

## Lampiran 2. Perhitungan

### 1. Perhitungan persentase jali tidak terontok (JTT)

Perhitungan biji menggunakan persamaan :  $JTT = \frac{JJTT}{JJT+JJTT} \times 100\%$

Dimana : JTT = Jali Tidak Terontok (%)

JJTT = Jumlah Jali Tidak Terontok (gram)

JJT = Jumlah Jali Terontok (gram)

a. 50 rpm : Ulangan 1  $\Rightarrow JTT = \frac{100}{300+100} \times 100\%$   
 $= 25 \%$

Ulangan 2  $\Rightarrow JTT = \frac{70}{265+70} \times 100\%$   
 $= 20,89\%$

Ulangan 3  $\Rightarrow JTT = \frac{55}{310+55} \times 100\%$   
 $= 15,07\%$

**Rata-rata JTT 50 rpm =  $(25\%+20,89\%+15,07\%)/3$**   
 **$= 20,32\%$**

b. 38 rpm : Ulangan 1  $\Rightarrow JTT = \frac{50}{280+50} \times 100\%$   
 $= 15,15\%$

Ulangan 2  $\Rightarrow JTT = \frac{45}{270+45} \times 100\%$   
 $= 14,3\%$

Ulangan 3  $\Rightarrow JTT = \frac{35}{270+35} \times 100\%$   
 $= 11,47\%$

**Rata-rata JTT 38 rpm =  $(15,15\%+14,3\%+11,47)/3$**   
 **$= 13,64 \%$**

c. 30 rpm : Ulangan 1 =>  $JTT = \frac{30}{330+30} \times 100\%$

$$= 8,33\%$$

Ulangan 2 =>  $JTT = \frac{30}{290+30} \times 100\%$

$$= 9,37\%$$

Ulangan 3 =>  $JTT = \frac{40}{295+40} \times 100\%$

$$= 11,94\%$$

**Rata-rata JTT 30 rpm =  $(8,33\% + 9,37\% + 11,94\%) / 3$**

$$= 9,88\%$$

## 2. Perhitungan Persentase Jali Terontok (JT)

Perhitungan ini menggunakan persamaan :  $JT = 100\% - JTT$

Dimana = JT = Jali Terontok (%)

JTT = Jali Tidak Terontok (%)

a. 50 rpm: Ulangan 1 =>  $JT = 100\% - 25\%$   
 $= 75\%$

Ulangan 2 =>  $JT = 100\% - 20,89\%$   
 $= 79,11\%$

Ulangan 3 =>  $JT = 100\% - 15,07\%$   
 $= 84,93\%$

**Rata-rata JT 50 rpm =  $(75\% + 79,11\% + 84,93\%) / 3$**

$$= 79,68\%$$

b. 38 rpm : Ulangan 1 =>  $JT = 100\% - 15,15\%$

$$= 84,85\%$$

$$\text{Ulangan 2} \Rightarrow \text{JT} = 100\% - 14,30\%$$

$$= 85,70\%$$

$$\text{Ulangan 3} \Rightarrow \text{JT} = 100\% - 11,47\%$$

$$= 88,53\%$$

$$\text{Rata-rata JT 38 rpm} = (84,85\% + 85,70\% + 88,53\%) / 3$$

$$= 86,36\%$$

$$\text{c. 30 rpm : Ulangan 1} \Rightarrow \text{JT} = 100\% - 8,33\%$$

$$= 91,67\%$$

$$\text{Ulangan 2} \Rightarrow \text{JT} = 100\% - 9,37\%$$

$$= 90,63\%$$

$$\text{Ulangan 3} \Rightarrow \text{JT} = 100\% - 11,94\%$$

$$= 88,06\%$$

$$\text{Rata-rata JT 30 rpm} = (91,67\% + 90,63\% + 88,06\%) / 3$$

$$= 90,12\%$$

### 3. Perhitungan Persentase Jali Terontok Baik (JTB)

Perhitungan persentase jali terontok baik ini menggunakan persamaan

$$\text{JTB} = \frac{\text{JJTB}}{\text{JJT}} \times 100\%$$

Dimana : JTB : Jali Terontok Baik (%)

JJTB : Jumlah Jali Terontok Baik (gram)

JJT : Jumlah Jali Terontok (gram)

a. 50 rpm : Ulangan 1 =>  $JTB = \frac{260}{300} \times 100\%$

$$= 86,66\%$$

Ulangan 2 =>  $JTB = \frac{230}{265} \times 100\%$

$$= 86,79\%$$

Ulangan 3 =>  $JTB = \frac{285}{310} \times 100\%$

$$= 91,93\%$$

$$\text{Rata-rata JTB 50 rpm} = (86,66\% + 86,79\% + 91,93\%) / 3$$

$$= 88,57\%$$

b. 38 rpm : Ulangan 1 =>  $JTB = \frac{250}{280} \times 100\%$

$$= 89,28\%$$

Ulangan 2 =>  $JTB = \frac{235}{270} \times 100\%$

$$= 87,03\%$$

Ulangan 3 =>  $JTB = \frac{240}{270} \times 100\%$

$$= 88,89\%$$

$$\text{Rata-rata JTB 38 rpm} = (89,28\% + 87,03 + 88,89\%) / 3$$

$$= 88,41\%$$

c. 30 rpm : Ulangan 1 =>  $JTB = \frac{230}{330} \times 100\%$

$$= 69,69\%$$

Ulangan 2 =>  $JTB = \frac{220}{290} \times 100\%$

$$= 75,86\%$$

Ulangan 3 =>  $JTB = \frac{200}{295} \times 100\%$

$$= 67,79\%$$

$$\begin{aligned}\text{Rata-rata JTB 30 rpm} &= (69,69\% + 75,86\% + 67,79\%) / 3 \\ &= 71,04\%\end{aligned}$$

#### 4. Perhitungan Persentase Jali Terontok Rusak (JTR)

Perhitungan persentase jali terontok rusak ini menggunakan persamaan

$$JTR = \frac{JJTR}{JJT} \times 100\%$$

Dimana : JTBR : Jali Terontok Rusak (%)

JJTR : Jumlah Jali Terontok Rusak (gram)

JJT : Jumlah Jali Terontok (gram)

a. 50 rpm : Ulangan 1 =>  $JTR = \frac{40}{300} \times 100\%$

$$= 13,33\%$$

Ulangan 2 =>  $JTR = \frac{35}{265} \times 100\%$

$$= 13,20\%$$

Ulangan 3 =>  $JTR = \frac{26}{310} \times 100\%$

$$= 8,06\%$$

$$\begin{aligned}\text{Rata-rata JTR 50 rpm} &= (13,33\% + 13,20\% + 8,06\%) / 3 \\ &= 11,43\%\end{aligned}$$

b. 38 rpm : Ulangan 1 =>  $JTR = \frac{30}{280} \times 100\%$

$$= 10,71\%$$

$$\text{Ulangan 2} \Rightarrow \text{JTR} = \frac{35}{270} \times 100\%$$

$$= 12,96\%$$

$$\text{Ulangan 3} \Rightarrow \text{JTR} = \frac{30}{270} \times 100\%$$

$$= 11,11\%$$

$$\text{Rata-rata JTR 38 rpm} = (10,71\% + 12,96\% + 11,11\%) / 3$$

$$= 11,59\%$$

c. 30 rpm :      Ulangan 1  $\Rightarrow \text{JTR} = \frac{100}{330} \times 100\%$

$$= 30,30\%$$

$$\text{Ulangan 2} \Rightarrow \text{JTR} = \frac{70}{290} \times 100\%$$

$$= 24,14\%$$

$$\text{Ulangan 3} \Rightarrow \text{JTR} = \frac{95}{295} \times 100\%$$

$$= 32,20\%$$

$$\text{Rata-rata JTR 30 rpm} = (30,30\% + 24,14\% + 32,20\%) / 3$$

$$= 28,96\%$$

## 5. Perhitungan Kapasitas Mesin (KKM)

Perhitungan kapasitas kerja alat perontok biji jali ini menggunakan persamaan

$$KKM = \frac{JJT}{t}$$

Dimana : KKM : Kapasitas Kerja Mesin (kg/jam)

JJT : Jumlah Jali Terontok (kg)

T : Waktu yang dibutuhkan untuk merontokkan Jali (Jam)

### a. Kapasitas Kerja Mesin (KKM 1)

$$KKM 1 = \frac{JJT}{t} = 15 / 17,35 \text{ menit} = 0,864 \text{ kg/menit}$$

$$KKM 1 = 0,864 \text{ kg/menit} \times 60 = 51,87 \text{ kg/jam}$$

### b. Kapasitas Kerja Alat Mesin (KKM 2)

$$KKM 2 = \frac{JJT}{t} = 12 / 13,21 \text{ menit} = 0,908 \text{ kg/menit}$$

$$KKM 2 = 0,908 \text{ kg/menit} \times 60 = 54,51 \text{ kg/jam}$$

### c. Kapasitas Kerja Mesin (KKM 3)

$$KKM 3 = \frac{JJT}{t} = 7 / 9,11 \text{ menit} = 0,768 \text{ kg/menit}$$

$$KKM 3 = 0,768 \text{ kg/menit} \times 60 = 46,08 \text{ kg/jam}$$

$$\begin{aligned} \text{KKM rata-rata} &= (KKM 1 + KKM 2 + KKM 3) \\ &= (51,87 + 54,51 + 46,08) \text{ kg/jam} / 3 \\ &= 152,46 \text{ kg/jam} / 3 \\ &= \mathbf{50,82 \text{ kg/jam tanaman jali}} \end{aligned}$$