



**THE REPUBLIC OF UGANDA**  
Ministry of Education and Sports

**Directorate of Industrial Training**



**Assessment and Training  
Package  
For a  
FRUIT FARMER**

**Qualification Level: 1**

**Occupational Cluster: Agriculture**

**August 2020**

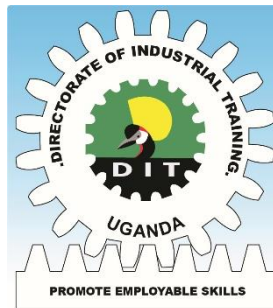
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**Reviewed by:**

**Qualifications Standards Department  
Directorate Of Industrial Training**

**Funded by:**

**Government of Uganda**



# **Assessment and Training Package**

**For a**

**FRUIT FARMER**

**Qualification Level: 1**

**Occupational Cluster: Agriculture**

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Under BTVET Act, 2008, the functions of the Directorate of Industrial Training are:

- (a) To identify the needs of the labour market for occupational competencies that fall under the UVQF.
- (b) To regulate apprenticeship schemes.
- (c) To foster and promote entrepreneurial values and skills, as an integral part of the UVQF.
- (d) To secure adequate and sustainable financing for the efficient operations of the Directorate.
- (e) To accredit training institutions or companies as assessment centres.
- (f) To determine fees payable under the Act.
- (g) To develop, apply, expand and improve the purposeful application of Uganda vocational qualifications defined in the UVQF.
- (h) To assess and award Uganda Vocational Qualifications.
- (i) To promote on-the-job training in industry for apprenticeship, traineeship and indenture training and for other training such as further skills training and upgrading.
- (j) To prescribe the procedure for the making of training schemes.

Further to the above provisions, there is an established Uganda Vocational Qualifications Framework (UVQF), under part V of the BTVET Act, 2008. It is stated that:

The purpose of the UVQF is to;

- (a) Define occupational standards in the world of work.
- (b) Define assessment standards.
- (c) Award vocational qualifications of learners who meet the set standards of different studies.
- (d) Provide guidelines for modular training.

The UVQF shall follow principles of Competence Based Education and Training (CBET) which include:

- (a) Flexible training or learning modules.
- (b) Positive assessment and Certification.
- (c) Assessment of Prior Learning.
- (d) Recognition of formal and non-formal training.
- (e) Self-paced or individual learning.
- (f) Work place learning.

For award and recognition of certificates, the BTVET Act, 2008 provides that:

- (1) The Directorate and other examination boards established under the Act shall award certificates and diplomas for Business, Technical or Vocational Education and Training under the UVQF.
- (2) The Certificates and Diplomas to be awarded shall be in the form prescribed by the Minister on the recommendation of the Industrial Training Council.
- (3) The Certificates and Diplomas awarded under the Act shall be recognised in the Uganda education system and by the labour market.

Under the TVET Implementation Standards 2020, the proposed new mandate of the Directorate of Industrial Training shall be restricted to promoting the highest standards in the quality and efficiency of industrial training in the country and ensuring an adequate supply of properly trained manpower at all levels in the industry and the world of work.

The functions shall include:

- (a) Regulating Industrial Training and Trainers.
- (b) Developing Industrial Training Curricula.
- (c) Harmonising Curricula and Certificates of competence.
- (d) Assessing Industrial Training.
- (e) Development of Occupational Standards and Assessment and Training Packages (ATPs) for Trade Testing for the industry and world of work.
- (f) Awarding certificates in that respect.

At operational level in the Directorate, the Qualification Standards Department performs development tasks related to concepts, procedures and instruments for establishment of the UVQF in close collaboration with both public and private stakeholders in vocational training.

In particular, the Department organises and coordinates the development of Assessment and Training Packages for use in competence-based vocational training as well as standards-based assessment and certification.

The Directorate has therefore produced this Assessment and Training Package for use in implementing Competence-Based Education and Training mechanisms.

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## **Word from Permanent Secretary**

The Kajubi Report (1989) and the Uganda Government White Paper on Education Review (1992) emphasised that the Uganda Secondary School Education should be vocationalised.

The World Bank Report on education in Uganda 2007 observed that although Uganda was experiencing steady economic growth on one hand, the secondary education curriculum was inadequately addressing the social and economic needs of the country on the other. The Report further noted that it is not the very top academic cadres that contribute most to the growth of the GDP but rather the competent middle level technicians that are flexible and technologically literate that the economy needs in the labour market at all levels.

Correspondingly, the NDP III 2020/21- 2024/5 highlights (i) low labour productivity (ii) high youth unemployment (38%) (iii) low transition rates from training to employment (35%) as some of the key challenges to Human Capital Development in Uganda.

In order to overcome these challenges, NDP III 2020/21- 2024/5, under objective 2 peaks the need to train the learners for the urgently needed skills and mainstream a dual education and training system. This paved way for the development of the lower secondary school vocational curriculum which supports both academic and vocational training.

The afore is in line with the Uganda Vision 2040. Under section 261, it emphasises that learners will be accorded opportunities to excel in the skills areas they are placed into. These will range from sports and cut to technical and vocational training. Hitherto, section 262 clearly states that the entire education system will be changed to emphasise practical skills, attitude and moral values.

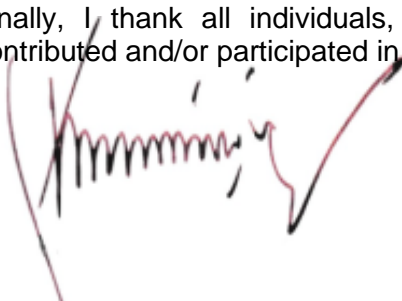
Government of Uganda through the Ministry of Education and Sports rolled out the New Lower Secondary Curriculum in secondary schools countrywide during the first term of the academic year 2020. The overall goal of this curriculum is to produce graduates with employable skills and who are competitive in the labour market. It should be emphasised that vocational training will produce graduates who are employable. In the New curriculum, emphasis will be on equipping learners with employable skills and competencies. This will enable learners perform the requisite duties of the specified occupations. This is the reason why the lower secondary school vocational curriculum was tailored to the assessment requirements of the world of work.

Reading from the Curriculum Framework page 12, it is stated that the learners will be assessed by DIT. Upon assessment and certification, the graduates will be employable and competitive in the labour market. It's against this background that DIT, within its mandate vested in the BTVET Act, 2008 comes on board to take the lead in the development of the requisite Assessment and Training Packages (ATPs) for the various occupations that will be assessed under the Lower Secondary Curriculum.

The ATPs can be used by any training provider and/or those who wish to present themselves for Occupational Assessment and Certification.

Herewith, the Directorate of Industrial Training presents the Assessment and Training Package for training, assessment and certification of a **FRUIT FARMER-QUALIFICATION LEVEL 1**.

Finally, I thank all individuals, organisations and development partners who have contributed and/or participated in the development of this noble document.



**Alex Kakooza**  
**Permanent Secretary**



## Executive summary

This Assessment and Training Package is a Competence-Based Education and Training (CBET) tool and consists of three major parts:

- 0.1 **PART I: The Occupational Profile (OP) of a FRUIT FARMER.** This Occupational Profile which was reviewed by Fruit farmers practicing in the world of work mirrors the duties and tasks that Fruit farmers are expected to perform.
- 0.2 **PART II: Training Modules** in the form of guidelines to train Fruit farmers both on the job as well as in training centres (or combinations of both venues of learning). The Training Modules herein have been reviewed basing on the Occupational Profile and hence are directly relevant for employment.
- 0.3 **PART III: Assessment Instruments** in the form of performance (Practical) and written (theory) test items that can and should be used to assess whether a person complies with the requirements of employment as a FRUIT FARMER. These assessment instruments were reviewed jointly by job practitioners (Fruit farmers) and instructors based on the occupational profile and training modules.
- 0.4 While the Occupational Profile (OP) contained in PART I of this document provides the information on **WHAT a person is expected to do** competently in the world of work, the test items, - including performance criteria- of PART III qualify the **HOW and/or HOW WELL a person must do the job.**
- 0.5 The modular format of the curriculum (PART II) allows learners to acquire job specific skills and knowledge (i.e. competencies) module by module. A single module can be accomplished within a relatively short duration allowing flexibility for learners to move directly into an entry level job, go for further modules or advance to higher levels of training. Modular courses allow more learners to access the training system because training centres as well as companies can accommodate more learners in a given period of time.
- 0.6 In addition to improved access, equity and relevance of BTVET, the UVQF will also enable people who are convinced to have acquired competencies laid down in this ATP through prior training and on-the-job experience to access assessment and certification directly; be it on the basis of a single module, a group of modules or all modules pertaining to the occupation at once. This achievement will facilitate Recognition of Prior Learning (RPL).

0.7 The parts of this Assessment and Training Package were sequentially reviewed as follows:

- i Part 1: Occupational Profile: **August 2020**
- ii Part 2: Training Modules: **August 2020**
- iii Part 3: Assessment Instruments (initial bank): **August 2020**

This ATP (or parts of it) may be periodically revised to match the dynamic trends in the occupation and hence issued in different versions.

DIT takes responsibility of any shortcomings that might be identified in this publication and welcomes suggestions for effectively addressing the inadequacies. The suggestion can be communicated to DIT through P.O. Box 20050, Kampala or through email [uvaf.dit@gmail.com](mailto:uvaf.dit@gmail.com).



**Patrick Byakatonda**  
**Ag Director**

## Acknowledgement

The Qualifications Standards Department of DIT acknowledges the valuable contributions to the review of this Assessment and Training Package by the following persons, Institutions and organisations:

- Members of the DIT Industrial Training Council.
- The Director and staff of DIT.
- Ministry of Education and Sports.
- The practitioners from the world of work.
- Teachers and instructors of Fruit farming from various secondary schools.
- Agriculture Curriculum Specialists from NCDC.
- Examination specialists from UNEB.
- The facilitators involved in guiding the development panels in their activities.
- The Government of Uganda for financing the development of this ATP.

## Abbreviations and acronyms

A&C	Assessment and Certification
ATP	Assessment and Training Packages
DIT	Directorate of Industrial Training
CBET	Competency Based Education and Training
DIT	Directorate of Industrial Training
ITC	Industrial Training Council
GoU	Government of Uganda
LWA	Learning-Working Assignment
MC	Modular Curriculum
MoES	Ministry of Education and Sports
OP	Occupational Profile
PEX	Practical Exercise
PTI	Performance (Practical) Test Item
QS	Qualification Standards
RPL	Recognition of Prior Learning
TIB	Test Item Bank
TVET	Technical, Vocational, Education and Training
UVQ	Uganda Vocational Qualification
UVQF	Uganda Vocational Qualifications Framework
WTI	Written (Theory) Test Item

## Key definitions

<b>Assessment</b>	Assessment is the means by which evidence is gathered and judged to decide if an individual has met the stipulated assessment standards or not. Testing is a form of formal assessment.
<b>Certification</b>	Certification is a formal procedure to issue a certificate (qualification) to an individual that has demonstrated during formal assessment that he/she is competent to perform the tasks specified in the occupational profile.
<b>Competence</b>	Integration of skills, knowledge, attitudes, attributes and expertise in performing tasks in the world of work to a set standard.
<b>Competency</b>	(Occupational) competency is understood as the ability to perform tasks common to an occupation to a set standard.
<b>CBET</b>	Competence-Based Education and Training means that programmes: have content directly related to work focus is on 'doing something well' assessment is based upon industry work standards, and curricula are developed in modular form
<b>Duty</b>	A Duty describes a large area of work in performance terms. A duty serves as a title for a cluster of related Tasks (see also: TASK).
<b>Learning-Working Assignment (LWA)</b>	LWA are simulated or real job situations / assignments that are suitable for learning in a training environment (e.g. "small projects"). In a working environment LWAs are real work situations /assignments.
<b>Modules</b>	Modules are part(s) of a curriculum. Modules can be considered as "self-contained" partial qualifications which are described by learning outcomes or competencies and which can be assessed and certified individually.

**Occupational Profile (OP)** An Occupational Profile is an overview of the duties and tasks a job incumbent is expected to perform competently in employment.

Occupational Profiles developed by practitioners from the world of work enhance the relevance of training and learning to the requirements of the world of work.

Occupational Profiles define what a person is supposed to do in performance terms. It also contains generic information regarding related knowledge and skills, attitudes/behavior, tools, materials and equipment required to perform as well as trends/ concerns in the occupation.

Occupational profiles are the reference points for developing modular curricular and assessment standards.

**Qualification** A qualification is a formal recognition for demonstrating competence, based on formal assessment against set standards. A qualification is provided to the individual in form of a certificate specifying the nature of the competence.

**Task** Job tasks represent the smallest unit of job activities with a meaningful outcome. Tasks result in a product, service, or decision. They represent an assignable unit of work and have a definite beginning and ending point. Tasks can be observed and measured.  
(Also see: *Duty*)

## 1.0 ATP-PART I

### Occupational Profile for a FRUIT FARMER

- 1.1 The OCCUPATIONAL PROFILE (OP) for “FRUIT FARMER” below defines the **Duties** and **Tasks** a competent fruit farmer is expected to perform in the world of work (on the job) in Uganda and the East African region today.
- 1.2 Since it reflects the skill requirements of work life, the Occupational Profile is the reference document for the subsequent development of training modules and assessment instruments (test items) which are directly relevant to employment in the Ugandan and the East African businesses and industries.
- 1.3 To ensure that the Occupational Profile is relevant for employment in Uganda and East Africa, the DIT used the method of “occupational/job profiling.

This approach involves the brainstorming of a panel of 8 to 12 competent job practitioners guided by trained and experienced facilitators. During a two-day workshop the panellists define the duties and tasks performed in employment, as well as the prerequisite skills, knowledge, attitudes, tools and equipment, and the future trends and concerns in the occupation/job.

- 1.4 The panellists, facilitators and coordinators who participated in developing this Occupational Profile for a FRUIT FARMERS are listed on the following page.

---

<sup>1</sup> The DACUM-method was used. DACUM is an acronym for ‘Develop a Curriculum’

**Expert Panel**

**Nalwanga Teopista**  
Majo Mixed Farm

**Atuhaire Francis**  
Katooma Abamwe Farmer's Group

**Nnyanzi Flavia**  
National Curriculum Development  
Centre

**Muhindi Paul**  
SICDO

**Kahangire Valerian**  
KABIP

**Ekwaro Benson**  
Kyambogo College School

**Wafula Moses**  
Kigulu

**Ashaba Denis**  
NARO-Kabale

**Golomba Wilberforce**  
Tororo Girl's School

**Sserwanga Joseph**  
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Directorate of Industrial Training

**Co-ordinator**  
**Byakatonda Patrick**  
Directorate of Industrial Training

**Funded by**  
Government of Uganda



THE REPUBLIC OF UGANDA  
Ministry of Education and Sports

Directorate of Industrial Training

# Occupational Profile of a "FRUIT FARMER"

Reviewed by: Directorate of Industrial Training  
(Qualifications Standards)

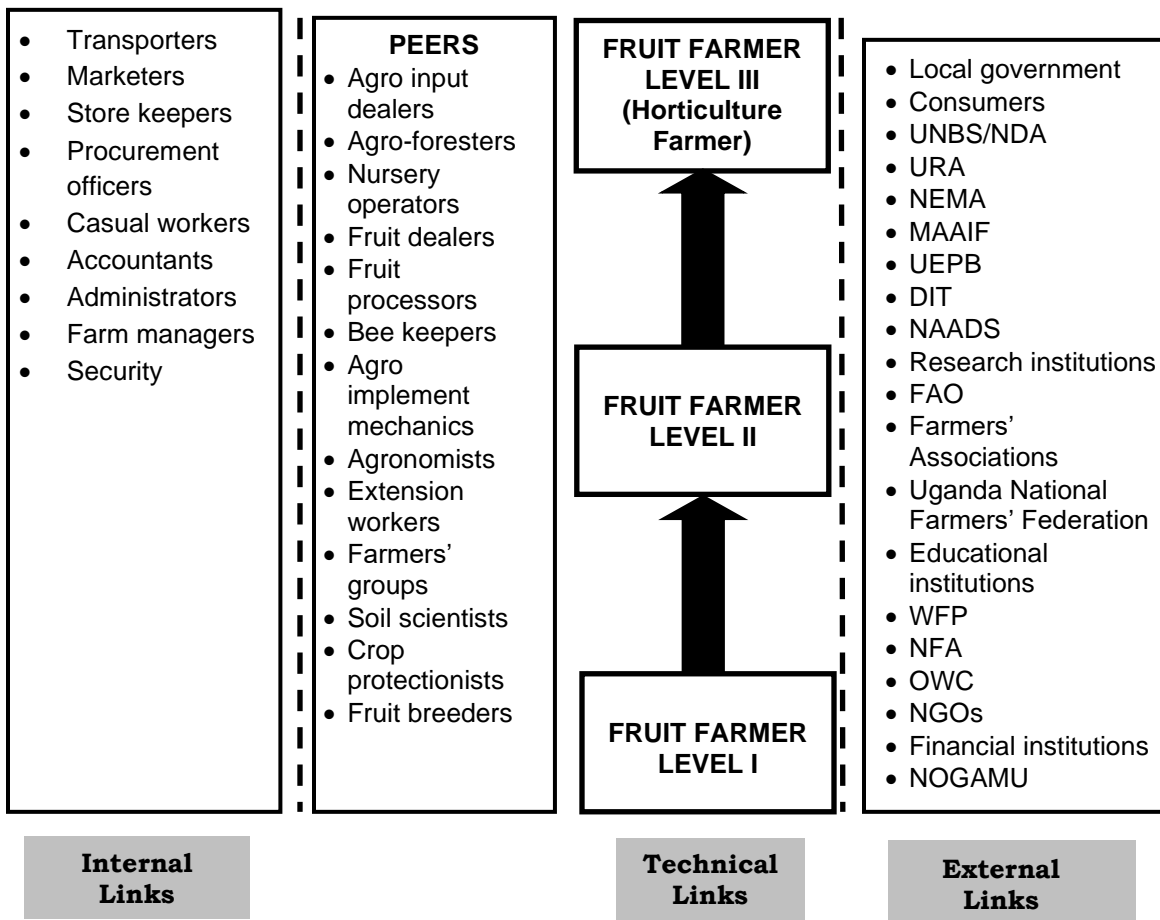
Dates of workshop: 10<sup>th</sup> –15<sup>th</sup> August 2020



## NOMENCLATURE FOR THE OCCUPATION OF A FRUIT FARMER

**Definition:** A fruit farmer is a person who grows fruit crops for commercial purposes.

### JOB ORGANISATION CHART FOR A FRUIT FARMER



### Descriptions for the levels in the occupation of a 'Fruit Farmer'

**UVQ Level I Fruit Farmer:** is a person who grows fruit crops using basic agronomic practices for commercial purposes.

**UVQ Level II Fruit Farmer:** is a person who grows fruit crops and produces propagation materials for fruit farming on a commercial level.

**UVQ Level III Fruit Farmer:** is a person who grows fruits, crops and produces propagation materials for fruit farming or a large commercial scale.

## Duties and Tasks

<b>A. PLAN FRUIT FARMING WORKS</b>	<b>A1.</b> Carry out feasibility study	<b>A2.</b> Determine farm location	<b>A3.</b> Prepare financial plan
	<b>A4.</b> Determine site structural plan	<b>A5.</b> Determine factor inputs	<b>A6.</b> Determine fruit crop varieties
	<b>A7</b> Prepare work schedules	<b>A8.</b> Prepare procurement plan for inputs	<b>A9.</b> Determine production methods

<b>B. ESTABLISH FRUIT NURSERY BED</b>	<b>B1</b> Select site	<b>B2</b> Clear land	<b>B3</b> Demarcate land
	<b>B4</b> Until land	<b>B5</b> Sterilise soil	<b>B6</b> Prepare growth media
	<b>B7</b> Pot media	<b>B8</b> Prepare seeds and other planting materials	<b>B9</b> Prepare fruit propagative materials
	<b>B10</b> Pot vegetative propagation materials	<b>B11</b> Pot seeds	<b>B12</b> Pot seedlings
	<b>B13</b> Prepare tissue culture plantlets	<b>B14</b> Erect nursery shade	<b>B15</b> Water seedlings
	<b>B16</b> Control pests and diseases	<b>B17</b> Monitor growth	<b>B18</b> Prick out seedlings
	<b>B19</b> Prune seedling roots	<b>B20</b> Weed nursery	<b>B21</b> Harden seedlings

<b>C. ESTABLISH A FRUIT GARDEN</b>	<b>C1</b> Prepare land	<b>C2</b> Sterilise garden	<b>C3</b> Apply fertiliser
	<b>C4</b> Dig planting holes	<b>C5</b> Transplant seedlings	<b>C6</b> Shade seedlings
	<b>C7</b> Water plants	<b>C8</b> Label fruit plants	<b>C7</b> Fence garden

<b>D. MAINTAIN GARDEN</b>	<b>D1</b> Perform gap filling	<b>D2</b> Mulch garden	<b>D3</b> Weed garden
	<b>D4</b> Conserve soil and water	<b>D5</b> Prune plants	<b>D6</b> Apply growth boosters
	<b>D7</b> Construct support structures	<b>D8</b> Maintain support structures	<b>D9</b> Train fruit plants

<b>E. PERFORM HARVEST AND POST HARVEST HANDLING OF FRUITS</b>	<b>E1</b> Prepare harvesting tools and containers	<b>E2</b> Identify ready fruits	<b>E3</b> Pick fruits
	<b>E4</b> Bulk fruits	<b>E5</b> Sort fruits	<b>E6</b> Transport fruits
	<b>E7</b> Clean fruits	<b>E8</b> Grade fruits	<b>E9</b> Preserve fruits
	<b>E10</b> Pack fruits	<b>E11</b> Store fruits	<b>E12</b> Manage fruit ripening

<b>F. MARKET FRUIT PRODUCE</b>	<b>F1</b> Conduct market survey	<b>F2</b> Brand produce	<b>F3</b> Package produce
	<b>F4</b> Label produce	<b>F5</b> Price produce	<b>F6</b> Promote produce
	<b>F7</b> Distribute produce	<b>F8</b> Sell produce	

<b>G. PERFORM OCCUPATIONAL HEALTH, SAFETY, AND ENVIRONMENTAL PROTECTION PRACTICES</b>	<b>G1</b> Administer first aid	<b>G2</b> Train subordinates on safety	<b>G3</b> Sensitise workers on communicable diseases
	<b>G4</b> Perform fire fighting	<b>G5</b> Manage waste	<b>G6</b> Observe health, safety and environmental protection practices
	<b>G7</b> Observe Hazard Analysis Critical Control Points (HACCP)	<b>G8</b> Display Safety signs	

<b>H. PERFORM ADMISITRATIVE TASKS</b>	<b>H1</b> Keep records	<b>H2</b> Network with stakeholders	<b>H3</b> Manage human resources
	<b>H4</b> Manage finances	<b>H5</b> Procure farm inputs	<b>H6</b> Formalise business
	<b>H7</b> Pursue continuous professional development	<b>H8</b> Pay bills	<b>H9</b> Conduct meetings
	<b>H10</b> Comply with regulations and policies	<b>H11</b> Provide farm security	

### Additional Information

<b>Generic Knowledge &amp; Skills</b>	
1. Site selection	24. Skills of watering
2. Soil fertility	25. Soil and water conservation techniques
3. Quality water	26. Types of chemicals and their application in fruit farming
4. Land terrain	27. Methods of applying chemicals
5. Dimensions and measurements	28. Skills of planting and transplanting
6. Fertilisers and application	29. Weeds and their control methods
7. Sterilisation	30. Pruning
8. Potting skills	31. Sorting and grading
9. Propagation methods (Budding, grafting, layering, tissue culture etc)	32. Record keeping
10. Staking	33. Labelling
11. Trellising	34. Pricing techniques
12. Fruit harvesting techniques	35. Branding and packaging
13. Transportation of fruit produce	36. Selling techniques
14. Waste management	37. Communication skills
15. Garden tools and equipment usage and maintenance	38. Types of fertilisers
16. First aid administration	39. Negotiation skills
17. Financial management techniques	40. Climate change, mitigation and adoption measures
18. Farm planning	41. HACCP
19. Maturity indices	42. Cold chain management
20. Risk management skills	43. Human resource management
21. Crop calendar	44. Business planning
22. Fruit preservation techniques	45. Hardening procedure
23. Contract farming	46. Pest and disease management
	47. Nursery bed management
	48. Promotional techniques
	49. Occupational health, safety and environmental protection practices

**Tools, Materials and Equipment**

- |                                 |                                |                                 |
|---------------------------------|--------------------------------|---------------------------------|
| 1. Hand hoes                    | 32. Stones                     | 59. Stalls                      |
| 2. Spades                       | 33. Sand                       | 60. Tape measures               |
| 3. Slashers                     | 34. Paint                      | 61. Buckets                     |
| 4. Wheelbarrows                 | 35. Sawdust                    | 62. Fumigators                  |
| 5. Trowels                      | 36. Black soil                 | 63. Jerrycans                   |
| 6. Potting bags                 | 37. Brush                      | 64. Syringes                    |
| 7. Rake                         | 38. Knife                      | 65. Pack house crates           |
| 8. Watering can                 | 39. Forked hoes                | 66. Pallets                     |
| 9. Nursery bed netting          | 40. Ploughs                    | 67. Sorting tables              |
| 10. Polythene sheet             | 41. Washrooms                  | 68. Weighing scales             |
| 11. Poles (wooden and metallic) | 42. Scion                      | 69. Rooting media               |
| 12. Hand saws                   | 43. Sign posts                 | 70. Stationery                  |
| 13. Hammers                     | 44. Billboards canvas          | 71. Thermometers                |
| 14. Nails                       | 45. Secateurs                  | 72. First aid kits              |
| 15. Fiber mats                  | 46. Knap sack sprayer          | 73. Water                       |
| 16. Gumboots                    | 47. Tarpaulin                  | 74. Disposal kits               |
| 17. Masks                       | 48. Ox plough/ disc plough     | 75. Incinerator                 |
| 18. Overalls                    | 49. Tractors/draught animals   | 76. Soak pit                    |
| 19. Axe                         | 50. Seeds/ seedlings           | 77. Plastic crates              |
| 20. Fencing wires               | 51. Field craters              | 78. Notice boards               |
| 21. Ropes                       | 52. Sacks                      | 79. Detergents                  |
| 22. Hand gloves                 | 53. Planters                   | 80. Mobile phones               |
| 23. Dry grass                   | 54. Herbicides                 | 81. Computer                    |
| 24. Pegs                        | 55. Pesticides                 | 82. Radio                       |
| 25. Shades                      | 56. Fertilisers                | 83. Television                  |
| 26. Iron sheets                 | 57. Fungicides                 | 84. Brochures                   |
| 27. Chains/ barbed wire         | 58. Ox carts/ bicycles/ Trucks | 85. Grafting tape               |
| 28. Water tanks                 |                                | 86. Water pipes and horse pipes |
| 29. Bricks                      |                                | 87. Water pumps                 |
| 30. Cement                      |                                | 88. Dipper                      |
| 31. Timber                      |                                | 89. Power source                |

Attitudes/ Traits/ Behaviour	Future Trends and Concerns
1. Honest and transparent	1. Emergency of new markets
2. Tolerant	2. Variety improvements
3. Hardworking	3. Networking of fruit farmers
4. Punctual	4. Formation of fruit farmer groups and associations
5. Realistic	5. Price fluctuation
6. Social	6. Continuous professional development in fruit farming
7. Ambitious	7. Need for state of the art storage facilities
8. Organised	8. Need for value addition
9. Respectful	9. Environmental degradation
10. Confident	10. Climatic change
11. Dedicated	11. Need to visit model farms
12. Team player	12. Unfavourable agricultural credit facilities
13. Disciplined	13. High taxation levels
14. Enthusiastic	14. Need for extension services.
15. Creative and innovative	15. Emerging pests and diseases
16. Resourceful	16. Lack of formal curriculum on fruit farming
17. A good listener	17. Land shortage
18. Result oriented	18. Increasing population
19. Trainable	19. Increasing competition from imported produce
20. Strategic	20. Need to meet set market standards
21. Committed	21. Traceability
22. Problem solver	
23. Resilient	

## 2.0 ATP-PART II

### Training Modules for a FRUIT FARMER

- 2.1 A curriculum is a “guide / plan for teaching and learning” which provides a guide to teachers, instructors and learners. In the envisaged system of competence-based or outcome-oriented education and training (CBET), Curricula are no longer the benchmark against which assessment is conducted. It is rather the Occupational Profile and the related Test Items that provide the benchmark for assessment as well as for Curriculum development.
- 2.2 This modular format of the curriculum allows learners of the Fruit Farmer Occupation to acquire job specific skills and knowledge (i.e. competencies) module by module. A single module can be accomplished within a relatively short duration of time allowing learners to move directly into an entry level job, do further modules and advance to higher levels of training. Modular courses allow more learners to access the training system because training centres as well as companies can accommodate more students in a given period of time.
- 2.3 The modules were developed jointly by both instructors from training centres and job practitioners. They were developed using the Occupational Profile as a reference point and taking into account the specifications of training and learning outcomes in the form of Test Items described in Part II.
- 2.4 The modules contain “Learning-Working Assignments” (LWAs) and related “Practical Exercises” (PEXs) as key elements.
- LWAs are simulated or real job situations / assignments that are suitable for learning in a training environment (e.g. “small projects”). In a working environment, LWAs are real work situations.
- PEXs are therefore sub-sets of a LWA.
- 2.5 In principle, and following the philosophy of Competence-Based Education and Training (CBET), the modules can be used as a guide for learning in a training centre or at the work place; or combinations of both.



## WHO IS A FRUIT FARMER QUALIFICATION LEVEL 1?

**A Fruit Farmer Level I:** Is a person who grows fruit crops using basic agronomic practices for commercial purposes.

### TRAINING MODULES FOR FRUIT FARMER UVQ LEVEL 1

Code	Module Title	Average duration	
		Contact hours	Weeks
UE/FF/M1.1	Establish a Fruit Nursery Bed	160	4
UE/FF/M1.2	Establish Fruit Garden	160	4
UE/FF/M1.3	Manage Fruit Garden	160	4
UE/FF/M1.4	Perform Harvest and Post-Harvest Handling Activities	160	4
UE/FF/M1.5	Establish Fruit Farming Enterprise	160	4
<b>Summary</b>	<b>5 modules</b>	<b>800 hours = 20 weeks</b>	

**Note:** Average duration is contact time but **NOT** calendar duration

It is assumed that:

- 1 day is equivalent to 8 hours of nominal learning and
- 1 month is equivalent to 160 hours of nominal learning.

Information given on the average duration of training should be understood as a guideline. Quick learners may need less time than indicated or vice versa.

At completion of a module, the learner should be able to satisfactorily perform the included Learning Working Assignments, their Practical Exercises and attached theoretical instruction, as the minimum exposure.

Prior to summative assessment by recognised Agencies, the users of these Module Guides are encouraged to carefully consider continuous assessment using samples of (or similar) performance (practical) and written test items available in part 3 of this ATP.

<b>Code</b>	<b>UE/FF/M1.1</b>
<b>Module title</b>	<b>M1.1: Establish a Fruit Nursery Bed</b>
<b>Related Qualification</b>	Part of: Uganda Vocational Qualification (Fruit Farmer UVQ1)
<b>Qualification Level</b>	1
<b>Module purpose</b>	At the end of the module, the trainee shall be able to produce quality seedlings from the nursery
<b>Learning-Working Assignments (LWAs)</b>	<p><b>LWA 1/1: Prepare Nursery Bed</b>  <b>LWA 1/2: Prepare Growth Media</b>  <b>LWA 1/3: Prepare Propagation Materials</b>  <b>LWA 1/4: Maintain Fruit Nursery Bed</b>  <b>LWA 1/5: Maintain Tools and Equipment</b>  <b>LWA 1/6: Perform Occupational Health, Safety and Environmental Protection Practices</b></p> <p><b>Note:</b></p> <ol style="list-style-type: none"> <li><i>The learning exercises may be repeated until the trainee acquires a targeted competence.</i></li> <li><i>The trainer is advised to deliver relevant theoretical instruction with demonstrations as required to perform each learning working assignment.</i></li> </ol>
<b>Related Practical Exercises (PEXs)</b>	<p><b>LWA 1/1: Prepare Nursery Bed</b></p> <p>PEX 1.1: Select site          PEX 1.2: Select materials, tools and equipment          PEX 1.3: Demarcate site          PEX 1.4: Till the bed          PEX 1.5: Prepare media          PEX 1.6: Test for germination          PEX 1.7: Place planting materials          PEX 1.8: Water nursery          PEX 1.9: Mulch nursery          PEX 1.10: Erect nursery shade</p>

	<p><b>LWA 1/2: Prepare Growth Media</b>                  PEX 2.1: Select growth Media                  PEX 2.2: Sterilise growth media                  PEX 2.3: Pot growth media                  PEX 2.4: Apply fertiliser in growth media                  PEX2.5: Water growth Media</p>
	<p><b>LWA 1/3: Maintain Fruit Nursery Bed</b>                  PEX 3.1: Water nursery                  PEX 3.2: Weed nursery                  PEX 3.3: Control pests and diseases                  PEX 3.4: Prune seedlings                  PEX 3.5: Apply fertiliser                  PEX 3.6: Thin multiple seedlings                  PEX 3.7: Harden off seedlings</p>
	<p><b>LWA 1/4: Maintain Tools and Equipment</b>                  PEX 4.1: Assemble tools and equipment                  PEX 4.2: Clean tools and equipment                  PEX 4.3: Sharpen tools                  PEX 4.4: Repair tools                  PEX 4.5: Disinfect tools and equipment                  PEX 4.6: Lubricate tools                  PEX 4.7: Paint tools and equipment                  PEX 4.7: Sheath tools                  PEX 4.8: Store tools and equipment</p>
	<p><b>LWA 1/5: Perform Occupational Health, Safety and Environmental Protection Practices</b>                  PEX 5.1: Wear protective gear                  PEX 5.2: Observe hygiene and sanitation                  PEX 5.3: Manage waste                  PEX 5.4: Store chemicals and other toxic materials                  PEX 5.5: Comply with safety regulations and policies                  PEX 5.6: Administer first aid                  PEX 5.7: Plant legume trees and plants                  PEX 5.8: Display safety signs                  PEX 5.9: Perform firefighting                  PEX 5.10: Sensitise workers on health issues and work related hazards</p>

<b>Occupational health and safety</b>	Precautions, rules and regulations on occupational health, safety and environmental protection included in the listed related knowledge should be observed and demonstrated during LWAs and PEXs.
<b>Pre-requisite modules</b>	None
<b>Related knowledge/ theory</b>	<p><i>For occupational theory suggested for instruction/ demonstration, the trainer is not limited to the outline below. In any case, related knowledge/ theory may be obtained from various recognised reference materials as appropriate:</i></p> <ul style="list-style-type: none"> <li>• Land preparation</li> <li>• Tools and equipment usage</li> <li>• Fruit crop varieties</li> <li>• Herbicides and agro chemicals handling</li> <li>• Weather patterns</li> <li>• Types of soil</li> <li>• Soil profile</li> <li>• Soil and water conservation techniques</li> <li>• Fertilisers, types and their applications</li> <li>• Geographical conditions (direction of sun, wind)</li> <li>• Propagation materials</li> <li>• Requirements for plant growth</li> <li>• Sources of water</li> <li>• Care for planting materials</li> <li>• Fruit tree agronomy</li> <li>• Crop protection</li> <li>• Nursery bed management</li> </ul>
<b>Average duration of learning</b>	<p>160 hours (20 days) of nominal learning suggested to include:</p> <ul style="list-style-type: none"> <li>• <i>5 day of occupational theory and</i></li> <li>• <i>15 days of occupational practice</i></li> </ul>
<b>Suggestions on organisation of learning</b>	The acquisition of competencies (skills, Knowledge, attitudes) described in this module may take place at a training centre or its equivalent provided all equipment and materials required for training are in place.
<b>Assessment</b>	Assessment to be conducted according to established regulations by a recognised assessment body using related practical and written test items from Item bank
<b>Minimum required tools/ equipment/ implements or equivalent</b>	panga, slashers, sickles, rakes, axes, plough, knife, strings, gumboots, overalls, head mask, water tanks, spray equipment, pick axes, hoes, tape measure, pegs, watering cans, jerrycan, horse pipes, wheel barrows, spade, mattocks, first aid kit

<b>Minimum required materials and consumables or equivalent</b>	match boxes, gloves, herbicides, water, seeds, palm leaves, banana fibre, papyrus reeds, fertilisers/ manures, polythene pots, nursery bed trays, synthetic fibre,
<b>Special notes</b>	

<b>Code</b>	<b>UE/FF/M1.2</b>
<b>Module title</b>	<b>M1.2: Establish a Fruit Garden</b>
<b>Related Qualification</b>	Part of: Uganda Vocational Qualification (Fruit Farmer UVQ1)
<b>Qualification Level</b>	1
<b>Module purpose</b>	At the end of this module, the trainee should be able to successfully plant a fruit garden
<b>Learning-Working Assignments (LWAs)</b>	<p><b>LWA 2/1: Prepare Seed Bed</b></p> <p><b>LWA 2/2: Transplant Seedlings</b></p> <p><b>LWA 2/3: Maintain Tools and Equipment</b></p> <p><b>LWA 2/4: Perform Occupational Health Safety and Environmental Protection Practices</b></p> <p><b>Note:</b></p> <ol style="list-style-type: none"> <li>1. The learning exercises may be repeated until the trainee acquires a targeted competence.</li> <li>2. The trainer is advised to deliver relevant theoretical instruction with demonstrations as required to perform each learning working assignment.</li> </ol>
<b>Related Practical Exercises (PEXs)</b>	<p><b>LWA 2/1: Prepare Seed Bed</b></p> <p>PEX 2.1: Select site</p> <p>PEX 2.2: Select tools</p> <p>PEX 2.3: Clear land</p> <p>PEX 2.4: Till/plough land</p> <p>PEX 2.5: Construct farm infrastructure</p> <p>PEX 2.6: Plot seedling spacing</p> <p>PEX 2.7: Dig holes</p> <p>PEX 2.8: Apply fertilisers</p> <p><b>LWA 2/2: Transplant Seedlings</b></p> <p>PEX 2.1: Select tools and equipment</p> <p>PEX 2.2: Select seedlings</p> <p>PEX 2.3: Trim roots</p> <p>PEX 2.4: Transport seedlings</p> <p>PEX 2.5: Remove potting materials</p> <p>PEX 2.6: Place seedlings in holes</p> <p>PEX 2.7: Cover base with soil</p> <p>PEX 2.8: Water seedlings</p> <p>PEX.2.9: Shade seedling</p>

	<p><b>LWA 2/3: Perform Planting</b>                  PEX 3.1: Select tools and equipment                  PEX 3.2: Sort planting material                  PEX 3.3: Dig planting holes                  PEX 3.4: Place planting materials                  PEX 3.5: Water seeds                  PEX 3.6: Shade the seedlings                  PEX 3.7: Mulch garden                  PEX 3.8: Apply fertilisers                  PEX 3.9: Perform gap filling</p> <p><b>LWA 2/4: Maintain Tools</b>                  PEX 4.1: Clean tools                  PEX 4.2: Sharpen tools                  PEX 4.3: Repair tools                  PEX 4.4: Disinfect tools                  PEX 4.5: Lubricate tools                  PEX 4.6: Sheath tools                  PEX 4.7: Store tools</p> <p><b>LWA 2/5: Perform Occupational Health, Safety and Environmental Protection Practices</b>                  PEX 5.1: Administer first aid                  PEX 5.2: Wear personal protective gear                  PEX 5.3: Observe hygiene and sanitation                  PEX 5.4: Guide and counsel workers                  PEX 5.5: Sensitise workers on health issues                  PEX 5.6: Manage wastes                  PEX 5.7: Perform soil and water conservation measures                  PEX 5.8: Perform firefighting                  PEX 5.9: Observe regulations and policies                  PEX 5.10: Display safety signs                  PEX 5.11: Set up soil and water conservation structures                  PEX 5.12: Practice agro-forestry</p>
<p><b>Occupational health and safety</b></p>	<p>Precautions, rules and regulations on occupational health, safety and environmental protection included in the listed related knowledge should be observed and demonstrated during LWAs and PEXs.</p>
<p><b>Pre-requisite modules</b></p>	<p>None</p>

<p><b>Related knowledge/ theory</b></p>	<p><i>For occupational theory suggested for instruction/ demonstration, the trainer is not limited to the outline below. In any case, related knowledge/ theory may be obtained from various recognised reference materials as appropriate:</i></p> <ul style="list-style-type: none"> <li>• Land preparation</li> <li>• Fertiliser types and application</li> <li>• Tools and equipment usage and maintenance</li> <li>• Regulations and policies of the fruit industry</li> <li>• Making organic fertilisers</li> <li>• Soil and water conservation techniques</li> <li>• Weed control methods</li> <li>• Pests, diseases and their control</li> <li>• Planting seasons</li> <li>• Effects of agro chemicals onto the environment</li> <li>• Health, safety and environmental precautions</li> <li>• Soil sterilisation</li> <li>• Fruit agronomy</li> <li>• Fruit farm infrastructure and construction</li> </ul>
<p><b>Average duration of learning</b></p>	<p>160 hours (20 days) of nominal learning suggested to include:</p> <ul style="list-style-type: none"> <li>• 3 days of occupational theory and</li> <li>• 7 days of occupational practice</li> </ul>
<p><b>Suggestions on organisation of learning</b></p>	<p>The acquisition of competencies (skills, knowledge, attitudes) described in this module may take place at a training centre or its equivalent provided all equipment and materials required for training are in place.</p>
<p><b>Assessment</b></p>	<p>Assessment to be conducted according to established regulations by a recognised assessment body using related practical and written test items from Item bank</p>
<p><b>Minimum required tools/ equipment/ implements or equivalent</b></p>	<p>hoe, gumboots, overall, spray pump, basins, wheel barrows, strings, watering can, jerrycan, water tank/ drums, seed boxes/ trays, sieve, tape measure, bucket, pruning shears, knives, razorblades, hammer, spade, stools</p>
<p><b>Minimum required materials and consumables or equivalent</b></p>	<p>gloves, water, pesticides, polythene sheets, poles/ sticks, dry grass, seeds, palm leaves, papyrus reeds, sand, soil, charcoal dust, fertiliser/ manure, fire wood, nails, banana fibre</p>
<p><b>Special notes</b></p>	



<b>Code</b>	<b>UE/FF/M1.3</b>
<b>Module title</b>	<b>M1.3:Manage Fruit Garden</b>
<b>Related Qualification</b>	Part of: Uganda Vocational Qualification (Fruit Farmer UVQ1)
<b>Qualification Level</b>	1
<b>Module purpose</b>	At the end of this module, a trainee shall be able to successfully manage a fruit garden.
<b>Learning-Working Assignments (LWAs)</b>	<p><b>LWA 3/1: Manage Fruit Trees</b></p> <p><b>LWA 3/2: Protect Fruit Trees</b></p> <p><b>LWA 3/3: Conserve Soil and Water</b></p> <p><b>LWA 3/4: Perform Occupational Health, Safety and Environmental Protection Practices</b></p> <p><b>Note:</b></p> <ol style="list-style-type: none"> <li>1. The learning exercises may be repeated until the trainee acquires a targeted competence.</li> <li>2. The trainer is advised to deliver relevant theoretical instruction with demonstrations as required to perform each learning working assignment.</li> </ol>
<b>Related Practical Exercises (PEXs)</b>	<p><b>LWA 3/1: Manage Fruit Plants</b></p> <p>PEX 1.1: Prune branches</p> <p>PEX 1.2: Train branches</p> <p>PEX 1.3: Monitor growth</p> <p>PEX 1.4: Perform staking</p> <p>PEX 1.5: Construct support structures</p> <p>PEX 1.6: Maintain support structures</p> <p><b>LWA 3/2: Protect Fruit Plants</b></p> <p>PEX 2.1: Scout for pests, diseases and weeds</p> <p>PEX 2.2: Determine control measures</p> <p>PEX 2.3: Apply control measures</p> <p>PEX 2.4: Monitor response</p> <p>PEX 2.5: Prepare crop health report</p> <p><b>LWA 3/3: Conserve Soil and Water</b></p> <p>PEX 3.1: Construct physical soil conservation structure</p> <p>PEX 3.2: Apply fertilisers</p> <p>PEX 3.3: Mulch garden</p> <p>PEX 3.4: Establish irrigation structures</p> <p>PEX 3.4: Perform agro-forestry</p>

	<p><b>LWA 3/4: Perform Occupational Health, Safety and Environmental Protection Practices</b></p> <p>PEX4.1: Observe health, safety and environmental precautions                  PEX 4.2: Observe hygiene and sanitation                  PEX 4.3: Clean tools and equipment                  PEX 4.4: Disinfect tools and equipment                  PEX 4.5: Store chemicals and toxic materials                  PEX 4.6: Manage waste                  PEX 4.7: Administer first aid                  PEX 4.8: Sensitise workers on occupational safety measures                  PEX 4.9: Comply with regulations and policies                  PEX 4.10: Display safety signs                  PEX 4.11: Perform fire fighting</p>
<b>Occupational health and safety</b>	Precautions, rules and regulations on occupational health, safety and environmental protection included in the listed related knowledge should be observed and demonstrated during LWAs and PEXs.
<b>Pre-requisite modules</b>	None
<b>Related knowledge/ theory</b>	<p><i>For occupational theory suggested for instruction/ demonstration, the trainer is not limited to the outline below. In any case, related knowledge/ theory may be obtained from various recognised reference materials as appropriate:</i></p> <ul style="list-style-type: none"> <li>• Crop pests, diseases, weeds and their control</li> <li>• Agro chemical types and handling</li> <li>• Fruit agronomic practices</li> <li>• Methods of staking plants</li> <li>• The importance of hard structures in fruit farming</li> <li>• Soil and water conservation techniques</li> <li>• Occupational health, safety and environmental precautions</li> <li>• Tools and equipment usage</li> <li>• Rules, regulations and policies</li> <li>• Irrigation techniques</li> </ul>
<b>Average duration of learning</b>	<p>160 hours (20 days) of normal learning suggested to include:</p> <ul style="list-style-type: none"> <li>• 5 days of occupational theory and</li> <li>• 15 days of occupational practice</li> </ul>
<b>Suggestions on organisation of learning</b>	The acquisition of competencies (skills, knowledge, attitudes) described in this module may take place at a training centre or its equivalent provided all equipment and materials required for training are in place.

<b>Assessment</b>	Assessment to be conducted according to established regulations by a recognised assessment body using related practical and written test items from Item bank
<b>Minimum required tools/ equipment/ implements or equivalent</b>	panga, spray equipment, spade, pruning shears, ladders, knives, hammers, painting brush, writing brush, metallic labels, pruning saw, irrigation equipment, hoe
<b>Minimum required materials and consumables or equivalent</b>	Water, pesticides, herbicides, poles/ sticks, dry grass, timber, nails, wires, pegs, paint, strings, leguminous plants, fertilisers
<b>Special notes</b>	

<b>Code</b>	<b>UE/FF/M1.4</b>
<b>Module title</b>	<b>Perform Harvest and Post-harvest Handling of Fruit Produce</b>
<b>Related Qualification</b>	Part of: Uganda Vocational Qualification (Fruit Farmer UVQ1)
<b>Qualification Level</b>	1
<b>Module purpose</b>	At the end of this module, a trainee shall be able to harvest fruits timely and handle the produce according to market standards
<b>Learning-Working Assignments (LWAs)</b>	<p><b>LWA 4/1: Harvest Fruit Produce</b>  <b>LWA 4/2: Handle Harvested Produce</b>  <b>LWA 4/3: Maintain Tools and Equipment</b>  <b>LWA 4/4: Perform Occupational Health, Safety and Environmental Protection Practices</b></p> <p><b>Note:</b></p> <ol style="list-style-type: none"> <li>1 The learning exercises may be repeated until the trainee acquires a targeted competence.</li> <li>2 The trainer is advised to deliver relevant theoretical instruction with demonstrations as required to perform each learning working assignment.</li> </ol>
<b>Related Practical Exercises (PEXs)</b>	<p><b>LWA 4/1: Harvest Fruit Produce</b></p> <p>PEX 1.1: Identifying fruits for reaping                  PEX 1.2: Cut/ pick/pluck fruits                  PEX 1.3: Bulk fruits                  PEX 1.4: Pre-sort fruits                  PEX 1.5: Pack fruits                  PEX 1.6: Transport fruits                  PEX 1.7: Dispose rejects</p> <p><b>LWA 4/2: Handle Harvested Produce</b></p> <p>PEX 2.1: Sort fruits                  PEX 2.2: Clean fruits                  PEX 2.3: Grade fruits                  PEX 2.4: Weigh fruits                  PEX 2.5: Pack fruits                  PEX 2.6: Preserve fruits                  PEX 2.7: Store fruits                  PEX 2.8: Take records</p>

	<p><b>LWA 4/3: Maintain Tools and Equipment</b>                  PEX 3.1: Sharpen harvesting tools                  PEX 3.2: Lubricate tools and equipment                  PEX 3.3: Clean and disinfect harvesting tools and equipment                  PEX 3.4: Clean and disinfect store                  PEX 3.5: Clean and disinfect tools                  PEX 3.6: Repair tools and equipment                  PEX 3.7: Paint tools and equipment</p> <p><b>LWA 4/4: Perform Occupational Health, Safety and Environmental Protection Practices</b>                  PEX 4.1: Wear personnel protective gear                  PEX 4.2: Manage waste                  PEX 4.3: Administer first aid                  PEX 4.4: Sensitise workers on health issues                  PEX 4.5: Guide and counsel workers                  PEX 4.6: Display safety signs                  PEX 4.7: Train workers on job hazards and safety precautions                  PEX 4.8: Observe sanitation and hygiene                  PEX 4.9: Comply with regulations and policies</p>
<p><b>Occupational health and safety</b></p>	<p>Precautions, rules and regulations on occupational health, safety and environmental protection included in the listed related knowledge should be observed and demonstrated during LWAs and PEXs.</p>
<p><b>Pre-requisite modules</b></p>	<p>None</p>
<p><b>Related knowledge/ theory</b></p>	<p><i>For occupational theory suggested for instruction/ demonstration, the trainer is not limited to the outline below. In any case, related knowledge/ theory may be obtained from various recognised reference materials as appropriate:</i></p> <ul style="list-style-type: none"> <li>• Fruit maturity indicators</li> <li>• Fruit handling practices</li> <li>• Fruit preservation practices</li> <li>• Market standards</li> <li>• Tools and equipment maintenance</li> <li>• Waste management</li> <li>• Occupational health and safety</li> <li>• Health and environment regulations and policies</li> <li>• Harvesting techniques</li> <li>• Record keeping skills</li> <li>• Communications skills</li> <li>• ICT skills</li> </ul>

<b>Average duration of learning</b>	160 hours (20 days) of nominal learning suggested to include: <ul style="list-style-type: none"> <li>• 5 days of occupational theory and</li> <li>• 15 days of occupational practice</li> </ul>
<b>Suggestions on organisation of learning</b>	The acquisition of competencies (skills, knowledge, attitudes) described in this module may take place at a training centre or its equivalent provided all equipment and materials required for training are in place.
<b>Assessment</b>	Assessment to be conducted according to established regulations by a recognised assessment body using related practical and written test items from Item bank.
<b>Minimum required tools/ equipment/ implements or equivalent</b>	harvesting knives, secateurs, baskets, bags, wheelbarrows, bicycles, tarpaulin, ladders, iron sheets, timber, weighing scale, labels, computer, refrigeration facility, buckets, panga, sharpening tools, boxes, solar dryer, drying beds
<b>Minimum required materials and consumables or equivalent</b>	polythene sheets, water, fumigants, masking tape, paper, fruits, stationery
<b>Special notes</b>	

<b>Code</b>	<b>UE/FF/M1.5</b>
<b>Module title</b>	<b>M1.5: Establish Fruit Farming Enterprise</b>
<b>Related Qualification</b>	<u>Part of:</u> Uganda Vocational Qualification (Fruit Farmer UVQ1)
<b>Qualification Level</b>	1
<b>Module purpose</b>	At the end of this module, a trainee shall be able to establish and manage a profitable fruit farming enterprise
<b>Learning-Working Assignments (LWAs)</b>	<p><b>LWA 5/1: Plan a Fruit Farming Enterprise</b>  <b>LWA 5/2: Market Fruit Produce</b>  <b>LWA 5/3: Perform Basic Administrative Tasks</b>  <b>LWA 5/4: Generate Fruit Farming Records</b>  <b>LWA 5/5: Perform Occupational Health Safety and Environmental Protection Practices</b></p> <p><b>Note:</b></p> <ol style="list-style-type: none"> <li>1. The learning exercises may be repeated until the trainee acquires a targeted competence.</li> <li>2. The trainer is advised to deliver relevant theoretical instruction with demonstrations as required to perform each learning working assignment.</li> </ol>
<b>Related Practical Exercises (PEXs)</b>	<p><b>LWA 5/1: Plan a Fruit Farming Enterprise</b>                  PEX 1.1: Conduct a feasibility study                  PEX 1.2: Select farm site                  PEX 1.3: Determine fruit variety                  PEX 1.4: Source for farm inputs                  PEX 1.5: Identify labour requirements                  PEX 1.6: Determine production methods                  PEX 1.7: Develop site structural plan                  PEX 1.8: Prepare financial plan                  PEX 1.9: Prepare procurement plan</p> <p><b>LWA 5/2: Market Fruit Produce</b>                  PEX 2.1: Conduct market survey                  PEX 2.2: Brand produce                  PEX 2.3: Package produce                  PEX 2.4: Label produce                  PEX 2.5: Price produce                  PEX 2.6: Promote produce</p>

	<p>PEX 2.7: Distribute produce                  PEX 2.8: Sell produce                  PEX 2.9: Communicate with clients</p> <p><b>LWA 5/3: Perform Administrative Tasks</b>                  PEX 3.1: Manage finances                  PEX 3.2: Manage human resources                  PEX 3.3: Pay bills                  PEX 3.4: Formalise business                  PEX 3.5: Generate records                  PEX 3.6: Conduct meetings                  PEX 3.7: Network with stakeholders                  PEX 3.8: Pursue continuous professional development                  PEX 3.9: Comply with regulations and policies</p> <p><b>LWA 5/4: Generate Fruit Farming Records</b>                  PEX 4.1: Prepare production records                  PEX 4.2: Prepare labour records                  PEX 4.3: Prepare sales records                  PEX 4.4: Prepare financial records                  PEX 4.5: Prepare inventory records</p> <p><b>LWA 5/5: Perform Occupational Health, Safety and Environmental Health Protection Practices</b>                  PEX 5.1: Observe health, safety and environmental precautions                  PEX 5.2: Display safety signs                  PEX 5.3: Manage waste                  PEX 5.4: Train workers on health and safety issues                  PEX 5.5: Administer first aid                  PEX 5.6: Comply with safety policies and regulations                  PEX 5.7: Perform fire fighting                  PEX5.8: Observe hygiene and sanitation</p>
<b>Occupational health and safety</b>	<p>Precautions, rules and regulations of applications safety and environmental protection, included in the listed related knowledge should be observed and demonstrated during LWAs and PEXs.</p>
<b>Pre-requisite modules</b>	<p>None</p>
<b>Related knowledge/ theory</b>	<p><i>For occupational theory suggested for instruction/ demonstration, the Trainer is not limited to the outline below. In any case, related knowledge/ theory may be obtained from various recognised reference materials as appropriate:</i></p>



	<ul style="list-style-type: none"> <li>• Marketing techniques</li> <li>• Pricing strategies</li> <li>• Value addition</li> <li>• Harvesting and post-harvest handling techniques</li> <li>• Farm records management</li> <li>• Health, safety and environmental protection practices</li> <li>• Resources mobilisation and management</li> <li>• Business planning and management</li> </ul>
<b>Average duration of learning</b>	160 hours (20 days) of nominal learning suggested to include: <ul style="list-style-type: none"> <li>• <i>5 day of occupational theory and</i></li> <li>• <i>15 days of occupational practice</i></li> </ul>
<b>Suggestions on organisation of learning</b>	The acquisition of competencies (skills, knowledge, attitudes) described in this module may take place at a training centre or its equivalent provided all equipment and materials required for training are in place.
<b>Assessment</b>	Assessment to be conducted according to established regulations by a recognised assessment body using related practical and written test items from Item bank
<b>Minimum required tools/ equipment/ implements or equivalent</b>	Computer, labels, notice boards, communication facility, transport facility, weighing equipment (balance)
<b>Minimum required materials and consumables or equivalent</b>	masking tape, stationery, packaging material, water, cleaning material, fruit products
<b>Special notes</b>	

## 3.0 ATP-PART III

### **Assessment Instruments for a FRUIT FARMER**

- 3.1 Assessment of occupational competence is the procedure by which evidence is gathered and judged to decide if an individual (candidate) has met the stipulated assessment standards.
- 3.2 Assessment of occupational competence should comprise of both practical (Performance) testing and written (theory/knowledge) testing.
- 3.3 Based on the Occupational Profile and Training Modules, a combined panel of job practitioners and Instructors developed a substantial number of test items for assessing (practical) performance as well as items for assessing occupational knowledge (theory) all stored in an electronic Test Item Bank (TIB) at the Directorate of Industrial Training.
- 3.4 Performance (Practical) Test Items (PTI) are closely related to typical work situations in Ugandan business enterprises. They comprise of a test assignment for candidates and assessment criteria and/or scoring guides for assessors' use.
- 3.5 Written Test items (WTI) for written testing of occupational theory, (knowledge) are presented in different forms which include: Short answer test items. Multiple choice test items, Matching test items.  
These WTIs herein focus on functional understanding as well as trouble-shooting typically synonymous with the world of work.
- 3.6 Composition of assessment/test papers will always require good choices of different types of WTI in order to ensure the assessment of relevant occupational knowledge required of candidates to exhibit competence.
- 3.7 The test items contained in the Test Item Bank may be used for continuous/ formative assessment during the process of training as well as for summative assessment of candidates who have acquired their competences non-formally or informally.
- 3.8 In this document, samples of test items for assessing both performance (practical) and occupational knowledge (theory) of a FRUIT FRAMER are included.

3.9. Overview of test item samples included:

No.	Type of Test Item	Numbers included
1.	Written (Theory) - short answer	2
2.	Written (Theory) - multiple choice	2
3.	Written (Theory) - matching item with generic	1
4.	Written (Theory) - matching item with cause and effect	1
5.	Written (Theory) - matching item with work sequence	2
6.	Performance (Practical) test items	2
	<b>Total</b>	<b>10</b>

### WRITTEN TEST ITEMS (SAMPLES)

DIT/ QS	Test Item Database Written (Theory) Test Item- no. 1			
Occupational Title:	Fruit Farmer			
Competence level:	Level 1			
Code no.				
Test Item type:	Short answer	√		
	Multiple choice			
	Matching item	Generic	Cause- Effect	Work- sequence
Complexity level:	C2			
Date of OP:	August 2020			
Related module:	M 1.1			
Time allocation:	2 minutes			

Test Item	List any three benefits of sterilising the soil in establishment of fruit nursery
Answer spaces	(i) ..... (ii) ..... (iii) .....
Expected key (answers)	(i) To control pests (ii) To eliminate disease causing agents (iii) To control weed growth (iv) To add nutrients e.g. potash

DIT/ QS	Test Item Database Written (Theory) Test Item- no. 2			
Occupational Title:	Fruit Farmer			
Competence level:	Level 1			
Code no.				
Test Item type:	Short answer	√		
	Multiple choice			
	Matching item	Generic	Cause-Effect	Work-sequence
Complexity level:	C2			
Date of OP:	August 2020			
Related module:	M 1.2			
Time allocation:	3 minutes			

Test Item	List any four activities performed when transplanting fruit seedlings
Answer spaces	(i) ..... (ii) ..... (iii) ..... (iv) .....
Expected Key (answer)	(i) Transportation (ii) Shading of seedlings (iii) Digging of holes (iv) Planting seedlings (v) Applying fertilisers (vi) Watering seedlings (vii) Trimming roots (viii) Mulching garden

DIT/ QS	Test Item Database Written (Theory) Test Item- no. 3			
Occupational Title:	Fruit Farmer			
Competence level:	Level 1			
Code no.				
Test Item type:	Short answer			
	Multiple choice	√		
	Matching item	Generic	Cause-Effect	Work-sequence
Complexity level:	C2			
Date of OP:	August 2020			
Related module:	M 1.3			
Time allocation:	2 minutes			

Test Item	Which of the following is an agro-chemical for controlling fruit flies?
Answer spaces	A. Matricide B. Fungicide C. Acaricide D. Insecticide

Key (answer)	D
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DIT/ QS	Test Item Database Written (Theory) Test Item- no.4			
Occupational Title:	Fruit Farmer			
Competence level:	Level 1			
Code no.				
Test Item type:	Short answer			
	Multiple choice	√		
	Matching item	Generic	Cause-Effect	Work-sequence
Complexity level:	C2			
Date of OP:	August 2020			
Related module:	M 1.2			
Time allocation:	2 minutes			

Test Item	Which stage prepares the seedling for transplanting?
Distractors and correct answers	A. Germination B. Plotting C. Hardening off D. Pricking

Key (answer)	C
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DIT/ QS		Test Item Database Written (Theory) Test Item- no. 5			
Occupational Title:	Fruit Farmer				
Competence level:	Level 1				
Code no.					
Test Item type:	Short answer				
	Multiple choice				
	Matching item	Generic	Cause-Effect	Work-sequence	
		√			
Complexity level:	C3				
Date of OP:	August 2020				
Related module:	M 1.2				
Time allocation:	5 minutes				

<b>Test item</b>	Match the following practices involved in the raising of seedlings with their respective activities
------------------	---

Column A (Practices)	
1	Make a nursery bed
2	Control pests and diseases
3	Harden off seedlings
4	Thinning of seedlings

Column B (Activities)	
A	Fertiliser application
B	Spraying
C	Root trimming
D	Pulverising soil
E	Removal of shade cover
F	Uprooting of extra seedlings

<b>Key (answer)</b>	1:D, 2:B, 3:E, 4:F
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DIT/ QS		Test Item Database Written (Theory) Test Item- no. 6		
Occupational Title:	Fruit Farmer			
Competence level:	Level 1			
Code no.				
Test Item type:	Short answer			
	Multiple choice			
	Matching item	Generic	Cause-Effect	Work-sequence
			√	
Complexity level:	C2			
Date of OP:	August 2020			
Related module:	M 1.2			
Time allocation:	3 minutes			

<b>Test Item</b>	Match the following seedling growth defects in Column A with their causes in Column B
------------------	---

Column A (Growth Defect)	
1	Seedling wilting
2	Etiolated seedling
3	Seedling dumping off
4	Downy Mildew

Column B (Causes)	
A	Overstayed thatch
B	Poor irrigation
C	Un pulverised nursery bed
D	Water stress
E	Poor drainage
F	Poor field sanitation

<b>Key (answer)</b>	1:D, 2:A, 3:E,4:F
---------------------	-------------------

DIT/ QS		Test Item Database Written (Theory) Test Item- no. 7			
Occupational Title:	Fruit Farmer				
Competence level:	Level 1				
Code no.					
Test Item type:	Short answer				
	Multiple choice				
	Matching item	Generic	Cause-Effect	Work-sequence	
				√	
Complexity level:	C 2				
Date of OP:	August 2020				
Related modules:	M 1.1				
Time allocation:	4 minutes				

<b>Test Item</b>	Arrange the steps followed when setting up a nursery bed in their chronological order
------------------	---

Column A (chronology)	Column B (work steps) in wrong chronology	
1 <sup>st</sup>	A	Sterilise soils
2 <sup>nd</sup>	B	Select site
3 <sup>rd</sup>	C	Prepare land
4 <sup>th</sup>	D	Prepare seeds/ other propagation materials
5 <sup>th</sup>	E	Prepare seed bed
6 <sup>th</sup>	F	Sow seeds/ other propagative materials
7 <sup>th</sup>	G	Harden seedlings
8 <sup>th</sup>	H	Erect nursery shade

<b>Key (answer)</b>	1:B, 2: C, 3: D, 4:E, 5-A, 6:F, 7:H, 8:G
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DIT/ QS	Test Item Database Written (Theory) Test Item- no. 8			
Occupational Title:	Fruit Farmer			
Competence level:	Level 1			
Code no.				
Test Item type:	Short answer			
	Multiple choice			
	Matching item	Generic	Cause-Effect	Work-sequence
				√
Complexity level:	C2			
Date of OP:	August 2020			
Related module:	M 1.2			
Time allocation:	5 minutes			

Test Item	Re-arrange the steps followed when establishing a fruit garden
-----------	--

Column A (chronology )	Column B (work steps) in wrong chronology	
1 <sup>st</sup>	A	Until land
2 <sup>nd</sup>	B	Demarcate land
3 <sup>rd</sup>	C	Clear site
4 <sup>th</sup>	D	Apply fertilisers
5 <sup>th</sup>	E	Fence garden
6 <sup>th</sup>	F	Transplant seedlings

Key (answer)	1:B, 2:C, 3:A, 4:D, 5:F, 6:E
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## PERFORMANCE TEST ITEMS (SAMPLES)

DIT/ QS	Test Item Database Performance Test Item- no.9
Occupational Title:	Fruit Farmer
Competence level:	Level 1
Code no.	
Test Item:	Prepare a nursery bed 3m x 1m and sow lemon seeds
Complexity level:	P2
Date of OP:	August 2020
Related modules:	M1.1
Related skills and knowledge:	<ul style="list-style-type: none"> <li>• Seed bed preparation</li> <li>• Soil sterilisation</li> <li>• Seed germination</li> <li>• Sources of water</li> <li>• Plant propagation</li> <li>• Measurements</li> <li>• Fertiliser types and application techniques</li> <li>• Weeds and their control</li> <li>• Pests and disease control</li> <li>• Soil types</li> <li>• Soil and water conservation techniques</li> <li>• Nursery bed establishment</li> </ul>
Required tools, Materials and Equipment:	hand hoe, panga, rake, garden fork, assorted nails, bow saw, wheelbarrow, wooden poles, papyrus mats, reeds, lemon seeds, sisal rope, polythene material, pieces of ply wood, watering can, tape measure, organic matter, water, dry cloth, dry grass insecticide, land, container
Time allocation:	4 hours
Preferred venue:	Farm
Remarks for candidates	<ul style="list-style-type: none"> <li>• Avail protective wear</li> <li>• Observe health, safety and environmental protection practice</li> </ul>
Remarks for assessors	<ul style="list-style-type: none"> <li>• Provide all the tools, equipment and materials listed above</li> <li>• Provide lemon seeds to learners</li> </ul>

#	Assessment criteria	Scoring guide	Max. Score	
			Process	Result
1	Preparation before task	<u>Wore protective gear:</u> Overall Gum boots Hand gloves Head gear		1 1 1 1
		Assembled tools, equipment and materials		2
2	Preparation of nursery seed bed	Cleared site	2	
		A vegetation free site observed		2
		Measured nursery bed area	2	
		Ground specifications observed (3mx1m) and verified		2
		Pulverised site	3	
		Fine tilth observed		2
		Raised bed	2	
		Raised bed specification of 3mx1m observed		2
		Sterilised soils in the nursery bed	3	
		Even distribution of ash observed		2
		Incorporated organic matter	3	
		Fine growth media in the bed observed		2
		Made farrows in the bed	2	
		Parallel farrows observed		1
3	Sowing of seeds	Opened seed pack	2	
		Removed seeds from the pack	1	
		Uniformly distributed seeds in farrowed rows	2	
		Seeds observed at 10cm interval spacing in farrow		2
		Covered seeds with a thin soil layer	2	
		Uniformly levelled nursery bed observed		1

#	Assessment criteria	Scoring guide	Max. Score	
			Process	Result
		Mulched bed	2	
		Evenly spread mulch observed on the bed		1
		Watered the bed	3	
		Uniformly wetted mulch observed		2
4	Construction of shade	Measured and pegged fence post points	3	
		Pegs observed longitudinally at 1m spacing		2
		Measured and cut fence posts	3	
		Posts of 1.5m observed		1
		Dug holes	2	
		0.3m deep holes observed and verified		1
		Fixed posts in holes	2	
		Erect posts observed	2	
		Measured ties to specifications		2
		Nailed ties to posts	2	
		Fixed support reeds	3	
		Fixed papyrus mat on to the ties	2	
		Labelled nursery		3
		A firm shade observed		4
7	Demobilisation of resources	Cleaned tools and equipment	2	
		Collected unused materials	2	
		Returned tools, equipment and unused materials to store		2
		Cleared work area		1
		Disposed waste		2
		Removed protective gear		2
	<b>TOTAL</b>		<b>52</b>	<b>45</b>
	<b>MAXIMUM SCORE (Y)</b>	X/Y X100	<b>97</b>	

## 4.0 ATP- PART IV

### INFORMATION ON REVIEW PROCESS

#### 4.1 Occupational Profile Development (August 2020)

The Assessment and Training Package was exclusively reviewed by job practitioners of the fruit farmer occupation, secondary school teachers who double as examiners of Agriculture with the Uganda National Examinations Board (UNEB) and Curriculum Development Specialists working with the National Curriculum Development centre (NCDC).

The job expert panel, guided by UVQF facilitators reviewed duties and tasks performed and provided additional generic information regarding the occupation.

#### 4.2 Training Module Development (August 2020)

Based on the reviewed Occupational Profile for Fruit Farmer of August 2020, Training Modules were reviewed by job practitioners, guided by UVQF facilitators.

#### 4.3 Test Item Development (August 2020)

Based on the reviewed Occupational Profile for Fruit Farmer of August 2020, and Training Modules of September 2020, Test Items were reviewed by combined panels of Teachers and job practitioners, guided by UVQF Facilitators.

#### 4.4 Methodology

The rationale for the Assessment and Training Package development was to link Vocational Education and Training to the real world of work by bridging Occupational Standards to Training Standards through industry-led Standards-Based Assessment.

Active participation of both teachers and job practitioners' panels consolidated the development philosophy.

The panellists worked as teams in workshop settings complemented by off-workshop field research and literature review activities including international benchmarking.

#### 4.5 Development Panels

The participating panels of job practitioners required at for the review exercise were constituted by members from the following organisations:

Review panel		
No.	Name	Institution/ Organisation
1.	Mr. Golomba Wilberforce	Tororo Girls School
2.	Mr. Wafula Moses	Kigulu College Namung'alwe
3.	Mr. Ekwaro Benson	Kyambogo College School
4.	Mr. Mutebi Mustafa	Local farmer
5.	Ms. Nalwanga Teopista	Majo Mixed Farm
6.	Dr Ashaba Denis	NARO Kachwekano
7.	Mr. Muhindi Paul	Sheema Integrated Community Development Organisation
8.	Mr. Kahangangire Valerian	Local farmer
9.	Ms Nyanzi Flavia	NCDC Kyambogo
10.	Mr. Atuhair Francis	Local farmer
11.	Mr. Sserwanga Joseph	Bukalasa Agricultural College

#### 4.6 Facilitator team

This Assessment and Training Package was reviewed by a Facilitator team listed below:

1. **Team Leader:** Ms. Mukyala Ruth, Ag Deputy Director, DIT
2. **Facilitators:** Ms. Safinah Nakyobe, PQO, DIT, Ms. Ahimbisibwe Judith, Ms. Maureen Asiimwe, Ms. Sarah Atai.
3. **Data Entrants:** Mr. Benjamin Alex Kibira, Ms. Tuhirwe Doreen, Ms. Fortunate Kyatuhire, Ms. Sarah Asiimwe Mashaija, Ms. Pamela Babirye and Ms. Fatuma Nakisenda
4. **Compiled by:** Mr. Benjamin Alex Kibira DE DIT
5. **Edited by:** Ms. Mukyala Ruth Ag. DD, DIT, Qualification Standards Dept. DIT
6. **Coordinated by:** Mr Byakatonda Patrick, Ag. Director, DIT.

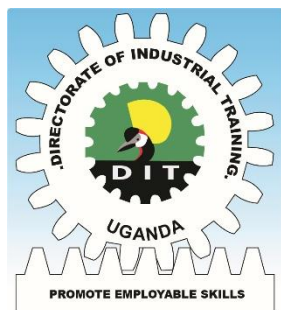


#### 4.7 Reference time:

This Assessment and Training Package was compiled in August 2020 and may be periodically revised to match the dynamic trends in the occupation and hence issued in different versions:

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