



education

Department:
Education
REPUBLIC OF SOUTH AFRICA

AGRICULTURAL MANAGEMENT PRACTICES

GUIDELINES FOR PRACTICAL ASSESSMENT TASKS

2008

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Introduction

The seventeen National Curriculum Statement subjects which contain a practical component all include a PAT, i.e. a Practical or Performance Assessment Task. These subjects are:

- AGRICULTURE: Agricultural Management Practices, Agricultural Technology
- ARTS: Dance Studies, Design, Dramatic Arts, Music, Visual Arts
- HSS: Life Orientation
- SCIENCES: Computer Applications Technology, Information Technology
- SERVICES: Consumer Studies, Hospitality Studies, Tourism
- TECHNOLOGY: Civil Technology, Electrical Technology, Engineering Graphics and Design, Mechanical Technology

A PAT allows the teacher to directly and systematically observe applied competence. The PAT comprises the application/performance of the knowledge, skills and values particular to that subject and counts 25% (i.e. 100 marks) of the total promotion/ certification mark out of 400 for the subject. In the two Arts subjects Design and Visual Arts, the PAT counts 37.5% (i.e. 150 marks) of the total promotion/ certification mark out of 400 for the subject.

The PAT is implemented across the first three terms of the school year and should be undertaken as one extended task, which is broken down into different phases or a series of smaller activities that make up the PAT. The planning and execution of the PAT differs from subject to subject.

The Practical Assessment Task for Agricultural Management Practices

Teacher Guide

The Practical Assessment Task in Grade 12 comprises a management project, which includes a series of SIX practical activities (TWO per term). This task should be completed over the FIRST THREE terms (TWO practical activities per term) and be handed in at the end of the third term. The task should be set in real-life settings, for example milking of cows, broiler management, artificial insemination, castration, de-horning, etc. The learners should know the assessment criteria before they start with the task.

The Practical Assessment Task for Grade 12 is internally set, internally assessed and externally moderated. The PAT is internally set because of the numerous enterprise activities that are prevalent in South African Agricultural schools. The project is completed under controlled conditions.

The Practical Assessment Task counts 25% of the total promotion mark and should take the form of developing and applying agricultural management skills. It counts 100 marks and consists of a management portfolio (50 marks) and practical activities (50 marks). The Practical Assessment Task therefore focuses on the development of the management portfolio as well as the application of management skills in a production-related context.

Management Programme

The **management programme** should include evidence of how the production-related process is to be approached, that is:

- The management plan
- The process followed
- The safety and environmental aspects considered
- The apparatus used
- If applicable, sketches or diagrams or calculations
- The starting time and ending time – how long the process took to complete from start to finish
- The investigations or research undertaken
- Any other information that is relevant to the project

Each of the six activities making up the Practical Assessment Task for Agricultural Management Practices will be undertaken in two phases:

Phase 1: Learners produce the relevant management information, which will lead to the application of agricultural management skills in a practical real-life context. The evidence of this phase will be located in the management programme.

Phase 2: Learners apply the process and management skills as outlined in the management programme, making sure to note any deviations, which arise in the practical situation from those recorded.

The following rubrics can be used to assess the PAT in Agricultural Management Practices:

EXAMPLE 1: 'On-The-Spot' Practical Investigations

ASSESSMENT CRITERIA	PERFORMANCE INDICATOR LEVELS				
	1	2	3	4	COMMENTS
Ability to follow instructions	Unable to follow instructions	Instructions followed with regular supervision	Instructions followed with occasional supervision	Able to work completely on their own	
Ability to observe safety precautions	Unable to observe safety precautions	Sometimes careless with safety precautions	Follows safety precautions completely		
Ability to work tidily	Cannot work tidily	Can work tidily			

EXAMPLE 2: Guided Experimental Investigation

ASSESSMENT CRITERIA	PERFORMANCE INDICATOR LEVELS			
	1	2	3	COMMENTS
Organisation - work through procedure in orderly manner	Procedure disorganised	Procedure partially organised	Procedure organised efficiently	
Efficient use of allocated time	Experiment not completed in time	Experiment completed in time		
Ability to use apparatus or equipment	Apparatus always used incorrectly	Apparatus sometimes used correctly	Apparatus always used correctly	
Results / Final product	No results	Partially correct results	All results correct	
Responses to questions based on experimental work	No answers provided to questions	Can answer recall questions	Can answer interpretation and application questions	

EXAMPLE 3: Project Assessment

ASSESSMENT CRITERIA	PERFORMANCE INDICATOR LEVELS			
	1	2	3	COMMENTS
Project design	No clear organisation or vision / Too simplistic	Some parts are clear and arranged; other parts are confusing	Clear vision and organisation. To the point	
Media resources accessed	No resources accessed	Limited / Insufficient resources accessed	Variety of resources accessed	
Material resources used	No resources used	Insufficient / limited resources used	Variety of resources used	
Standard / quality	Poor quality	Satisfactory, but room for improvement	Of a high standard	
Effective use of time	Did not compile / consider a time-table / time limits	Did not adhere to the time-table limits	Compiled a time-table and efficiently used the time frames	

Dairy example of Practical Assessment Task (PAT)**Learner guide****Resources required:**

- Dairy producing cows: Ayrshire, Guernsey, Holstein-Friesian and Jersey
- Access to farm land with a good pasture
- Milk stand,
- Milk pails or buckets
- Milk machine
- Milk cooler/milk tank
- Wash basin with hot water where equipment can be washed.
- Vaccine/dip
- Feed
- Injection
- Dehorning iron
- Horn cutter
- Gas dehorning bolt
- Elastrator
- Burdizzo
- Semen from virile Bull
- Semen straw
- Liquid nitrogen
- Pistolet
- Earmarking apparatus

Additional resources

Learners can consult the Department of Agriculture website (www.agriculture.gov.za) for additional information concerning dairy farming. Other useful organisations to contact are AgriSA, the Agricultural Research Council and learners can watch Agri TV on SABC 2 on Saturdays. Agri TV provides learners with a multitude of information on the latest farming methods as well as the latest vaccines and feed available on the market.

Learners are also encouraged to purchase the *Farmer's Weekly* to get greater insight into the latest trends in dairy farming in SA and the rest of Africa.

Teacher demonstration

The teacher will demonstrate to learners, the different practical work that takes place in the dairy and on the farm.

PRACTICAL ASSESSMENT TASK (For the learner)**Dairy**

You are responsible for working in the dairy from _____ to _____.

You will also be responsible for doing two practicals per term on the dairy cattle. The task should be finished by the third term.

1. Practicals in the dairy will involve:
Milking of the cows
Taking of mastitis tests
Feeding of the cows
Feeding of the calves
Handling of the cows
2. Dehorning of calves
3. Immunization of calves against heart water
4. Artificial insemination
5. Branding of calves
6. Earmarking of the calves
7. Castrating of bulls
8. Pregnancy test

Final mark

The final mark is made up of the sum of the management programme and the practical work carried out on the farm.

Management programme	50
Practicals	50
TOTAL	100

Management Programme and Practicals

You must also create a management programme of the practicals. The **management programme** will entail the following:

1. In the management plan you must provide dates and times of the various practical activities you will carry out per term (TWO per term). The management plan should span the FIRST THREE terms of the school year. In the management plan you should indicate the process that you follow, for instance when you are milking cows what process you put in place and likewise for the other practical activities like the dehorning of calves, etc.
2. The safety precautions and environmental issues considered. For example before milking is done one has to ensure that the udder of the cow is cleaned so that no dirty water drips into the milk. Include in your discussions how one must store and utilise liquid nitrogen.

3. Details of all of the apparatus you are going to use for the different practicals you are carrying out. Mention what each apparatus is explicitly used for.
4. You can provide sketches and diagrams of the different practicals you undertake.
5. Calculations of milk production and other aspects like the quantities of the different concentration of feed used need to be shown.
6. How long you take to complete each practical activity must be documented, i.e. the recording of the times.
7. What books, magazines and other resource material you consulted before doing the practical activity must be indicated.
8. Reasons why you dehorn calves, do immunisation, castrate and some of the other practical activities. The marks for the management programme will be as follows:

	Marks
1. Management plan	10
2. Process followed	10
3. Safety and environmental issues	4
4. The apparatus used	8
5. Sketches, diagrams and calculations	10
6. Starting time and ending time – how long the process took	2
7. The investigations or research undertaken	4
8. Any other information	2
TOTAL	50

Practicals

When milking one must consider the process followed in the milking of cows, the handling of the milking unit, treatment of the udder and teats (if they are washed), check if the cow is milked out, aftercare, the taking of the mastitis test. One also has to reflect on the type and quantity of feed given during various times. One should determine the relationship between the concentration of feed and milk production.

When dehorning one considers if the animal is properly secured, if the actual clipping of the stub is done in a proper fashion, the correct use of the dehorn iron and if the wound is properly sterilised. The bull calves must be handled in such a way that they do not injure themselves.

Immunisation looks at the dosage the learner administers to the cow, the way the needle is inserted into the vein and at how the vaccine is injected into the animal. The learner must specify why it is necessary to immunise the animal and what some of the precautions that need to be considered are when injecting the medication into the vein.

In artificial insemination one looks at why the process must take place and why the semen of a proven sire is kept in liquid nitrogen for artificial insemination. The learner has to show and demonstrate how the pipette with semen is inserted into the uterus of the cow on heat. One can show the ovulation period graphically.

In the case of branding, earmarking, castration and pregnancy test the focus will be on how the learner uses the different apparatus to conduct the various processes. The learner will also consider the different precautions that he/she will take when conducting these practical tasks on the farm.

In the case of branding one looks at how the learner handles the branding iron, and checks if he/she makes a triangular burn on the animal's hide. In this instance administering aftercare is very important. When castrating the use of an elastrator and rubber rings is important.

The mark distribution for the different practical tasks is as follows:

	Marks
1. Milking	30
2. Dehorning	10
3. Immunisation	10
4. Artificial insemination	10
5. Branding	10
6. Earmarking	10
7. Castration	10
8. Pregnancy tests	10
TOTAL	100
	50

CHECKLIST FOR PAT: DAIRY CATTLE

NAME: _____

GRADE _____

PRACTICALS

	Marks	Learner's Mark
1.PRACTICALS IN THE DAIRY		
1.1 MILKING		
Handling of milking unit	2	
Correct order of putting on the milking teats	4	
Make sure the cows are milked out	1	
Correct removal of the unit	2	
Washing of the udder and teats	2	
Aftercare	2	
	15	
1.2 MASTITIS TESTS		
Method used	1	
All four teats are tested	2	
Handling of the teats	2	
	5	
1.3 HANDLING OF ANIMALS		
Correct handling of the animals	3	
No noise	2	
	5	
1.4 FEEDING		
Correct feeding of calves and cows	5	
	5	
TOTAL	30	
2.DEHORNING		
Correct clipping of stubs	3	
Correct temperature of dehorn iron	2	
Correct use of dehorn iron	2	
Stocholm is put on	2	

Handling of the animal	1	
	10	
3.IMMUNIZATION		
Correct dosage	1	
Putting of needle into vein	3	
The blood is injected slowly	3	
Making sure needle is in the vein after half of the blood is injected	3	
	10	
4.ARTIFICIAL INSEMINATION		
Make sure cows are on heat	1	
Use of semen straw is correct	1	
Use of pistolet	1	
Hand in rectum (slowly and with care)	1	
Stimulation of the uterus	1	
Feeling for pregnancy	1	
Take cervix in hand and push to front	1	
Pistolet in vagina	1	
Pipette must passed along upper part of the vagina	1	
Correct placing of the semen	1	
	10	
5.BRANDING OF CALVES		
Correct temperature of branding iron	3	
Time of burn not to long	3	
Burn must be in triangle	3	
Aftercare	1	
	10	
6.EARMARKING		
Correct use of apparatus	4	
Numbers correct	4	
Aftercare	2	
	10	
7.CASTRATION		
Correct use of the burdizzo	2	
One cord at a time	2	
Cutting marks don't overlap	2	
Correct position of burdizzo on the scrotum	4	
	10	
8.PREGNANCY TEST		
Hand slowly in rectum	2	
Correct procedure	2	
Correctness of test	6	
	10	
TOTAL	100	

(TEACHER)_____
(LEARNER)_____
DATE

ASSESSMENT TOOL FOR PRACTICALS IN DAIRY

NAME OF CANDIDATE:					MARK:		
EXAMINATION NUMBER:							
					Possible mark	Mark Obtained	Name and signature of Assessor
1. Milking					15		
13 - 15	10 - 12	7 - 9	4 - 6	0 - 3			
Hands are washed, the cow is fully milked out, cows are kept free of dirt, person is clean and free from infections. Correct handling of the milking unit, correct order of putting milking teats on, the teats are washed and the milking unit is correctly removed	Hands are washed, the cow is fully milked out, cows are kept free of dirt, person is clean and free from infections. Correct handling of the milking unit, correct order of putting milking teats on, the teats are washed and the milking unit is correctly removed	Hands are washed, the cow is not fully milked out, cows are kept free of dirt, person is clean and free from infections. Correct handling of the milking unit, incorrect order of putting milking teats on, the teats are washed and the milking unit is not correctly removed	Hands are washed, the cow is not fully milked out, cows are kept free of dirt, person is clean and free from infections. Incorrect handling of the milking unit, incorrect order of putting milking teats on, the teats are washed and the milking unit is correctly removed	Incorrect procedures, but hands are washed and person is clean			
2. Doing and analyzing mastitis test					5		
	5	3 - 4	2	0 - 1			
	Excellent method of testing used, all four teats are tested and the teats are handled gently	Good method of testing, all four teats are tested and teats are not handled with care	Good method of testing, less than four teats are tested and teats are handled with care.	Poor method of testing, less than 2 teats are tested. Teats not handled appropriately			

3. Handling of animals			5			
4 - 5	2 - 3	0 - 1				
Correct handling and no noise	Correct handling and slight noise	Incorrect handling and noise				
4. Feeding			5			
4 - 5	2 - 3	0 - 1				
Correct feeding of cows and calves	Correct feeding of calves or cows	Incorrect feeding				
TOTAL			30			
CONVERT TO						

ASSESSMENT TOOL FOR DEHORNING AND BRANDING OF CALVES

NAME OF CANDIDATE:	MARK:
EXAMINATION NUMBER:	

					Possible mark	Mark Obtained	Name and signature of Assessor
1. Branding of calves					10		
	9 - 10	6 - 8	4 - 5	1 - 3			
	Correct temperature of branding iron, time of burn not too long, burn must be in triangle and aftercare is given.	Correct temperature of branding iron, time of burn is quite long, burn is in triangle and aftercare is given.	Correct temperature of branding iron, time of burn is quite long and the burn is not in a triangle and little or no aftercare is given.	Incorrect temperature of branding iron, time of burn is too long, burn is not in a triangle, and no aftercare is given.			

2. Dehorning of calves					10		
	9 - 10	6 - 8	4 - 5	1 - 3			
	Correct clipping of stubs, correct temperature, dehorn iron placed on the bud of the horn for 3 seconds, caustic solution is put on, animal is handled with care and secured.	Correct clipping of stubs, correct temperature, dehorn iron placed on the bud of the horn for less than 3 seconds and animal is handled with care	Correct clipping of stubs, correct temperature, dehorn iron placed on the bud of the horn for less than 3 seconds and animal is not handled with care and is not secured properly.	Incorrect clipping of stubs, correct temperature, dehorn is placed on the bud of the horn for less than 3 seconds and animal is not handled with care and is not secured properly.			

3. Immunization					10		
	9 - 10	6 - 8	4 - 5	1 - 3			
	Use the correct dosage,needle is expertly put into the vain,blood is injected slowly and the learner check that the needle stay in the vain	Use the correct dosage,needle is put into the vain,blood is injected slowly and the learner check that the needle stay in the vain	Use the correct dosage,learner struggle to put needle into the vain,blood is injected slowly and the learner did not check that the needle stay in the vain.	Learner cannot put needle into vain but the correct dosage was used			
4. Artificial Insemination					10		
	9 - 10	6 - 8	4 - 5	1 - 3			
	The procedure was done expertly	The procedure was done expertly,but the cow was not handled with care	The learner could do the procedure, but all the steps was not done.	The learner could not do the procedure, but the cow was handled with care			
5. Castration					10		
	9 - 10	6 - 8	4 - 5	1 - 3			
	The correct use of the burdizzo,one cord at a time was cut and the cuttings did not overlap and all savety regulations were followed	The correct use of the burdizzo,one cord at a time was cut, but the cuttings did overlap and all savety regulations were followed.	The correct use of the burdizzo,one cord at a time was cut, but the cuttings did overlap and all savety regulations were not followed.	The learner could not do the procedure, but the bull was handled with care			

6. Pregnancy test					10		
	9 - 10	6 - 8	4 - 5	1 - 3			
	The procedure was done expertly	The procedure was done expertly, but the cow was not handled with care	The learner could do the procedure, but test was not accurate.	The learner could not do the procedure, but the cow was handled with care			
7. Earmarking					10		
	9 - 10	6 - 8	4 - 5	1 - 3			
	The procedure was done expertly	The procedure was done expertly, but the cow was not handled with care and no aftercare was done.	The learner could do the procedure, but the numbers were not correct and no aftercare was done	The learner could not do the procedure, but the animal was handled with care			
TOTAL					70		
CONVERT TO							
GRANDTOTAL					100		