



## EN19003 – Engineering Laboratory – AgFE-FMP

### Sensor Based Crop Production

### 2. Tractor Mounted Pneumatic Precision Planter cum Fertilizer Applicator – With Demonstration of Maize Sowing

Observations – G 5: 03-02-2022 (FN)

Seed Spacing (mm)	350	310	210	300	260	200	390	220	290	220
Seed Depth (mm)	50	52	59	55	68	70	70	65	60	70



## EN19003 – Engineering Laboratory – AgFE-FMP

### Sensor Based Crop Production

### 2. Tractor Mounted Pneumatic Precision Planter cum Fertilizer Applicator – With Demonstration of Maize Sowing

From the observations of the experiment (Video and readings), calculate and report the following field performance and planting quality parameters.

#### Field Performance and Planting Quality Parameters

1. **Actual Speed of Operation (km/h)** :  $\text{Distance travelled (m)} \times 3.6 / \text{Time (s)}$
2. **Theoretical Field Capacity (ha/h)**:  $\text{Working width (m)} \times \text{Actual speed of operation (km/h)} / 10$
3. **Actual Field Capacity (ha/h)**:  $\text{Field length (m)} \times \text{Field width (m)} \times 0.36 / \text{Total time (s)}$
4. **Field Efficiency (%)**:  $\text{Actual Field Capacity} \times 100 / \text{Theoretical Field Capacity}$
5. **Seed Spacing Uniformity (%)**:  $100 \times (1 - \text{Standard Deviation of spacing} / \text{Mean of spacing})$
6. **Seed depth Uniformity (%)**:  $100 \times (1 - \text{Standard Deviation of depth} / \text{Mean of depth})$