

071604T4AME

AGRICULTURAL MACHINERY AND EQUIPMENT LEVEL 4

ENG/OS/AME/CR/02/4/A

Calibrate Field Equipment

Nov/Dec 2024



**TVET CURRICULUM DEVELOPMENT, ASSESSMENT AND CERTIFICATION
COUNCIL (TVET CDACC)**

PRACTICAL ASSESSMENT

INSTRUCTIONS TO ASSESSOR

1. Assess the candidate as the practical progresses observing the critical areas
2. You are required to mark the practical as the candidate perform the tasks
3. You are required to take video clips at critical points
4. Ensure the candidate has a name tag and registration code at the back and front

OBSERVATION CHECKLIST

Candidate's Name & Registration Code			
Assessors Name & Registration Code			
Venue of Assessment			
Date of Assessment			
Items to be Evaluated: <i>Please award marks as appropriate. Give a brief comment on your observation.</i>	Marks Available	Marks Obtained	Comments
1. Wore PPEs: - Overall/ dustcoat - Safety boots (Award 1 mark each)	2		
2. Assembled tools and materials (Award 2 marks)	2		
TASK 1: Identify the implement marked Y and label the parts marked A, B, C, D, E			
1. Name of Implement Y Seed drill (Award 1 mark)	2		
3. Correctly labelled the parts of implement Y marked A, B, C, D, A– Seed hopper B – Ground Wheel C – Furrow opener D – Seed metering Mechanism (Award 1 mark each) <u>NOTE</u> <i>(i) The Assessor to label the parts of the tractor using stickers as shown above</i> <i>(ii) Candidates to write the responses on the foolscap</i>	4		

Sub-Total 1	10		
TASK 2: State FIVE functions of implement Y			
4. Stated FIVE functions of implement Y (i) To carry the seeds (ii) To open the furrow to a uniform depth (iii) To meter the seeds (iv) To place the seed in furrows in an acceptable pattern (v) To cover the seeds and compact the soil around the seed. NOTE (i) The Assessor to ask the candidates to state five functions of implement Y (ii) Candidates to write the responses on the foolscap (Award 1 mark each)	5		
Sub-Total 2	5		
TASK 3: Carry out general inspection and maintenance practices on implement Y			
5. Carried out general inspection and maintenance practices on implement Y • Tightened loose nuts and bolts • Lubricated moving parts • Repaired and replaced worn out parts (Award 1 mark each)	3		
Sub-Total 3	3		
TASK 4: Calibrate implement Y using static method.			
6. Determined the nominal width (W) of the seed drill. • Measured using a tape measure • or found the product of the number of	2		

planter units and the distance between planter units. ($W=M \times S$) (Award 2 marks)			
7. Determined the length of a strip necessary to cover 1/10 hectare. $L = \frac{10000}{W} \times \frac{1}{10} = \frac{1000}{W} m$ (Award 2 marks)	2		
8. Determined the number of revolutions (N) the ground wheel has to make to cover the length of the strip (L). - Measured the diameter of the wheel using a tape measure - Calculated the circumference $\pi \times D \times N = \frac{1000}{W}$ $N = \frac{1000}{\pi \times D \times W} rpm$ (Award 2 marks each)	8		
9. Raised the seed drill in such a way that the ground wheels turned freely. (Award 2 marks)	2		
10. Made a mark on the drive wheel and a corresponding mark at a convenient place on the body of the drill to help in counting the revolutions of the drive wheel (Award 3 marks)	3		
11. Put selected seed in the respective hoppers. (Award 1 marks)	1		
12. Placed a sack or a container under each hopper for collection of discharged seed. (Award 2 marks)	2		

13. Set the rate control adjustment for the seed for maximum drilling. By marking this position on the control for reference. <i>(Award 2 marks)</i>	2		
14. Rotated the wheel and counted N revolutions $N = \frac{1000}{\pi \times D \times W} rpm$ <i>(Award 3 marks)</i>	3		
15. Weighed the quantity of seed dropped from each opener and recorded on the data sheet. <i>(Award 2 marks)</i>	2		
16. Calculated the seed dropped in kg/ha and recorded on the data sheet. <i>(Award 2 marks)</i>	2		
17. Repeated the process by suitably adjusting the rate control till desired rate of seed drop was obtained. <i>(Award 1 mark)</i>	2		
18. Cleaned the working area, tools and equipment <i>(Award 1 mark)</i>	1		
Sub-Total	32		
GRAND TOTAL	50		
ASSESSMENT OUTCOME			
The candidate was found to be: Competent ☐ Not yet Competent ☐ <i>(Please tick as appropriate)</i> <i>(The candidate is competent if the candidate obtains at least 50%)</i>			

Feedback from the Candidate:	
Feedback to the Candidate:	
Candidate Signature	Date:
_____	_____
Assessor's Signature	Date
_____	_____

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