

EXAMINATIONS COUNCIL OF ESWATINI

EPC

EXAMINATION REPORT

FOR

AGRICULTURE (616)

YEAR

2022

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Paper 616/01

Introduction

The modern agriculture syllabus covers the last two years of primary school education (Grades 6 & 7). It covers a wide spectrum of topics; from theory to practical activities, all of which are examinable. The practical activities are in both crop science (field crops and vegetables) and livestock (mainly poultry and broilers).

This paper consisted of two sections (Section A and Section B). Section A consisted of 20 multiple choice questions, while Section B comprised of 15 short simple response questions, which required one word or a few sentences/statements.

The general performance of the candidature was above average and was just above the 2021 session. However, some Centres performed very well overall, as well as individual candidates in specific Centres. The marks ranged from 01 to 95 percent this year. A majority of the candidates had serious challenges in those questions which required practical experiences, handling of information, as well as application and synthesis. It is, therefore, recommended that all practical activities required by the syllabus should be done by all Centres offering the subject.

SECTION A: Multiple Choice

Individual question analysis

There were 20 multiple choice questions in this section. Four possible answers were provided for each question, and the candidates were required to indicate their responses by writing the letter corresponding to the best answer in a box provided on the question paper, using a soft pencil. Each question was worth one mark.

Comment

This section was fairly done by a majority of the candidature across the centres. However, there were a few questions which seemed to be challenging to some Candidates. Questions 3, 10 and 17 were poorly done by a sizeable majority of the Candidates.

Question 3

Which tool can be used for de-stumping?

Expected response: (C) pick.

Comment: this question was poorly answered by a majority of the candidates. Common wrong response was: (B) hoe.

Question 10

Which disease of vegetable is indicated in fig.10.1

Expected response: (C) late blight.

Comment: this question was poorly answered by a majority of the candidates. Common wrong response was: (A) black rot.

Question 17

Name the layer labelled X

Expected response: (B) parent rock.

Comment: this question was poorly answered by a majority of the candidates. Common wrong response was: (A) bed rock.

Questions which were accessible

Questions 1

Which are examples of natural resources in agriculture production?

Expected response: (C) land and rainfall.

Comment: this question was well answered by a majority of the candidates. Common wrong response was: (D) rainfall and tractor.

Question 2

What percentage of land in Eswatini is Title Deed Land?

Expected response: (B) 46%

Comment: this question was well answered by a majority of the candidates. Common wrong response was: (54%)

Question 4

Why is it important for a vegetable garden to be on a flat land?

Expected response: (D) to prevent soil erosion by rain and wind.

Comment: this question was well answered by a majority of the candidates. Common wrong response was: (A) to allow the vegetable to grow equally.

Question 6

Which of the following vegetables is a root?

Expected response: (A) beetroot.

Comment: this question was well answered by a majority of the candidates. Common wrong response was: (D) onion.

Question 8

Why is organic matter added into the soil?

Expected response: (B) it provides nutrients for growth.

Comment: this question was well answered by a majority of the candidates. Common wrong response was: (C) it provides oxygen for growth.

SECTION B: Individual question Analysis

Question 1

(a) State any three benefits of Agriculture

Expected response: basic needs (food, shelter and clothing), employment /jobs, money/ income, boost the economy.

Comments: exceptional well answered by a majority of candidates

(b) Explain the nomadic lifestyle of farming

Expected response: Farmers moved from one place to another to search for food and water.

Comments: fairly performed by candidates but some candidates wrote a wrong response by describing traditional farming

Question 2

(a) Name three materials which were used to carve and shape traditional tools.

Expected response: wood, animal bones, stones.

Comments: generally, well answered

(b) Explain the freehold land tenure systems

Expected response: land owned through local authorities without payment/ owner owns the land as long as his or her descendants live.

Comments: this question was not accessible to a majority of candidates as they seemed to confuse the term free-hold with leasehold thus ended up describing title deed land.

Question 3

(a) State any three examples of technological equipment used in animal production.

Expected response: automatic feeders and waters, battery cages, milking machine.

Comments: this question was well answered by a majority of the candidates.

(b) Explain how Agricultural technology can improve animal production.

Expected response: technology can be used to modify animals to make them grow faster, technology alerts a farmer when an animal in the farm is unwell.

Comments: average performance question by a majority of the candidates

Question 4

- (a) **State two things which are shown by a financial record in a farm business.**

Expected response: shows money used (expenditure), shows money gained (income)

Comments: this question was well answered by a majority of the candidates.

- (b) **Explain the purpose of a diary.**

Expected responses: to record day to day record of activities; helps remember what was done; can be used as a reference; to remind the farmers about treatment which was done; which method was used; helps to see which techniques were used.

Comments: candidates performed exceptionally well in this question.

Question 5

- (a) **What is a vegetable?**

Expected responses: an edible plant or part of a plant which is eaten either raw or cooked.

Comments: this question was generally well answered by a majority of the candidates.

- (b) **Give two ways of planting vegetables.**

Expected responses: direct planting; in-direct /transplanting.

Comments: the performance was above average

- (c) **Explain the importance of fine tilth.**

Expected responses: for growth of seeds; for easy drainage; air circulation.

Comments: it was challenging as a majority of the candidates performed far below average

Question 6

- (a) **Name the three major plant nutrients represented by 2:3:2 (22) +0.5Zn in fertiliser.**

Expected responses:

2 - Nitrogen (N)

3 - Phosphorus (P)

2 - Potassium (K)

Comments: generally, well answered question

- (b) **State the type of fertilizer that contains more than one nutrient.**

Expected responses: compound fertilizer.

Comments: this question was well answered by a majority of the candidates

(c) Explain the importance of watering after fertilizer application.

Expected responses: to dissolve the fertilizer; to allow absorption.

Comments: this question was well answered by a majority of the candidates

Question 7

(a) Fig. 7.1 shows a vegetable weed that has attacked a maize crop.

Name the weed indicated in Fig 7.1



Expected responses: witch weed.

Comments: this question was poorly answered by most candidates

(b) Give any two reasons for removing weeds

Expected responses: they compete for water; air; sunlight; nutrients; to reduce the spread of pests.

Comments: this question was well answered by a majority of the candidates

(c) Explain how weeds are spread by animals.

Expected responses: weeds eaten by animals and taken out with waste material; weeds carried by animals and dropped in other places.

Comments: this question was generally, well answered by a majority of the candidates

Question 8

(a) Name one vegetable that is attacked by CMR beetle.

Expected responses: green beans.

Comments: most of the candidates did not perform well performed well in this question. candidates responded by stating beans instead of great beans.

(b) State any two ways of controlling pests in vegetables.

Expected responses: chemicals and natural.

Comments: a generally, well answered question

(c) Describe how aphids feed on vegetables.

Expected responses: pierce the leaves and suck the sap/juice.

Comments: this question was not accessible to a majority of the candidates. A majority of candidates states that aphids eat the plant.

Question 9

(a) State one sign which shows that the following vegetables are ready for harvest.

(i) tomatoes: when the fruit turn light red

(ii) cabbage: when the head is firm

(iii) onion: when the leaves turn brown and fall over

Comments: a majority of the candidates performed well in question (i) and (ii) and question (iii) onion was not accessible to the candidates

(b) Explain why is it important to replace transplants.

Expected responses: for uniform growth; to save space; to avoid soil erosion.

Comments: this question was poorly answered

Question 10

(a) State any three signs which shows that mushrooms are ready.

Expected responses: veil underneath the mushroom tears; veil cover the gills; spores fall from the gills

Comments: Most candidates performed poorly I this question

(b) State the environmental conditions suitable for storing harvested mushrooms.

Expected responses: cool place.

Comments: the candidate performance was far below average in this question

(c) Describe any two ways of preparing mushrooms for market.

Expected responses: mushroom must be kept in a cool place; weigh the mushroom; arrange them neatly and pack them; price the package according to weight.

Comments: candidates performed poorly in this question

Question 11

(a) State any two benefits of crop rotation.

Expected responses: control pests and disease; keep the soil fertile.

Comments: this question was generally well answered

(b) Table 11.1 shows different crop spacing. Complete the following table.

Crops	Spacing between rows	Spacing between plants
Maize	(i).....	25-30cm
Beans	45cm	(ii).....

Expected responses: (i) 90cm (ii) 10cm.

Comments: Most candidates performed exceptionally well in this question.

(c) Explain the signs of a maize plant affected by a maize streak disease.

Expected responses: yellow to white stripes down the leaves; the plant stunted growth.

Comments: a well answered question by most candidates.

Question 12

(a) State any two main parts of a flower.

Expected responses: sepal; petal; stamen; pistil/carpel.

Comments: candidates performed below average. A majority of candidates mentioned any part of a flower or any part of a plant without stating the correct answer.

(b) Outline any two important functions of the stem.

Expected responses: support branches; carry water and nutrients up the plant; carry carbohydrates from the leaves to the roots.

Comments: this question was generally, well answered by a majority of the candidates.

(c) Explain the role of air in plant growth.

Expected responses: seeds need air to germinate; for photosynthesis.

Comments: this question was generally well answered

Question 13

(a) What is soil?

Expected responses: upper layer of the earth; loose top layer; loose top layer covering the earth surface.

Comments: candidates' performance was above average in this question.

(b) State any four components of the soil.

Expected responses: mineral particles; organic matter; soil water and soil air.

Comments: this question was not well answered, a majority of candidates were stating the layers of the soil profile; some were giving the different types of soil.

Question 14

(a) State the two agents of soil erosion.

Expected responses: wind and water.

Comments: exceptional well answered question.

(b) Describe any two ways of controlling erosion.

Expected responses: crop rotation; cultivate across the slope; cover the soil.

Comments: this question was generally, well answered

(c) Explain how soil erosion affects crop production.

Expected responses: topsoil is removed; nutrients are lost; soil structure is degraded; formation of gullies.

Comments: this question was generally, not well answered, a majority of candidates defined soil erosion in this Question.

Question 15

(a) State how farmers can improve the farming of indigenous chickens.

Expected responses: provide shelter; provide quality feed.

Comments: this question was not well answered, candidates were giving the importance of indigenous chickens

(b) Explain why a farmer will prefer to buy four-weeks old broilers.

Expected responses: they are strong; kept for a short time before selling; they have been vaccinated.

Comments: average performance by candidates.

EPC AGRICULTURE PAPER (616/02) Practicals
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INTRODUCTION

Paper 2 is a continuous assessment of the candidate's practical work compiled by the teacher. The Teacher, who is responsible for allocating marks, is required to submit the complete schedule of all marks for the purpose of moderation. The total marks available for the assessment of the practical project over the two-year course is 100. There is one practical project worth 60 marks and one written report based on the project worth 40 marks.

GENERAL COMMENTS

In 2022, the overall performance indicates a significant improvement as compared to 2021. More consultation is still needed between ECESWA and agriculture teachers to ensure optimal performance and good standards in accordance with the expectations of the Exams council of Eswatini.

MODERATION

- Individual Candidate Record Cards and Coursework Assessment Summary Forms were provided by Examination Council of Eswatini (ECESWA). The Forms were to be submitted to ECESWA by the official deadline, along with a representative sample of work and a teacher's file with the instructions for the practical work and the schemes of assessment.
- All candidate's work was submitted in a presentable folder file with the following information written outside: Centre number, Centre name, candidate's number, candidate's name, project title.
- If there were ten or fewer candidates, all the work that contributed to the final mark for all the candidates were submitted.
- Eleven to fifty candidates, ten sampled candidates' files were submitted.
- Fifty-one to one hundred candidates, fifteen candidates' sampled files were required.
- One hundred and one and above candidates, twenty sample files were required.

Number of candidates	Number of files
1 - 10	All
11 - 50	10
51-100	15
101 and above	20

TEACHER'S FILE

Most centres were able to submit the teachers' file with all the expected content on time.

REGISTERS

A few centres marked the register correctly whilst a majority of the centres did not mark it correctly e.g. omitting the page totals; not marking the register at all. Some centres submitted the register with the Paper 1 envelope whilst others did not submit the register at all.

MS1/ MARK SHEET (LOZENGES)

It was noted that a majority of the centres submitted the mark sheets, and a few did not submit them. Some of the submitted mark sheets had missing information. e.g., candidate marks. Others were filled using ink, instead of a pencil, punched or stapled. Some centres entered the marks but did not shade or vice versa. Teachers are requested to make reference to the instructions provided at the back of the mark sheet.

SAMPLING

Teachers at the centres were expected to sample three categories: top students, moderate and low students. They were also expected to indicate with asterisk (*) the sampled candidates. The packaging of files was expected to be according to the candidates' scores ratings. The top student at the top and the lowest student at the bottom.

A majority of the centres sampled correctly according to expectation. A few centres sampled incorrectly or did not sample at all. They either submitted all the candidate's' practical work or the number of sample files were more or less than the expected samples.

SUMMARY SHEET

All centres submitted well written summary sheets. However, some of the centres submitted summary sheets with decimals. Teachers are urged to round-off decimal numbers to whole numbers and to indicate sampled candidates by asterisk (*) .

STUDENT CARDS

Teachers are expected to place the student cards on top, inside the candidate's file. A majority of the centres submitted well written cards, with the practical's written in chronological order. Some of the centres had the cards placed at the back of the file. A few centres had cards with wrong calculations, loose cards or cards in teacher files, cards for all candidates at the Centre instead of sampled candidate's card, cards in separate envelopes and in exercise book covers instead of folder files.

Teachers are encouraged to write the topic of the project in which the candidates are assessed, under the topic "brief description of practical" (e.g., maize production, cabbage production, broiler production etc.).

PRACTICALS

Choosing a practical task: most centres were able to select practical tasks from different areas of the syllabus. Examples: vegetables production, crop production and broiler production.

Criteria: Almost all the centres had followed the well written format of the level of descriptors. Fewer centres had the level of descriptors mixed. For examples starting with initiative. This resulted in some level of categories being omitted in the process.

Descriptors: A majority of the centres had properly designed descriptors. Few centres had descriptors which were not specific (general), similar in all practicals. There was also a variation in the number of descriptors within a practical and within a category. In some categories there were 5, 4, or 3 descriptors. Some Centre failed to formulate descriptors that meets the required standard for level 1/0 (more assistance level).

The use of “do not”, “fails to” and “never” was common in most centres which did not perform well in this level. This creates an impression that there are some candidates who are allowed not to take part in the practical exercise if they want to. Examples of terms that can be used in this level when formulating the descriptors are; forced to; under strict supervision; need full assistance etc.

Almost all the Centre submitted candidates file with descriptors on time. A few centres did not submit on time. Also avoid using the same descriptors for different vegetables e.g., using onion descriptors for spinach.

SCALING

A majority of the centres had proper scaling, for example.

- 5/4
- 3/2
- 1/0

Fewer centres had incorrect scaling, they used fractions and improper scaling for example.

- 4/5
- 2/3
- 0/1

TEACHER’S REMARKS

A majority of the centres had teachers’ remarks on the marks allocated to candidates, which is a very good practise by all centres. However, a few centres did not make remarks as expected. They awarded the marks only. Teachers are encouraged to make their own remarks in relation to performance of the candidates.

EVIDENCE

Evidence in the form of pictures, production records/harvest records and diaries are ideal to a practical exercise. Almost all the centres submitted diaries as evidence. Very few centres did not submit any evidence. centres are encouraged to submit evidence in the form of pictures or diaries.

PACKAGING

Paper folders should be used with string fastens. Binding is not encouraged. The teachers file and the sampled candidates' files should be packed together in one envelope, not in different or separate envelopes. Each sampled candidate should have only one file having the practical and the write up packed together not separate files. In the teachers file there should be all the content as stated in the exam syllabus. Some centres submitted teachers' files without descriptors for practical's carried in their respective schools.

GUIDED WRITE- UP REPORT

Title: centres are encouraged to link the write up with the practical carried out, for example if the practical was on spinach, the write up should be on spinach production. The report should bear a clear title. This should appear on the first page, together with the name of the candidate and the name of the Centre. All the centres managed to clearly write the project title.

Introduction – Should introduce the chosen project. The majority of the centres were able to write the appropriate introduction.

- **Objectives** – specific purpose of doing the project or practical. The objectives carried 4 marks; therefore, candidates were expected to list 2 relevant objectives for them to obtain full marks. Almost all centres were able to list 2 relevant objectives. Fewer centres listed general objectives.
- **Materials used** – listing of inputs, tools, and equipment. This part carried 4 marks.

A majority of the centres listed all the tools, equipment and inputs, although some of the centres did not list the main inputs such as seedlings, seeds, chicks, litter, etc.

- **Preparations (crops & vegetables)** – discussion of activities in land preparation in its sequential order, prior to the management stage. The preparation stage carries 8 marks; therefore, candidates were expected to cover all related activities.
- All steps/activities prior commencement of project were well covered.
- Primary preparation-land clearing
- Secondary preparation: cultivation, marking out plots (compliant to rule 3, 4, 5 and marking of base line was an added advantage). Making fine tilt, adding manure.
- Planting - basal fertilizer, spacing, shading.

Most centres performed exceptionally well under this category (preparations stage). Almost all candidates scored marks above average, notable, planting and transplanting activities. candidates should be guided accordingly, to discuss planting and transplanting activities under preparations practices, not management practices.

- **Preparations (Poultry production)** – detailed preparation (explain clearly how the practical was carried out). All preparation on arrival. The preparation stage carries a weight of 8 marks; therefore, candidates were expected to cover all related activities.
- All steps and activities involved.
- Before arrival preparation.
- Cleaning and disinfection of the poultry house two weeks before arrival.
- Making necessary repairs of the poultry house.
- Checking the state of the drinkers and feeders and marking necessary repairs
- Washing and disinfection of feeders and waterers
- Provide brooder for temperature regulation
- Putting drinkers and waterers on position
- On arrival preparation;
- Put feed on feeders and water in waterers
- Give stress pack
- Preparing a foot bath

Most centres performed exceptionally well under the preparations stage. The candidate's work was well presented, clearly marked sub- topics. Almost all the candidates scored marks above average.

Management Activities - This is a description of how the project was done stating the activities carried out. The management activity stage carries 10 marks, therefore candidates were expected to cover all related activities e.g.

- Describe how work was done from planting to harvesting.
- Explain how activities were done from arrival until sale of livestock was ready. A majority of the centres performed above average.

Presentation of production records - yield of crops; livestock. These stage carries a weight of 10 marks; therefore, candidates were expected to cover all related activities. The records should include the following.

- Diary
- Harvest record
- Costs/Expenditure
- Income/Returns
- Profit/Loss

This stage recorded a significant improvement as it was performed exceptional well. A majority of centres were able to score marks above average. It was noted from the candidate's diaries were frequently assessed.

Conclusions - This stage carries 4 marks; therefore, candidates were expected to cover all related activities. The conclusions should include the following:

- Explain if the specific objectives of the practical activity were met.
- Problems encountered and relevant solutions.
- Relevant recommendations are an added advantage.

Performance in conclusion rated above average. A majority of the centres were able to state specific objective and problems encountered. Some centres were able to state other relevant.

recommendations. Some of the centres stated either objectives met, or problems encountered without full details. Added relevant recommendation were noted and awarded. Such recommendations are not limited to stating that the importance of high production volumes for cost effectiveness and high profit margins, and over stating the benefits of timely management practices.

Recommendations

Teachers are encouraged to allow learners to independently write the report as they will express themselves the way they understood and carried out the project. Teachers should avoid writing the write up on the board since this then reflects on the individuals work that the pupils have presented. Teachers are requested to respond timeously when requested come and provide clarity on certain aspects of the scripts.