

SECTION 4 NATIONAL ASSESSMENT AND CERTIFICATION ARRANGEMENTS

- 4.1. To attain the National Qualification of **Agricultural Crops Production NC III**, the candidate must demonstrate competence through project type assessment covering all the units listed in Section 1. Successful candidates shall be awarded a National Certificate signed by the TESDA Director General.
- 4.2. The qualification of Agricultural Crops Production NC III may be attained through:
 - 4.2.1. Accumulation of Certificates of Competency (COCs) in the following areas:
 - 4.2.1.1 Prepare land for agricultural crop production
 - 4.2.1.2 Implement post-harvest program
 - 4.2.1.3 Implement plant nutrition program
 - 4.2.1.4 Control weeds
 - 4.2.1.5 Prepare and apply chemicals
 - 4.2.1.6 Establish agronomic crops
 - 4.2.1.7 Undertake agronomic crop maintenance program
 - 4.2.1.8 Undertake agronomic crop harvesting activities
 - 4.2.1.9 Save, prepare and store agricultural seed
 - 4.2.2.0 Implement vertebrate pest control program

Successful candidates shall be awarded Certificates of Competency (COCs)
- 4.3. Upon accumulation and submission of all COCs acquired for the relevant units of competency comprising a qualification, an individual shall be issued the corresponding National Certificate.
- 4.4. Assessment shall focus on the core units of competency. The basic and common units shall be integrated or assessed concurrently with the core units.
- 4.5. Elective units may be selected from the list below depending on workplace requirements and / or specialization. To increase flexibility and enhance employability, elective units of competency may also be chosen from any other promulgated Training Regulations at the same NC level or one level higher (NC IV), including Agricultural Crops Production NC IV. Certificates of Competency shall be issued for each additional unit undertaken. The candidate however may be awarded the qualification of Agricultural Crops Production NC III based on the accumulation of core units as specified in **4.2.1.**, even without these electives :

- 4.5.1. Follow site quarantine procedures
- 4.5.2. Collect samples for a rural production or horticultural monitoring program
- 4.5.3. Handle bulk materials in storage area
- 4.5.4. Prepare grain storages
- 4.5.5. Comply with industry quality assurance requirements
- 4.5.6. Maintain and monitor environmental work practices
- 4.5.7. Keep records for farm business
- 4.5.8. Perform specialized machinery maintenance
- 4.5.9. Install irrigation system

4.5 The following are qualified to apply for assessment and certification:

- 4.5.1 Graduates of formal, non-formal and informal including enterprise-based training programs.
- 4.5.2. Experienced workers (wage employed or self-employed)

4.6 The guidelines on assessment and certification are discussed in detail in the Procedures manual on Assessment and Certification and Guidelines on the implementation of the Philippine TVET Qualification and Certification System (PTQCS).

COMPETENCY MAP FOR AGRI-FISHERY SECTOR
AGRICULTURAL CROPS PRODUCTION SUB-SECTOR

CORE UNITS OF COMPETENCY				
Supervise agronomic crop maintenance	Produce fruit bearing crops	Undertake agronomical crop maintenance activities	Implement vertebrate pest control program	Implement a plant establishment program
Maintain the workplace	Perform post harvest operations of major tropical fruits	Undertake agronomic crop harvesting activities	Establish agronomic crops	Transport, handle and store chemicals
Support agronomic crop work	Perform post harvest operation of major lowland and semi-temperate vegetable crops	Save, prepare and store agricultural seed	Collect samples for a rural production of horticulture monitoring program	Supervise agricultural crop establishment
Support horticultural crop work	Prepare land for agricultural crop production	Undertake field budding and grafting	Save, prepare and store agricultural seed	Implement and monitor quality assurance procedures
Support irrigation work	Prepare and apply chemicals	Keep records for a farm business	Undertake agronomic crop maintenance activities	Support and review business structures and relationships
Support nursery work	Implement a plant nutrition program	Monitor and operate water treatment processes	Coordinate machinery and equipment maintenance and repair for agricultural crops	Promote plant health
Conduct pre-horticultural farm operations	Control weeds	Comply with industry quality assurance requirements	Operate pertigation equipment	Implement and monitor a property improvement plan
Produce vegetables	Implement a post-harvest program	Transport farm produce or bulk materials	Operate within a budget framework	Supervise maintenance of machinery and equipment
Plan & implement a chemical use program	Establish agronomic crops	Supervise horticultural crop harvesting	Plan a propagation program	Develop a horticultural crop maintenance program
Apply basic first aid	Implement vertebrate pest control program	Control weeds, pests and /or diseases in crops	Supervise agronomic crop harvesting	Analyze and interpret production data

Continuation Competency Map for Agri Fishery Sector (Agricultural Crops Sub-Sector)

COMMON UNITS OF COMPETENCY

Apply safety measures in farm operations

Use farm tools and equipment

Perform estimation and calculation

Apply basic first aid

BASIC UNITS OF COMPETENCY

Receive and Respond to Workplace Communication	Participate in Workplace Communication	Lead Workplace Communication	Use relevant technologies	Develop Team and Individual
Work With Others	Work in a Team Environment	Lead Small Team	Solve problems related to work activities	Apply Problem Solving Techniques in the Workplace
Practice basic housekeeping procedures	Demonstrate work values	Develop and practice negotiation skills	Use mathematical concepts and techniques	Plan and Organize Work

Agricultural Crops Production NC III

DEFINITION OF TERMS

For the purpose of this standard, the word

- **Aflatoxin** – the toxin produced by some strains of the fungi *ASPERGILUS FLAVUS* and *ASPERGILUS PARASTICUS*; the most potent carcinogen yet discovered.
- **Ambient condition**– ordinary room temperature and relative humidity.
- **Ambient air** – the surrounding air (atmospheric).
- **Ambient storage** – any treatment or practice extending post harvest life of harvested commodity beyond that of similar commodity held under ambient conditions without treatment.
- **Airflow rate** – the amount of air passing through an obstruction per unit of time.
- **ACIAR** – Australian Center for International Agricultural Research
- **AFHB** – ASEAN Food Handling Bureau
- **BPRE** – Bureau of Post harvest Research & Extension
- **Curing** – process of toughening and self-healing of bruises and skinned areas in root and tuber crops or the rapid closing of the neck of bulb crops under favourable conditions
- **Driller** – a machine for sowing in furrows
- **Drip Irrigation** – application of water through small tubes and orifices or emitters which discharge small quantity of water to the base of the plant

- **Dry-bulb temperature** – the temperature of air indicated by a standard temperature
- **Equilibrium moisture content** – the moisture content at which moisture in a product is in equilibrium with the surrounding air. The product does not gain or loss moisture.
- **Fogging** – to cover or envelope with fog
- **Foliar Fertilizer** – fertilizer formulation containing nitrogen, phosphorous and potassium plus selected micronutrient element such as (Ca, Mg, Mn, Fe, Zn, Cl, B, Cu, S) applied by spraying on the leaves
- **Fumigant** – a chemical compound which acts in the gaseous state to destroy insects and their larvae.
- **Fumigation** – the process of treating stored products with insecticides/pesticides and the like in fumes or vapor form.
- **Furrow Irrigation** – a method of supplying water through a canal system wherein water flows down or across the slope of the field
- **Furrowing** – final step in land preparation by making furrows or beds for planting
- **GATT** – General Agreement on Tariff and Trade
- **Grading** – the process of classifying into groups according to a set of recognized criteria of quality and size, each group bearing an accepted name and size grouping.
- **Growing Medium** – mixture of different materials such as soil, sand, compost, coir dust, rice hull, perlite, peat, etc. for growing seedlings
- **HACCP** – Hazard Analysis Critical Control Points

- **Hardening** – the process of gradually withholding water and exposing to direct sunlight to prevent seedlings from transplanting stress/shock
- **Harrowing** – breaking of large soil clods that are caused by plowing
- **Hilling-Up** – the process of covering the applied fertilizer material by raising the soil towards the base of the plant to further stabilize its stand for better plant growth.
- **Hygrometer** – an instrument that measures humidity.
- **Insect pest** – a destructive or harmful insect.
- **Irrigation** - any method of supplying water to sustain plant growth
- **Off-Baring**- process of cultivating the soil away from the base of the plants
- **Pricking-Off**- methods of transferring of seedling to avoid overcrowding
- **Larvae** – the first stage of the life cycle of insects after leaving the egg.
- **Manometer** – an instrument that measures air pressure.
- **Maturity** – the quality or state of ripeness, or of being fully developed grain.
- **Maturity index** – signs or indications that a commodity is mature and is ready to be harvested.
- **Moisture content** – the conventional index used to determine whether the seed is dry enough for safe storage or for milling usually expressed in percent (% M.C.).

- **Molds** – superficial often woolly growth produced on various forms of organic matter, especially when damp or decaying.
- **NFA** – National Food Authority
- **Packaging** – technology or process to ensure adequate protection and safe delivery of a product from the producer to the ultimate consumer.
- **Packing** – act of putting commodities in a container.
- **Packinghouse** – place where the preparatory steps for storage or marketing are done.
- **Pallet** – low portable platform made of wood or metal or in combination to facilitate handling, storage or transport of materials as a unit load using forklift.
- **Perishables** – food crops for which value and/or quality is maintained over a short period of time after harvest. These include fruits, vegetables, flowers, young coconut, nursery stocks and some staple root crops such as sweet potato, cassava and yam.
- **Postharvest disease** – disease observed after harvest regardless of when or where initial infestation took place.
- **Post harvest handling** – specific term used for the movement of commodities and operations through which a commodity undergoes from harvest to possession of the final consumer, includes the technological aspects of marketing and distribution.
- **Post harvest infection** – infection that takes place after harvest.
- **Post harvest life** – period of time during which a commodity is still acceptable for its intended purpose.

- **Pre cooling** – strictly, it means the rapid cooling (48 hours or less) of a commodity to a desired transit or storage temperature soon after harvest before it is stored or moved in transit.
- **Pupa** – an intermediate stage of an insect that preys on one or more plants and animals that man wishes to preserve for his own use.
- **Refrigeration** – process of removing heat from a compartment or substance so that temperature is lowered and then maintained at a desirable level, usually refers to refrigeration by mechanical means.
- **Relative humidity** – the actual vapor pressure of the air relative to saturation.
- **Respiration** – biological process by which organic materials are broken down to simpler forms accompanied by the release of energy and heat.
- **Ripening** – the state of development of a fruit when it becomes soft and edible applies strictly to climacteric type fruit.
- **Rodents** – refer to rats and mice which destroy grains and other stored products.
- **Senescence** – final phase in the life of an organ in which a series of normally irreversible events are initiated leading to cellular breakdown or death of the organ.
- **Side-Dress Fertilizer** – additional amount of any fertilizer materials applied at the onset of flowering to complete the nutritional requirement of the crop
- **Sprinkler Irrigation** – a mechanical method of supplying water over the standing crop by means of a nozzle which is rotated by water pressure
- **Synthetic Mulch** – mulching materials made either of polyethylene or non-woven fabric

- **Sorting** – the process of classifying into groups designated by the person classifying crops or commodities the produce either according to a set criteria.
- **Standard** – the set of criteria and specifications of quality determining the grades, described as product characteristics such as maturity, color, cleanliness, shape, free from decay and blemishes and uniformity of size.
- **Storage** – process of keeping horticultural crops in a structure designed to protect the stored products from inclement weather and pests for a short or long period of time to await processing or movement to other location.
- **Storage life** – the longest time produce can be kept in a sound marketable condition.
- **Tachometer** – an instrument that measures revolutions per minute
- **Tillage** – the mechanical manipulation of the soil
- **Transplants** – vegetable seedlings produced for transplanting
- **Trellis** – a support structure for viny crops and can either be T, I, Y, A shaped
- **Velometer** – an instrument that measures velocity of air flow
- **Waxing** – application of a thin film of surface coating to fruits and vegetables.
- **Wet-bulb temperature** – temperature of moist air indicated by a thermometer whose bulb is covered with a moist wick which the air flow passing over has a velocity of 15 ft per second.

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