

# CITRUS PRODUCTION

Competency Standards

National Vocational  
Certificate Level 2

Version 1 - January 2014



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# Competency Standard Citrus Processing

## Module A: Citrus Receiving and Record Keeping at Factory

**Overview:** These competency standards will ensure that the trainee will be able to carry out citrus handling including loading in processing unit for washing, waxing, grading and storage for indoor worker of citrus industry

Competency Unit	Performance Criteria	Knowledge and Understanding
<p><b>A1:</b> Unloading of Citrus</p>	<p><b>P1:</b> Perform post-harvest handling of citrus fruit at unloading premises of processing unit according to industry processes</p> <p><b>P2:</b> Understand personal hygiene guidelines and work instructions for labour involved in unloading areas</p> <p><b>P3:</b> Identify the uniforms and changing rooms for processing unit labour</p> <p><b>P4:</b> Arrange standard decking for unloading of citrus according to industry standards</p> <p><b>P5:</b> Demonstrate unloading of fruit at unloading and decking following industry specified product handling standards and guidelines</p> <p><b>P6:</b> Demonstrate safe parking arrangements of loaded vehicles near to the unloading decking</p> <p><b>P7:</b> Prepare scheme and install rodent control program according to industry standards</p> <p><b>P8:</b> Demonstrate temporary storage at receiving fruit area according to industry standard practice</p>	<p><b>K1:</b> Describe citrus fruit quality standards for export markets</p> <p><b>K2:</b> Explain the Global GAP/ organic certified citrus product standards</p> <p><b>K3:</b> Describe industry personal hygiene and food safety measures that must be used in post-farm handling</p>

	<p><b>P9:</b> Demonstrate storage / stacking according to industry specifications for Global GAP and Organic certified and Non certified products</p> <p><b>P10:</b> Establish well defined rodent control program in unloading premises</p> <p><b>P11:</b> Stock fruit baskets based on market requirements.</p>	
<b>A2:</b> Perform Counting of Citrus Baskets	<p><b>P1:</b> Perform the stacking of baskets received from farm according to industry specifications</p> <p><b>P:2</b> Arrange temporary storage of citrus baskets based on grades according to industry specifications</p> <p><b>P3:</b> Demonstrate the processes to verify the document collected from farm supervisor or supplier against the actual received supply</p> <p><b>P4:</b> Demonstrate and observe the food safety guidelines at this step.</p> <p><b>P5:</b> Demonstrate procedures for recording of farm based citrus baskets and their counting</p>	<p><b>K1:</b> Explain the environment required for citrus temporary storage</p> <p><b>K2:</b> Explain the relevant food safety guidelines</p>
<b>A3:</b> Ensure Quality and Labeling	<p><b>P1:</b> Observe quality standards and complying export requirements</p> <p><b>P2:</b> Develop quality inspection sheet that complies with industry standards</p> <p><b>P3:</b> Demonstrate labeling procedure and label the citrus fruit based on industry defined physicochemical characteristics</p>	<p><b>K1:</b> Explain of citrus fruit quality standards complying SPS protocols and export markets needs</p> <p><b>K2:</b> Explain of the physicochemical characteristics of citrus fruit</p>

	<p><b>P4:</b> Stake / temporarily store fruit based on standard grades and picking times and quality characteristics</p> <p><b>P5:</b> Demonstrate standard filling of baskets and</p> <p><b>P6:</b> Label the stock with standard industry coloured tags for different fruit grades</p>	
<b>A4:</b> Maintain Record	<p><b>P1:</b> Develop and maintain data collection sheet based on farm harvesting</p> <p><b>P2:</b> Maintain the records of fruit baskets filled and return empty from farms.</p> <p><b>P3:</b> Maintain the record of transportation vehicle and maintain their maintenance checklist</p> <p><b>P4:</b> Maintain harvesting tools and baskets and harvesting tools records</p> <p><b>P5:</b> Comply back on observations shared /collected from field harvesting supervisors</p> <p><b>P6:</b> Maintain stock register in fruit receiving area</p> <p><b>P7:</b> Explain / demonstrate the procedure in case of emergency / accident</p>	<p><b>K1:</b> Describe data sheet parameters</p> <p><b>K2:</b> Describe the layout of record data sheets</p> <p><b>K3:</b> Explain the importance of regular vehicle maintenance</p>

## Module B: Citrus Processing

**Overview:** These competency standards will ensure that the trainee will be able to perform citrus processing for export and high end local markets in processing unit.

Competency Unit	Performance Criteria	Knowledge and Understanding
<p><b>B1:</b> Assure Quality during Processing</p>	<p><b>P1:</b> Demonstrate advance citrus processing facility equipped with cool treatment facility.</p> <p><b>P2:</b> Observe citrus quality parameters and standards</p> <p><b>P3:</b> Develop citrus quality record? sheet at different critical steps involved in processing</p> <p><b>P4:</b> Demonstrate / or Explain quality characteristics of inputs including wax and fungicides etc</p> <p><b>P5:</b> Demonstrate / or Explain specific time frame for each processing step</p> <p><b>P6:</b> Explain physicochemical and sensory characteristics of citrus</p> <p><b>P7:</b> Demonstrate citrus quality parameters as per checklist at different critical points</p> <p><b>P8:</b> Observe standard procedures of processing scheme</p> <p><b>P9:</b> Maintain stock register of inputs in processing hall according to organisations procedures</p> <p><b>P10:</b> Demonstrate the use of emergency first aid kit</p>	<p><b>K1:</b> Describe the complete operation of citrus processing line</p> <p><b>K2:</b> Describe citrus quality parameters as directed in SPS guidelines and WTO standards</p> <p><b>K3:</b> Explain citrus quality characteristics</p> <p><b>K4:</b> Explain processing steps and technology involved</p>



<p><b>B2:</b> Ensure Fruit Quality at Critical Control Point</p>	<p><b>P1:</b> Identify Critical Control Points (CCPs) involved in citrus quality</p> <p><b>P2:</b> Demonstrate / explain critical limits (CLs) of each CCP (Critical Control Point)</p> <p><b>P3:</b> Demonstrate / explain fruit quality chart displayed in the processing hall</p> <p><b>P4:</b> Demonstrate / or explain fruit quality parameters for export markets</p> <p><b>P5:</b> Prepare checklists at all CCPs and CLs</p> <p><b>P6:</b> Monitor CCPs and CLs during processing of citrus fruit</p> <p><b>P7:</b> Explain / or demonstrate corrective action that should be taken for any violation (violation?) of CCPs</p>	<p><b>K1:</b> Explain critical control point (CCPs) involved in processing unit</p> <p><b>K2:</b> Explain critical limits (CLs) of each critical control point</p> <p><b>K3:</b> Describe preventive and corrective action</p>
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## Module C: Packing and Storage

**Overview:** These competency standards will ensure that the trainee will be able to perform citrus packing and storage for high end local markets and export in citrus processing unit conditions.

Competency Unit	Performance Criteria	Knowledge and Understanding
<b>C1:</b> Monitoring filling and labeling of boxes	<p><b>P1:</b> Explain different types of citrus packaging required for different markets</p> <p><b>P2:</b> Demonstrate different standard methods of packing and packaging</p> <p><b>P3:</b> Observe standard packing to comply net weight</p> <p><b>P4:</b> Label the product/ boxes</p> <p><b>P5:</b> Fix industry standard Codes on packaging of certified and non certified product</p> <p><b>P6:</b> Label of packing following markets demands and direction in accordance with industry standards</p> <p><b>P7:</b> Pack fruit with separation sheets to avoid injuries and absorbing shocks</p>	<p><b>K1:</b> Explain identification of different types of fruit packaging</p> <p><b>K2:</b> Explain the different types of packaging material needed for export markets</p> <p><b>K3:</b> Explain the coding of Global certified and non certified products</p> <p><b>K4:</b> Explain the use of water resistant separation sheets and packaging materials</p>
<b>C2:</b> Weight & quality check	<p><b>P1:</b> Identify standard packaging weights to comply market demand.</p> <p><b>P2:</b> Select calibrated digital balanced weighing machine.</p> <p><b>P3:</b> Demonstrate the Operation and maintenance procedures of weighing machine</p>	<p><b>K1:</b> Explain the weight system and packing weights existing in the export markets</p> <p><b>K2:</b> Explain calibration and weight balancing procedures</p> <p><b>K3:</b> Explain machine operation and maintenance activities and schedules</p>

	<b>P4:</b> Maintain data and quality sheets according to industry standards	
<b>C3:</b> Stock Keeping	<p><b>P1:</b> Demonstrate different methods of stock keeping that comply with industry standards</p> <p><b>P2:</b> Maintain stock register and preparation of fruit inventory report according to industry standard</p> <p><b>P3:</b> Prepare stock report</p>	<p><b>K1:</b> Explain stock keeping processes</p> <p><b>K2:</b> Explain processes for maintaining fruit stock register</p>
<b>C4:</b> Final Fruit Loading for market	<p><b>P1:</b> Use industry standard procedures to maintain fruit stock for export</p> <p><b>P2:</b> Perform final quality inspection using industry standard criteria</p> <p><b>P3:</b> Explain the advantages and disadvantages of different modes of transportation</p> <p><b>P4:</b> Demonstrate industry standard of loading procedures</p> <p><b>P5:</b> Carryout quarantine inspection of loading fruit and containers in compliance with industry standards</p> <p><b>P6:</b> Assess the loading capacity of each container according to standard procedures</p>	<p><b>K1:</b> Explain fruit stock keeping and quality inspection</p> <p><b>K2:</b> Observing standard loading procedures and quarantine inspection</p>
<b>C5:</b> House Keeping	<b>P1:</b> Perform housekeeping of storage and loading premises according to the organisations operational	<b>K1:</b> Describe standard housekeeping procedures for citrus processing industry

	<p>standards</p> <p><b>P2:</b> Observe sanitary and phyto-sanitary practices directed in FSMS and other food legislations</p> <p><b>P3:</b> Implement Integrated Pest Management System in the processing and storage according to industry standards</p>	<p><b>K2:</b> Explain SPS guidelines and Food Safety Management Systems</p> <p><b>K3:</b> Describe Integrated Pest Management (IPM)</p>
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### List of Tools and Equipments

Sr. #	Items	Quantity
01	Processing line 52 Fingers (Demo Processing Unit)	01
02	Fork Lifter (Demo Processing Unit)	01
03	Computer	01
04	Stapler	05
05	Thermometer for both pulp and open air temperature measuring	20-25
06	Refractometer	02
07	Ring Sizer (complete set)	20-25
08	Spray Machine (12-16 liters)	01
09	Weighing Machine (Demo Processing Unit)	02
10	Molding Machine (Demo Processing Unit)	02
11	Stripping Machine (Demo Processing Unit)	02
12	pH meter	01
13	Stop Watch	05
14	Calculator	05
15	Fruit Cutter Knives	20-25
16	Spray Machine	01
17	Magnifying lens	01
18	Microscope	01
19	White board	01
20	Multimedia	01

### List of Consumable Items

Sr. #	Items	Quantity
01	Drafting pads	25-30
02	Pencils	25-30
03	Wooden pallets	02
04	Stock Register	05
05	Tagging cards	100
06	Uniform	25-30
07	Fungicide	As required
08	Food Wax (mixed with fungicide)	1 Liter
09	Filter paper	50
10	Gloves	50
11	Head Covers	50

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