-style-type: none"> • Time for establishment • Passive vs. active c. Disease control <ul style="list-style-type: none"> • Importance • Prevention vs. treatment • Industry procedures (eg. AIAO and SEW) 	25%
<p>3. Determine procedures associated with transporting, shipping and receiving of pigs</p> <ul style="list-style-type: none"> a. Receiving b. Shipping c. Transportation d. Quarantine procedures <ul style="list-style-type: none"> • Duration • Staff requirements 	20%

4. **Describe the importance of sanitation and housekeeping as related to biosecurity** 25%
- a. Sanitation requirements
 - b. Purpose and use of cleaning products and disinfectants
 - c. Prepare room for washing
 - d. Systematic washing procedures
5. **Demonstrate correct sanitation practices.** 5%
