

***EXAMINATIONS COUNCIL OF ESWATINI***

**EPC**

**EXAMINATION REPORT**

**FOR**

**AGRICULTURE (616)**

**YEAR**

**2021**

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**EPC AGRICULTURE PAPER (616/1)**

**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, was a little lower than the 2018 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; and 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.

## Individual Question Analysis

### SECTION A: Multiple Choice

This section comprised of twenty multiple choice questions. Four possible answers were given, 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:** The overall performance was above average in this section. However, a majority of the candidates had challenges with those questions which required practical experiences. The most poorly answered questions were 2, 6,10,11,12, 18.

**Question 2:** Which are the characteristics of a good site for a vegetable garden?

**Expected response:** slightly sloping with good soil

**Question 6:** Which is a sign of wind erosion?

**Expected response:** large dusty clouds

**Question 10:** Which type of record is used by a farmer to enter the number of eggs laid in the farm?

**Expected response:** production record

**Question 11:** Which vegetable disease is controlled by disinfecting the seeds before planting?

**Expected response:** black rot

**Question 12:** What is the purpose of harrowing a field before planting?

**Expected response:** to prepare fine tilth

**Question 18:** Which component of the cropping house is used for growing the mushroom?

**Expected response:** fruiting room

Questions which seemed to be accessible and answered correctly by an overwhelming majority of the candidature were 3, 9, 19, 20.

**Question 3:** Which vegetable is a fruit?

**Expected response:** tomato

**Question 9:** What is the percentage of Swazi National land in Eswatini?

**Expected response:** 54%

**Question 19:** Which type of soil contains very small particles?

**Expected response:** clay

**Question 20:** What is the profit of a vegetable production business with a total cost of E80.00 and a total return of E180.00?

**Expected response:**E100.00

## SECTION B: Short answers

### Question 1

- (a) (i) **State any two ways in which agriculture boost the economy of Eswatini.**

**Expected response:** (i) provide jobs/create jobs; (ii) selling agriculture products /exporting agricultural products

**Comment:** This question was answered exceptionally well by a majority of the candidates.

- (b) **Explain how animals are used to provide clothing in agriculture.**

**Expected response:** (i) the skin of some animals is processed into leather which is used to make leather jackets and shoes; (ii) wool from sheep is used to make fabric

**Comment:** This question was done exceptionally well by a majority of the candidates.

### Question 2

- (a) **State any two advantages of modern farming.**

**Expected response:** (i) work done in a short time; (ii) The farmer used improved breeds, feed, cultivars, fertilizers to get better yield.

**Comment:** The performance in this question was very good. The candidates provided very good responses.

- (b) **Explain how modern farming improves the skills of farmers.**

**Expected response:** it encourages farmers to share knowledge in order to help other farmers with new skills.

**Comment:** This question was poorly answered.

- (c) **Explain how modern farming is practised.**

**Expected response:** require large area of land; farmers must use farming machinery to help work the land; this help to prepare the land in a short time

**Comment:** this question was fairly answered but some candidates mixed responses from (b) and (c).

### Question 3

- (a) **State two ways in which Extension Officers help families in rural areas.**

**Expected response:** (i) maize spacing; proper use of fertiliser; use of hybrid seeds (ii) importance of crop management; food preservation; proper food preparation.

**Comment:** The performance in this question was below average. A majority of the candidates were mixing the functions of extension officers with the purposes of RDAs.

- (b) **Explain the purpose of the Rural Development Areas (RDA) to farmers.**

**Expected response:** to provide services that would help farmers improve their farming methods.

**Comment:** An average performance was realised in this question.

(c) **Explain how maize seeds are selected traditionally.**

**Expected response:** seeds were selected from big crop with suitable seeds from the harvested maize.

**Comment:** The performance in this question was below average. Most candidates were explaining traditional methods of storing crops.

**Question 4**

(a) **Name two plant parts which grow faster after top dressing.**

**Expected response:** leaves, stem, fruit, flower.

**Comment:** this question was answered exceptionally well.

(b) **Describe how top dressing fertilizer is applied.**

**Expected response:** applied 10-15cm around the plant or along the row; cover the fertilizer and water.

**Comment:** An average performance was realised in this part of the question. However, there were candidates who defined top dressing instead of describing how it is done.

**Question 5**

(a) **Name the equipment shown in figure 5.1**



**Fig, 5.1**

**Expected response:** milking machine

**Comment:** The performance in this question was good.

(b) **State any two examples of technological equipment used in crop production.**

**Expected response:** combine harvester; ploughs; manure spreaders; irrigation systems

**Comment:** This question was well answered by an overwhelming majority of the candidature across the Centres. Notably, some candidates listed all technological equipment used on both animal and crop production.

**(c) Explain how technology has improved the growth of crops.**

**Expected response:** the use of inorganic fertilizers helps to produce quality crops and increase yield; the use of pesticides to control pest.

**Comment:** This question was generally well answered by a majority of candidates.

**Question 6**

**(a) Describe the three steps involved when preparing the soil for planting vegetables.**

**Expected response:** (i) clearing the land to allow easy planting; (ii) cultivating the soil to bury weeds and to loosed the soil; (iii) preparing fine tilth to allow the plant roots to spread easily

**Comment:** The performance in this question was above average. A majority of the candidature across the Centres were able to list the steps followed when preparing the soil for planting. e.g clearing, cultivating and preparing fine tilth.

**Question 7**

**(a) Outline any four factors that decide the maturity of a vegetable.**

**Expected response:** (i) the variety of the vegetable; (ii) availability of water; (iii) the temperature; (iv) the soil fertility; (v) pest and diseases control

**Comment:** This question was poorly answered by a majority of the candidates. Some candidates listed the signs of maturity in crops and vegetables.

**(b) Explain the effect of leaving vegetables in the field for too long before harvesting.**

**Expected response:** the vegetables become bitter and tough/woody; vegetables can rot.

**Comment:** A vast majority of the candidature did exceptionally well in this question. Most candidates across the Centres were able to provide excellent responses.

**Question 8**

- (a) **Name the vegetable weed shown in figure 8.1**



**Fig.8.1.**

**Expected response:** wild eggplant

**Comment:** The performance in this question was far below average. A majority of the candidates stated the type of weed such as 'poisonous weed' than stating the name of the plant.

- (b) **State two hand tools used for weeding a vegetable garden.**

**Expected response:** (i) hand fork; (ii) hoe

**Comment:** The performance in this question was exceptionally well.

- (c) **Explain how parasitic weeds affect vegetables.**

**Expected response:** feed on host plant for nutrients and water/moisture

**Comment:** This question was poorly answered by the candidature across the Centres. Candidates confused a parasitic weed with a pest that eat crops.



### Question 9

- (a) **State any one type of mushroom found in Eswatini.**

**Expected response:** (i) oyster; (ii) shiitake; (iii) white button

**Comment:** This question was answered exceptionally well by a majority of the candidature across the Centres.

- (b) **Arrange the following statements which show that the mushrooms are ready to be harvested in the correct order.**

**Another flush will follow until the substrate has used all the nutrients; small mushrooms will start showing up from the substrate bag in the clusters; the first flush will be the largest; the subsequent flushes will be smaller until there are no more nutrients in the substrate; each flush is followed by a relatively quiet period for about seven days.**

**Expected response:** (i) small mushrooms will start showing up from the substrate bag in clusters; (ii) the first flush will be the largest; (iii) another flush will follow until the substrate has used all the nutrients; (iv) each flush is followed by a relatively quiet period for about seven days; (v) the subsequent flushes will be smaller until there are no more nutrients in the substrate

**Comment:** The performance in this question was far below average. A majority of the candidates were guessing and some were mixing the points.

### Question 10

- (a) **State two environmental conditions which are not suitable when spraying vegetables.**

**Expected response:** (i) when it is windy; (ii) when it is raining.

**Comment:** This question was answered exceptionally well by the candidature across the Centres.

- (b) **Explain how chemicals sprayed on the plant kill pests which feed by sucking?.**

**Expected response:** insects such the plant sap and die; insects eat the plant with the chemicals and die

**Comment:** The performance in this question was below average. A vast majority of the candidature explained how chemicals kill pest "eating/swallowing; smelling/fume; contact.

- (c) **Explain why correct amount of the chemical must be used when controlling pests.**

**Expected response:** (i) to ensure effective results; (ii) to avoid wasting the chemical; (iii) to avoid burning the plant

**Comment:** This question was well answered but in some Centres, the candidates were giving answers such as "may kill the plant"; "destroy other living organisms" ; "destroy the soil structure" which were shallow responses.

### Question 11

- (a) **Outline any two functions of the roots in plants.**

**Expected response:** (i) anchors the plant in the soil; (ii) absorb the nutrients; (iii) absorb water

**Comment:** The performance of the candidates in this question was above average.

- (b) **Explain the importance of light in plant growth.**

**Expected response:** (i) Helps the plant to make its own food

**Comment:** This question was generally answered very well by a majority of the candidature.

### Question 12

- (a) **Table 12.1 shows common pest and diseases of field crops. Complete the following table:**

**Expected response:** (i) aphids; (ii) cutworm bait; (iii) maize streak; (iv) beans

**Comment:** This question was poorly answered by a majority of the candidates.

- (b) **Explain how early planting can be used to control pests.**

**Expected response:** (i) plants mature early before pest arrive

**Comment:** This question was answered exceptionally well by most candidates.

### Question 13

- (a) **State two reasons why air is an important component of the soil.**

**Expected response:** (i) seeds need air to germinate; (ii) provide oxygen needed by plants and animals to live

**Comment:** This question was well answered by a majority of the candidature.

- (b) **Describe the characteristics of the D horizon/parent rock in a soil profile?**

**Expected response:** (i) also called bedrock; (ii) forms the base layer in the soil profile; (iii) made up of a continuous layer of rocks; (iv) solid layer of rock

**Comment:** The performance in this question was below average.

- (c) **Explain how organic matter improves the soil**

**Expected response:** (i) help soil to hold water; (ii) provide plants with nutrients.

**Comment:** The performance in this question was average.

#### Question 14

- (a) **State any one effect of soil erosion on crop yield.**

**Expected response:** (i) it reduces crop yield; soil becomes infertile; soil become bare

**Comment:** The performance of the candidates in this question was below average.

- (b) **Describe how the following farm activities control soil erosion.**

(i) **Leaving contour grass strips**

(ii) **Planting windbreakers**

**Expected response:** (i) stop water from running over the surface and down the slope; (ii) they block heavy wind and hailstorm and stop the soil from being washed away.

**Comment:** This question was poorly answered. A majority of the candidates were defining soil erosion.

#### Question 15

- (a) **State any one common external parasites in broiler production**

**Expected response:** mites

**Comment:** This question was poorly answered. A majority of the candidates listed chicken diseases and vices.

- (b) **Differentiate between indigenous chickens and broiler chickens**

**Expected response:** indigenous chickens are local or village chicken kept mostly in rural homesteads whilst a broiler is a white female or male chicken kept for meat.

**Comment:** This question was answered exceptionally well by most candidates.

- (c) **Explain why a footbath is needed at the door of a poultry house?**

**Expected response:** (i) to prevent germs and bacteria from getting into the poultry house.

**Comment:** The performance in this question was above average. The candidates were able to state that a footbath is intended to kill germs under your feet.

**EPC AGRICULTURE PAPER (616/2)**

**PRACTICALS**

**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 2021, the overall performance indicates a significant improvement as compare to 2020. 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 candidates work was supposed to be 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 to be submitted.
- Eleven to fifty candidates, ten sampled candidates' files were to be 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.

## **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, and some were filled using ink, instead of a pencil. 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 the 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 file, card 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 task 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 design descriptors. Few Centres had descriptors which were not specific (general), similar in all practical's. 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 do 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.

## SCALING

A majority of the Centres had proper scaling, for example

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

Fewer Centres had incorrect scaling, for example

- 1/1
- 1/1
- 1/1

## TEACHER'S REMARKS

A majority of the Centres had teacher's remarks on the marks allocated to candidates which is a very good practise by all Centres. However, a few 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 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.

## RECOMMENDATIONS

It is recommended that teachers should adopt the culture of sharing ideas and working together to improve the standard and presentation. Teachers are requested to respond timeously to markers queries when asked to give clarity on certain aspects of the scripts..

## GUIDED WRITE- UP REPORT

**Title:** 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, and above. 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 exceptional 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 exceptional well under the preparations stage. The candidates 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

For example:

- Describe how work was done from planting to harvesting
- Explain how activities were done from arrival until sale of livestock

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 that they 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.