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# LAMPIRAN

## Lampiran 1. Tabel Data Uji Kinerja

Hasil Data Pengukuran Uji Kinerja Mesin Varietas Inpari 32

| No | Data Varietas Inpari | Pengulangan 1 | Pengulangan 2 |
|---|---|---|---|
| 1 | Kadar air gabah | 13,5 | 13,5 |
| 2 | Massa gabah (Bgm) | 40 | 40 |
| 3 | Waktu penggilingan ($t_p$) | 6,05 | 5,96 |
| 4 | Kadar air beras | 12,3 | 12,1 |
| 5 | Massa beras sosoh (Bbk) | 28 | 28,5 |
| 6 | Waktu tampung beras sosoh pada pintu pengeluaran ($t_k$) | 5,55 | 5,63 |
| 7 | Massa beras patah (mbp) | 51,49 | 47,42 |
| | | 47,57 | 48,92 |
| | | 48,76 | 48,93 |
| 8 | Massa menir (bbm) | 3,53 | 2,37 |
| | | 2,68 | 2,54 |
| | | 2,85 | 2,74 |
| 9 | Massa beras kepala (mbk) | 91,84 | 96,47 |
| | | 96,76 | 95,85 |
| | | 95,13 | 95 |
| 10 | Massa gabah dalam beras sosoh | 2,99 | 3,44 |
| | | 2,78 | 2,67 |
| | | 3,01 | 3,13 |
| 11 | Kadar air pecah kulit | 13,5 | 13,5 |
| 12 | Massa beras pecah kulit tak terkupas | 97,61 | 110,06 |
| | | 103,39 | 110,32 |
| | | 102,88 | 108,49 |
| 13 | Massa beras pecah kulit terkupas | 52,39 | 39,94 |
| | | 46,61 | 39,68 |
| | | 47,12 | 41,51 |
| 14 | Massa sekam | 1 | 1,5 |
| 15 | Massa dedak | 11 | 10 |

Hasil Data Pengukuran Uji Kinerja Mesin Varietas Mekongga

| No | Data Varietas Mekongga | Pengulangan 1 | Pengulangan 2 |
|---|---|---|---|
| 1 | Kadar air gabah | 12,7 | 12,7 |
| 2 | Massa gabah (Bgm) | 40 | 40 |
| 3 | Waktu penggilingan (tp) | 6,35 | 6 |
| 4 | Kadar air beras | 12,7 | 12,6 |
| 5 | Massa beras sosoh (Bbk) | 28 | 28 |
| 6 | Waktu tampung beras sosoh pada pintu pengeluaran (tk) | 5,85 | 5,83 |
| 7 | Massa beras patah (mbp) | 83,11 | 78,75 |
| | | 83,43 | 80,08 |
| | | 84,18 | 78,95 |
| 8 | Massa menir (bbm) | 5,43 | 1,38 |
| | | 3,67 | 1,86 |
| | | 1,82 | 2,59 |
| 9 | Massa beras kepala (mbk) | 56,79 | 65,74 |
| | | 58,44 | 63,71 |
| | | 60,28 | 65,49 |
| 10 | Massa gabah dalam beras sosoh | 4,38 | 3,95 |
| | | 4,19 | 4,05 |
| | | 3,5 | 2,72 |
| 11 | Kadar air pecah kulit | 13,5 | 13,3 |
| 12 | Massa beras pecah kulit tak terkupas | 105,66 | 99,14 |
| | | 108,95 | 102,68 |
| | | 114,05 | 108,53 |
| 13 | Massa beras pecah kulit terkupas | 44,34 | 50,86 |
| | | 41,05 | 47,32 |
| | | 35,95 | 41,47 |
| 14 | Massa sekam | 0,5 | 1,5 |
| 15 | Massa dedak | 11,5 | 10,5 |

Hasil Pengolahan Data Kapasitas Masukan Mesin

| Varietas | Pengulangan | Massa gabah (kg) | Waktu penggilingan (menit) | Kapasitas masukan mesin (kg/jam) |
|---|---|---|---|---|
| Inpari 32 | 1 | 40 | 6,05 | 396,69 |
| | 2 | 40 | 5,96 | 402,68 |
| Mekongga | 1 | 40 | 6,35 | 377,95 |
| | 2 | 40 | 6 | 400 |

Hasil Pengolahan Data Kapasitas Keluaran Mesin

| Varietas | Pengulangan | Massa beras (kg) | Waktu tampung pada pintu pengeluaran (menit) | Kapasitas keluaran mesin (kg/jam) |
|---|---|---|---|---|
| Inpari 32 | 1 | 28 | 5,55 | 302,70 |
| | 2 | 28,5 | 5,63 | 303,73 |
| Mekongga | 1 | 28 | 5,85 | 287,18 |
| | 2 | 28 | 5,83 | 288,16 |

Hasil Pengolahan Data Persentase Beras kepala, Patah dan Menir Varietas Inpari 32

| No | Pengulangan | Sampel | Kondisi | Massa (g) | Massa total (g) | Persentase (%) |
|---|---|---|---|---|---|---|
| 1 | 1 | 1 | Kepala | 91,84 | 150 | 61,23 |
| | | | Patah | 51,49 | | 34,33 |
| | | | Menir | 3,53 | | 2,35 |
| | | 2 | Kepala | 96,76 | 150 | 64,51 |
| | | | Patah | 47,57 | | 31,71 |
| | | | Menir | 2,68 | | 1,79 |
| | | 3 | Kepala | 95,13 | 150 | 63,42 |
| | | | Patah | 48,76 | | 32,51 |
| | | | Menir | 2,85 | | 1,90 |
| 2 | 2 | 1 | Kepala | 96,47 | 150 | 64,31 |
| | | | Patah | 47,42 | | 31,61 |
| | | | Menir | 2,37 | | 1,58 |
| | | 2 | Kepala | 95,85 | 150 | 63,90 |
| | | | Patah | 48,92 | | 32,61 |
| | | | Menir | 2,54 | | 1,69 |
| | | 3 | Kepala | 85,98 | 150 | 63,33 |
| | | | Patah | 48,93 | | 32,62 |
| | | | Menir | 2,74 | | 1,83 |

Hasil Pengolahan Data Persentase Beras kepala, Patah dan Menir Varietas Mekongga

| No | Pengulangan | Sampel | Kondisi | Massa (g) | Massa total (g) | Persentase (%) |
|---|---|---|---|---|---|---|
| 1 | 1 | 1 | Kepala | 56,79 | 150 | 37,86 |
| | | | Patah | 83,11 | | 55,41 |
| | | | Menir | 5,43 | | 3,62 |
| | | 2 | Kepala | 58,44 | 150 | 38,96 |
| | | | Patah | 83,43 | | 55,62 |
| | | | Menir | 3,67 | | 2,45 |
| | | 3 | Kepala | 60,28 | 150 | 40,19 |
| | | | Patah | 84,18 | | 56,12 |
| | | | Menir | 1,38 | | 1,21 |
| 2 | 2 | 1 | Kepala | 65,74 | 150 | 43,83 |
| | | | Patah | 78,75 | | 52,50 |
| | | | Menir | 1,38 | | 0,92 |
| | | 2 | Kepala | 63,71 | 150 | 42,47 |
| | | | Patah | 80,08 | | 53,39 |
| | | | Menir | 1,86 | | 1,24 |
| | | 3 | Kepala | 65,49 | 150 | 43,66 |
| | | | Patah | 78,95 | | 52,63 |
| | | | Menir | 2,59 | | 1,73 |

Hasil pengolahan data rendemen

| Varietas | Pengulangan | Massa gabah (kg) | Massa beras sosoh (kg) | Persentase rendemen (%) |
|---|---|---|---|---|
| Inpari 32 | 1 | 40 | 28 | 70 |
| | 2 | 40 | 28,5 | 71,25 |
| Mekongga | 1 | 40 | 28 | 70 |
| | 2 | 40 | 28 | 70 |

Hasil Pengolahan Data Efisiensi Pengupasan Pertama

| Varietas | Pengulangan | Sampel | Bobot gabah terkupas (g) | Bobot gabah bersih (g) | Efesiensi pengupasan (%) |
|---|---|---|---|---|---|
| Inpari 32 | 1 | 1 | 52,39 | 150 | 34,92 |
| | | 2 | 46,61 | 150 | 31,07 |
| | | 3 | 47,12 | 150 | 31,41 |
| | 2 | 1 | 39,94 | 150 | 26,62 |
| | | 2 | 39,68 | 150 | 26,45 |
| | | 3 | 41,51 | 150 | 27,67 |
| Mekongga | 1 | 1 | 44,34 | 150 | 29,56 |
| | | 2 | 41,05 | 150 | 27,36 |
| | | 3 | 35,95 | 150 | 23,96 |

| | | | | | |
|---|---|---|---|---|---|
| | | 1 | 50,86 | 150 | 33,90 |
| | 2 | 2 | 47,32 | 150 | 31,54 |
| | | 3 | 41,47 | 150 | 27,64 |

Hasil Pengolahan Data Efisiensi Pengupasan Kedua

| **Varietas** | **Pengulangan** | **Sampel** | **Massa beras sosoh (g)** | **Massa gabah dalam beras sosoh (g)** | **Total (g)** | **Effp (%)** |
|---|---|---|---|---|---|---|
| Inpari 32 | 1 | 1 | 146,86 | 3,14 | 150 | 97,91 |
| | | 2 | 147,01 | 2,99 | 150 | 98,01 |
| | | 3 | 146,74 | 3,26 | 150 | 97,83 |
| | 2 | 1 | 146,26 | 3,74 | 150 | 97,51 |
| | | 2 | 147,31 | 2,69 | 150 | 98,21 |
| | | 3 | 146,67 | 3,33 | 150 | 97,78 |
| Mekongga | 1 | 1 | 145,33 | 4,67 | 150 | 96,89 |
| | | 2 | 145,54 | 4,64 | 150 | 97,03 |
| | | 3 | 146,28 | 3,72 | 150 | 97,52 |
| | 2 | 1 | 145,87 | 4,13 | 150 | 97,25 |
| | | 2 | 145,65 | 4,35 | 150 | 97,10 |
| | | 3 | 147,03 | 2,97 | 150 | 98,02 |

## Lampiran 2. Perhitungan Uji Kinerja

### Varietas Inpari 32

a. Kapasitas masukan

$$Kpm = \frac{Bgm}{t_p} \times 60$$

| Pengulangan 1 | Pengulangan 2 |
|---|---|
| $Kpm = \frac{Bgm}{t_p} \times 60$ | $Kpm = \frac{Bgm}{t_p} \times 60$ |
| $Kpm = \frac{40}{6,05} \times 60$ | $Kpm = \frac{40}{5,96} \times 60$ |
| $Kpm = 396,69$ | $Kpm = 402,68$ |

b. Kapasitas keluaran

$$Kkr = \frac{Bbk}{t_k} \times 60$$

| Pengulangan 1 | Pengulangan 2 |
|---|---|
| $Kpm = \frac{Bbk}{t_k} \times 60$ | $Kpm = \frac{Bbk}{t_k} \times 60$ |
| $Kpm = \frac{28}{5,55} \times 60$ | $Kpm = \frac{28,5}{5,63} \times 60$ |
| $Kpm = 302,70$ | $Kpm = 303,73$ |

c. Persentase beras patah

$$bp = \frac{mbp}{mc} \times 100\%$$

Pengulangan 1

| Sampel 1 | Sampel 2 | Sampel 3 |
|---|---|---|
| $bp = \frac{mbp}{mc} \times 100\%$ | $bp = \frac{mbp}{mc} \times 100\%$ | $bp = \frac{mbp}{mc} \times 100\%$ |
| $bp = \frac{51,49}{150} \times 100\%$ | $bp = \frac{47,57}{150} \times 100\%$ | $bp = \frac{48,76}{150} \times 100\%$ |
| $bp = 34,33\%$ | $bp = 31,71\%$ | $bp = 32,51\%$ |

Pengulangan 2

| Sampel 1 | Sampel 2 | Sampel 3 |
|---|---|---|
| $bp=\frac{mbp}{mc} \times 100\%$ | $bp=\frac{mbp}{mc} \times 100\%$ | $bp=\frac{mbp}{mc} \times 100\%$ |
| $bp=\frac{47,42}{150} \times 100\%$ | $bp=\frac{48,92}{150} \times 100\%$ | $bp=\frac{48,93}{150} \times 100\%$ |
| bp= 31,61% | bp= 32,61% | bp= 32,62% |

d. Persentase menir

$$bm = \frac{bbm}{mc} \times 100\%$$

Pengulangan 1

| Sampel 1 | Sampel 2 | Sampel 3 |
|---|---|---|
| $bm=\frac{bbm}{mc} \times 100\%$ | $bp=\frac{bbm}{mc} \times 100\%$ | $bp=\frac{bbm}{mc} \times 100\%$ |
| $bp=\frac{3,53}{150} \times 100\%$ | $bp=\frac{2,68}{150} \times 100\%$ | $bp=\frac{2,85}{150} \times 100\%$ |
| bp= 2,35% | bp= 1,79% | bp= 1,90% |

Pengulangan 2

| Sampel 1 | Sampel 2 | Sampel 3 |
|---|---|---|
| $bm=\frac{bbm}{mc} \times 100\%$ | $bp=\frac{bbm}{mc} \times 100\%$ | $bp=\frac{bbm}{mc} \times 100\%$ |
| $bp=\frac{2,37}{150} \times 100\%$ | $bp=\frac{2,54}{150} \times 100\%$ | $bp=\frac{2,74}{150} \times 100\%$ |
| bp= 1,58% | bp= 1,69% | bp= 1,83% |

e. Persentase kepala

$$bu=\frac{mbu}{mc}\times 100\%$$

Pengulangan 1

| Sampel 1 | Sampel 2 | Sampel 3 |
|---|---|---|
| $bm=\frac{mbu}{mc} \times 100\%$ | $bp=\frac{mbu}{mc} \times 100\%$ | $bp=\frac{mbu}{mc} \times 100\%$ |

$bp=\frac{91,84}{150} \times 100\%$ $bp=\frac{96,76}{150} \times 100\%$ $bp=\frac{95,13}{150} \times 100\%$

bp= 61,23% bp= 64,51% bp= 63,42%

Pengulangan 2

Sampel 1 Sampel 2 Sampel 3

$bm=\frac{mbu}{mc} \times 100\%$ $bp=\frac{mbu}{mc} \times 100\%$ $bp=\frac{mbu}{mc} \times 100\%$

$bp=\frac{96,47}{150} \times 100\%$ $bp=\frac{95,85}{150} \times 100\%$ $bp=\frac{95}{150} \times 100\%$

bp= 64,31% bp= 63,90% bp= 63,33%

f. Rendemen

$$R=\frac{Bbk}{Bgm}\times 100\%$$

Pengulangan 1 Pengulangan 2

$R=\frac{Bbk}{Bgm}\times 100\%$ $R=\frac{Bbk}{Bgm}\times 100\%$

$R=\frac{28}{40}\times 100\%$ $R=\frac{28,5}{40}\times 100\%$

R= 70,00 % R= 71,25 %

g. Efisiensi pengupasan pertama

$$Effp = \frac{bgk}{mbpk}\times 100\%$$

Pengulangan 1

Sampel 1 Sampel 2 Sampel 3

$Efp= \frac{52,39}{150} \times 100\%$ $Efp= \frac{46,61}{150} \times 100\%$ $Efp= \frac{47,12}{150} \times 100\%$

= 0,3493 × 100% = 0,3107 × 100% = 0,3141 × 100%

= 34,93% = 31,07% = 31,41%

Pengulangan 2

Sampel 1

$Efp = \frac{39,94}{150} \times 100\%$

$= 0,2663 \times 100\%$

$= 26,63\%$

Sampel 2

$Efp = \frac{39,68}{150} \times 100\%$

$= 0,2645 \times 100\%$

$= 26,45\%$

Sampel 3

$Efp = \frac{41,51}{150} \times 100\%$

$= 0,2767 \times 100\%$

$= 27,67\%$

h. Efisiensi pengupasan kedua

$$Effp = \frac{bgk}{mbpk} \times 100\%$$

Pengulangan 1

Sampel 1

$Efp = \frac{146,86}{150} \times 100\%$

$= 0,9791 \times 100\%$

$= 97,91\%$

Sampel 2

$Efp = \frac{147,86}{150} \times 100\%$

$= 0,9801 \times 100\%$

$= 98,01\%$

Sampel 3

$Efp = \frac{146,74}{150} \times 100\%$

$= 0,9783 \times 100\%$

$= 97,83\%$

Pengulangan 2

Sampel 1

$Efp = \frac{146,26}{150} \times 100\%$

$= 0,9751 \times 100\%$

$= 97,51\%$

Sampel 2

$Efp = \frac{147,31}{150} \times 100\%$

$= 0,9821 \times 100\%$

$= 98,21\%$

Sampel 3

$Efp = \frac{146,28}{150} \times 100\%$

$= 0,9778 \times 100\%$

$= 97,78\%$

**Varietas Mekongga**

a. Kapasitas masukan

Pengulangan 1

$Kpm = \frac{Bgm}{t_p} \times 60$

$Kpm = \frac{40}{6,35} \times 60$

$Kpm = 377,95$

Pengulangan 2

$Kpm = \frac{Bgm}{t_p} \times 60$

$Kpm = \frac{40}{6} \times 60$

$Kpm = 400$

b. Kapasitas keluaran

| Pengulangan 1 | Pengulangan 2 |
|---|---|
| $Kpm=\frac{Bbk}{t_k}\times 60$ | $Kpm=\frac{Bbk}{t_k}\times 60$ |
| $Kpm=\frac{28}{5,85}\times 60$ | $Kpm=\frac{28}{5,83}\times 60$ |
| $Kpm= 287,18$ | $Kpm= 288,16$ |

c. Persentase beras patah

Pengulangan 1

| Sampel 1 | Sampel 2 | Sampel 3 |
|---|---|---|
| $bp=\frac{mbp}{mc}\times 100\%$ | $bp=\frac{mbp}{mc}\times 100\%$ | $bp=\frac{mbp}{mc}\times 100\%$ |
| $bp=\frac{83,11}{150}\times 100\%$ | $bp=\frac{83,43}{150}\times 100\%$ | $bp=\frac{84,18}{150}\times 100\%$ |
| $bp= 55,41\%$ | $bp= 55,62\%$ | $bp= 56,12\%$ |

Pengulangan 2

| Sampel 1 | Sampel 2 | Sampel 3 |
|---|---|---|
| $bp=\frac{mbp}{mc}\times 100\%$ | $bp=\frac{mbp}{mc}\times 100\%$ | $bp=\frac{mbp}{mc}\times 100\%$ |
| $bp=\frac{78,75}{150}\times 100\%$ | $bp=\frac{80,08}{150}\times 100\%$ | $bp=\frac{78,95}{150}\times 100\%$ |
| $bp= 52,50\%$ | $bp= 53,39\%$ | $bp= 52,63\%$ |

d. Persentase menir

Pengulangan 1

| Sampel 1 | Sampel 2 | Sampel 3 |
|---|---|---|
| $bp=\frac{bbm}{mc}\times 100\%$ | $bp=\frac{bbm}{mc}\times 100\%$ | $bp=\frac{bbm}{mc}\times 100\%$ |
| $bp=\frac{5,43}{150}\times 100\%$ | $bp=\frac{3,67}{150}\times 100\%$ | $bp=\frac{1,82}{150}\times 100\%$ |

bp= 3,62% bp= 2,45% bp= 1,21%

Pengulangan 2

| Sampel 1 | Sampel 2 | Sampel 3 |
|---|---|---|
| $bp=\frac{bbm}{mc}\times 100\%$ | $bp=\frac{bbm}{mc}\times 100\%$ | $bp=\frac{bbm}{mc}\times 100\%$ |
| $bp=\frac{1,38}{150}\times 100\%$ | $bp=\frac{1,86}{150}\times 100\%$ | $bp=\frac{2,59}{150}\times 100\%$ |
| bp= 0,92% | bp= 1,24% | bp= 1,73% |

e. Persentase kepala

Pengulangan 1

| Sampel 1 | Sampel 2 | Sampel 3 |
|---|---|---|
| $bp=\frac{mbu}{mc}\times 100\%$ | $bp=\frac{mbu}{mc}\times 100\%$ | $bp=\frac{mbu}{mc}\times 100\%$ |
| $bp=\frac{56,79}{150}\times 100\%$ | $bp=\frac{58,44}{150}\times 100\%$ | $bp=\frac{60,28}{150}\times 100\%$ |
| bp= 37,86% | bp= 38,96% | bp= 40,19% |

Pengulangan 2

| Sampel 1 | Sampel 2 | Sampel 3 |
|---|---|---|
| $bp=\frac{mbu}{mc}\times 100\%$ | $bp=\frac{mbu}{mc}\times 100\%$ | $bp=\frac{mbu}{mc}\times 100\%$ |
| $bp=\frac{65,74}{150}\times 100\%$ | $bp=\frac{63,71}{150}\times 100\%$ | $bp=\frac{65,49}{150}\times 100\%$ |
| bp= 43,83% | bp= 42,47% | bp= 43,66% |

f. Rendemen

| Pengulangan 1 | Pengulangan 2 |
|---|---|
| $R=\frac{Bbk}{Bgm}\times 100\%$ | $R=\frac{Bbk}{Bgm}\times 100\%$ |
| $R=\frac{28}{40}\times 100\%$ | $R=\frac{28}{40}\times 100\%$ |
| R= 70,00 % | R= 70,00 % |

g. Efesiensi pengupasan

Pengulangan 1

Sampel 1

$$Efp = \frac{44,34}{150} \times 100\%$$

$$= 0,2956 \times 100\%$$

$$= 29,56\%$$

Sampel 2

$$Efp = \frac{41,05}{150} \times 100\%$$

$$= 0,2736 \times 100\%$$

$$= 27,36\%$$

Sampel 3

$$Efp = \frac{35,95}{150} \times 100\%$$

$$= 0,2396 \times 100\%$$

$$= 23,96\%$$

Pengulangan 2

Sampel 1

$$Efp = \frac{50,86}{150} \times 100\%$$

$$= 0,3390 \times 100\%$$

$$= 33,90\%$$

Sampel 2

$$Efp = \frac{47,32}{150} \times 100\%$$

$$= 0,3154 \times 100\%$$

$$= 31,54\%$$

Sampel 3

$$Efp = \frac{41,47}{150} \times 100\%$$

$$= 0,2764 \times 100\%$$

$$= 27,64\ \%$$

h. Efisiensi pengupasan kedua

$$Effp = \frac{bgk}{mbpk} \times 100\%$$

Pengulangan 1

Sampel 1

$$Efp = \frac{145,33}{150} \times 100\%$$

$$= 0,9689 \times 100\%$$

$$= 96,89\%$$

Sampel 2

$$Efp = \frac{145,54}{150} \times 100\%$$

$$= 0,9703 \times 100\%$$

$$= 97,03\%$$

Sampel 3

$$Efp = \frac{146,28}{150} \times 100\%$$

$$= 0,952 \times 100\%$$

$$= 97,52\%$$

Pengulangan 2

Sampel 1

$$Efp = \frac{145,87}{150} \times 100\%$$

$$= 0,9725 \times 100\%$$

$$= 97,25\%$$

Sampel 2

$$Efp = \frac{145,65}{150} \times 100\%$$

$$= 0,9710 \times 100\%$$

$$= 97,10\%$$

Sampel 3

$$Efp = \frac{147,03}{150} \times 100\%$$

$$= 0,9802 \times 100\%$$

$$= 98,02\%$$

Harga Beras Per Kg Perbulan

| Tahun | Rata-rata harga beras per bulan (Rp) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 2014 | 7.902.250 | 8.060.930 | 8.065.480 | 7.619.570 | 7.680.060 | 7.706.250 | 7.623.300 | 7.736.840 | 7.557.460 | 7.693.150 | 7.962.070 | 8.412.280 |
| 2015 | 9.280.390 | 9.194.530 | 8.995.320 | 8.510.710 | 8.061.390 | 8.120.590 | 8.307.520 | 8.724.840 | 8.906.130 | 8.916.920 | 9.031.520 | 9.203.280 |
| 2016 | 9.280.390 | 9.194.530 | 8.995.320 | 8.510.710 | 8.488.490 | 8.581.740 | 8.557.500 | 8.501.980 | 8.577.600 | 8.597.490 | 8.632.240 | 8.657.710 |
| 2017 | 8.669.300 | 8.583.760 | 8.339.210 | 8.306.480 | 8.374.330 | 8.380.340 | 8.357.870 | 8.436.370 | 8.672.420 | 8.833.990 | 9.039.440 | 9.308.900 |
| 2018 | 9.792.590 | 9.987.100 | 9.554.060 | 8.991.360 | 9.001.500 | 8.941.380 | 9.014.560 | 8.976.970 | 9.125.000 | 9.193.730 | 9.425.680 | 9.432.320 |
| 2019 | 9.536.300 | 9.474.500 | 9.271.130 | 8.936.360 | 8.953.330 | 9.011.620 | 8.931.020 | 9.048.000 | 9.140.600 | 9.241.920 | 9.244.950 | 9.252.550 |
| 2020 | 9.518.850 | 9.521.950 | 9.460.760 | 8.989.000 | 8.972.520 | 8.926.150 | 8.919.580 | 8.986.320 | 9.026.050 | 9.146.540 | 9.094.690 | 9.055.500 |
| 2021 | 9.036.420 | 9.145.730 | 8.741.800 | 8.675.230 | 8.710.440 | 8.694.950 | 8.481.430 | 8.688.770 | 8.588.590 | 8.630.830 | 8.711.190 | 8.888.500 |
| 2022 | 9.038.140 | 9.061.740 | 9.061.050 | 8.853.240 | 8.902.120 | 8.848.660 | 8.905.520 | 9.069.270 | 9.465.630 | 9.516.090 | 9.542.120 | 9.806.580 |

*Cashflow*

| Uraian | Tahun | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 |
| **A. Inflow** | | | | | | | | | | |
| Penerimaan Penggilingan Gabah | | 94.019.640 | 105.253.140 | 104.575.700 | 103.302.410 | 111.436.250 | 110.042.280 | 109.617.910 | 104.993.880 | 110.070.160 |
| **Total Inflow** | | **94.019.640** | **105.253.140** | **104.575.700** | **103.302.410** | **111.436.250** | **110.042.280** | **109.617.910** | **104.993.880** | **110.070.160** |
| **B. Outflow** | | | | | | | | | | |
| Biaya Investasi | | | | | | | | | | |
| RMU | 11.000.000 | | | | | | | | | |
| Mesin Penggerak | 19.000.000 | | | | | | | | | |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Penjahit Karung | 450.000 | | | | | | 450.000,00 | | | |
| Timbangan | 4.300.000 | | | | | | | | | |
| Kipas Angin | 120.000 | | | 120.000 | | | 120.000,00 | | | 120.000 |
| Baskom | 60.000 | | | | | | 60.000,00 | | | |
| **Total Biaya Investasi** | **34.930.000** | | | **120.000** | | | **630.000,00** | | | **120.000** |
| Biaya Variabel | | | | | | | | | | |
| Solar | | 19.162.500 | 17.629.500 | 13.158.250 | 13.158.250 | 13.158.250 | 13.158.250 | 17.527.300 | 17.374.000 | 17.374.000 |
| Bensin | | 15.360.000 | 14.016.000 | 12.480.000 | 12.384.000 | 12.384.000 | 12.384.000 | 12.384.000 | 14.688.000 | 19.200.000 |
| **Total Biaya Variabel** | | **34.522.500** | **31.645.500** | **25.638.250** | **25.542.250** | **25.542.250** | **25.542.250** | **29.911.300** | **32.062.000** | **36.574.000** |
| Biaya Tetap | | | | | | | | | | |
| Listrik | | 55.000 | 55.000 | 55.000 | 55.000 | 55.000 | 55.000 | 55.000 | 55.000 | 55.000 |
| Pajak bumi bangunan | | 10.000 | 10.000 | 10.000 | 10.000 | 10.000 | 10.000 | 10.000 | 10.000 | 10.000 |
| Pajak tahunan mobil | | 1.328.600 | 1.328.600 | 1.328.600 | 1.328.600 | 1.328.600 | 1.328.600 | 1.328.600 | 1.328.600 | 1.328.600 |
| Pajak 5 tahunan mobil | | | 818.000 | | | | | 818.000 | | |
| Pelumas mobil | | 400.000 | 400.000 | 400.000 | 400.000 | 400.000 | 400.000 | 400.000 | 400.000 | 400.000 |
| Upah Tenaga Kerja | | 36.000.000 | 36.000.000 | 36.000.000 | 36.000.000 | 36.000.000 | 36.000.000 | 36.000.000 | 36.000.000 | 36.000.000 |
| **Total Biaya Tetap** | | **37.793.600** | **38.611.600** | **37.793.600** | **37.793.600** | **37.793.600** | **37.793.600** | **38.611.600** | **37.793.600** | **37.793.600** |
| **TOTAL OUTFLOW** | | **72.316.100** | **70.257.100** | **63.551.850** | **63.335.850** | **63.335.850** | **63.965.850** | **68.522.900** | **69.855.600** | **74.487.600** |

*Net Present Value*

| Periode | Tahun | Biaya tetap (Rp) | Biaya variabel (Rp) | Biaya investasi (Rp) | Total biaya (Rp) | Penerimaan total (Rp) | Keuntungan (Rp) | DF (i=12%) | PV |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 2013 | - | - | 34.930.000 | 34.930.000 | 0,00 | (34.930.000) | 1 | (34.930.000) |
| 1 | 2014 | 37.793.600 | 34.522.500 | - | 72.316.100 | 94.019.640 | 21.703.540 | 0,89285714 | 19.378.160,71 |
| 2 | 2015 | 38.611.600 | 31.645.500 | - | 70.257.100 | 105.253.140 | 34.996.040 | 0,79719388 | 27.898.628,83 |
| 3 | 2016 | 37.793.600 | 25.638.250 | 120.000 | 63.551.850 | 104.575.700 | 41.023.850 | 0,71178025 | 29.199.966,12 |
| 4 | 2017 | 37.793.600 | 25.542.250 | - | 63.335.850 | 103.302.410 | 39.966.560 | 0,63551808 | 25.399.471,41 |
| 5 | 2018 | 37.793.600 | 25.542.250 | 60.000 | 63.395.850 | 111.436.250 | 48.040.400 | 0,56742686 | 27.259.413,12 |
| 6 | 2019 | 37.793.600 | 25.542.250 | 570.000 | 63.905.850 | 110.042.280 | 46.136.430 | 0,50663112 | 23.374.151,26 |
| 7 | 2020 | 38.611.600 | 29.911.300 | - | 68.522.900 | 109.617.910 | 41.095.010 | 0,45234922 | 18.589.295,53 |
| 8 | 2021 | 37.793.600 | 32.062.000 | - | 69.855.600 | 104.993.880 | 35.138.280 | 0,40388323 | 14.191.761,95 |
| 9 | 2022 | 37.793.600 | 36.574.000 | 120.000 | 74.487.600 | 110.070.160 | 35.582.560 | 0,36061002 | 12.831.427,85 |
| | | | | | | | | **Total** | **163.192.276,78** |

*Benefit Cost Ratio*

| Tahun | Biaya tetap (Rp) | Biaya variabel (Rp) | Biaya investasi (Rp) | Total biaya (Rp) | Penerimaan total (Rp) | Keuntungan (Rp) | DF (i=12%) | PV | B (benefit) | C (cost) |
|---|---|---|---|---|---|---|---|---|---|---|
| 2013 | - | - | 34.930.000 | 34.930.000 | 0,00 | (34.930.000) | 1 | (34.930.000) | - | 34.930.000 |
| 2014 | 37.793.600 | 34.522.500 | - | 72.316.100 | 94.019.640 | 21.703.540 | 0,892857143 | 19.378.160,71 | 83.946.107,14 | 64.567.946,43 |
| 2015 | 38.611.600 | 31.645.500 | - | 70.257.100 | 105.253.140 | 34.996.040 | 0,797193878 | 27.898.628,83 | 83.907.158,80 | 56.008.529,97 |
| 2016 | 37.793.600 | 25.638.250 | 120.000 | 63.551.850 | 104.575.700 | 41.023.850 | 0,711780248 | 29.199.966,12 | 74.434.917,66 | 45.234.951,54 |
| 2017 | 37.793.600 | 25.542.250 | - | 63.335.850 | 103.302.410 | 39.966.560 | 0,635518078 | 25.399.471,41 | 65.650.549,10 | 40.251.077,69 |
| 2018 | 37.793.600 | 25.542.250 | 60.000 | 63.395.850 | 111.436.250 | 48.040.400 | 0,567426856 | 27.259.413,12 | 63.231.920,95 | 35.972.507,83 |
| 2019 | 37.793.600 | 25.542.250 | 570.000 | 63.905.850 | 110.042.280 | 46.136.430 | 0,506631121 | 23.374.151,26 | 55.750.843,69 | 32.376.692,44 |
| 2020 | 38.611.600 | 29.911.300 | - | 68.522.900 | 109.617.910 | 41.095.010 | 0,452349215 | 18.589.295,53 | 49.585.575,58 | 30.996.280,05 |
| 2021 | 37.793.600 | 32.062.000 | - | 69.855.600 | 104.993.880 | 35.138.280 | 0,403883228 | 14.191.761,95 | 42.405.267,17 | 28.213.505,22 |
| 2022 | 37.793.600 | 36.574.000 | 120.000 | 74.487.600 | 110.070.160 | 35.582.560 | 0,360610025 | 12.831.427,85 | 39.692.403,15 | 26.860.975,30 |
| | | | | | | | **Total** | **163.192.276,78** | **558.604.743,24** | **395.412.466,46** |

## Lampiran 4. Perhitungan Analisis Usaha

1. Perhitungan *Benefit Cost Ratio*

$$BCR = \frac{558.604.743,24}{395.412.466,46}$$
$$= 1,41$$

2. Lampiran perhitungan nilai penyusutan

$$D = \frac{P-S}{N}$$

a. RMU

Harga alat Rp. 11.000.000

Umur ekonomis 15 tahun

S = 10% × 11.000.000

= 1.100.000

$$D = \frac{11.000.000 - 1.100.000}{15}$$

D= 660.000

b. Mesin penggerak

Harga alat Rp. 19.000.000

Umur ekonomis 15 tahun

S = 10% × 19.000.000

= 1.900.000

$$D = \frac{19.000.000 - 1.900.000}{15}$$

D= 1.140.000

c. Penjahit karung

Harga alat Rp. 450.000

Umur ekonomis 5 tahun

S = 10% × 450.000

= 45.000

$$D = \frac{450.000 - 45.000}{5}$$

D= 81.000

d. Timbangan

Harga alat Rp. 2.150.000

Umur ekonomis 10 tahun

S = 10% × 2.150.000

= 215.000

$$D = \frac{2.150.000 - 215.000}{10}$$

D= 193.500

e. Kipas angin

Harga alat Rp. 120.000

Umur ekonomis 3 tahun

S = 10% × 120.000

= 12.000

$$D = \frac{120.000 - 12.000}{3}$$

D= 36.000

f. Baskom

Harga alat Rp. 20.000

Umur ekonomis 5 tahun

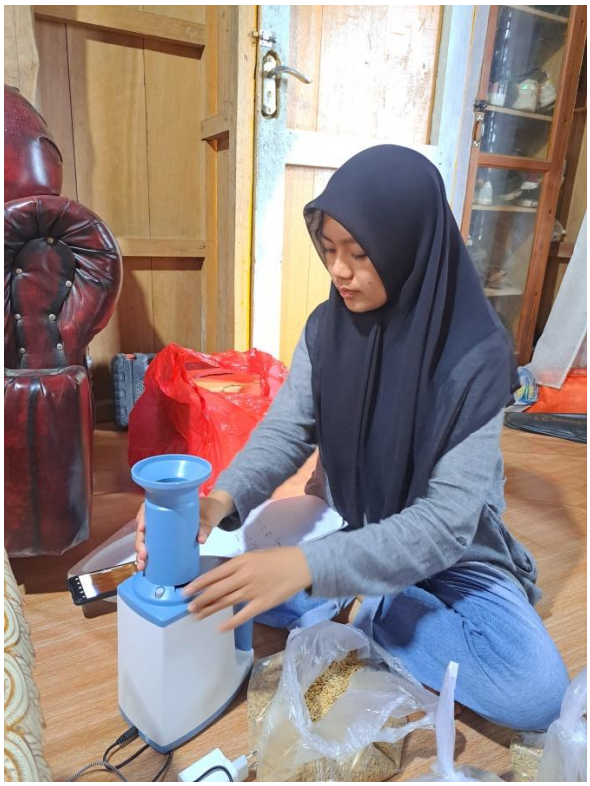
S = 10% × 20.000

= 2.000

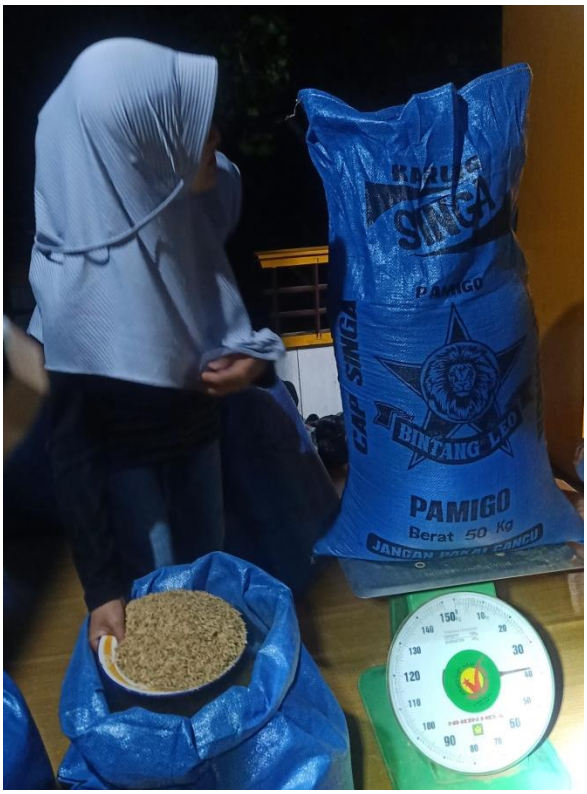
$$D = \frac{20.000 - 2.000}{5}$$

D= 3.600

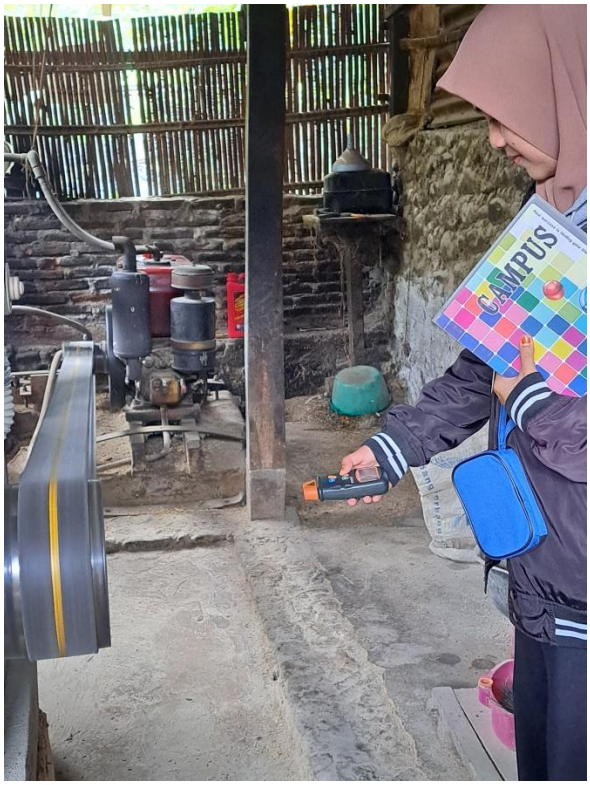
## Lampiran 5. Dokumentasi Penelitian



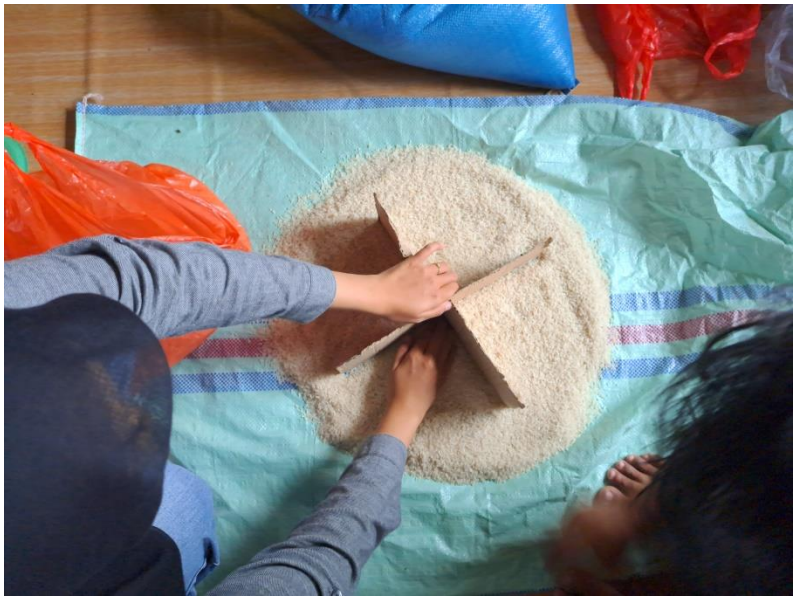
Pengukuran kadar air gabah



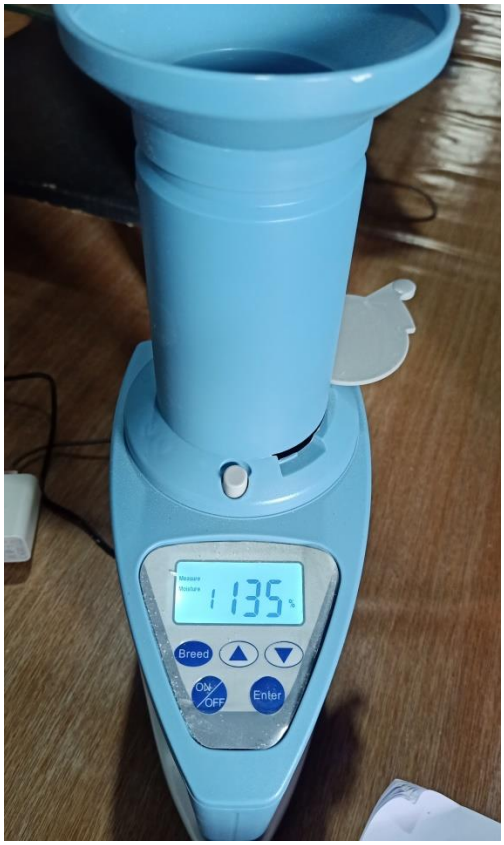

Membagi gabah masing-masing 40kg



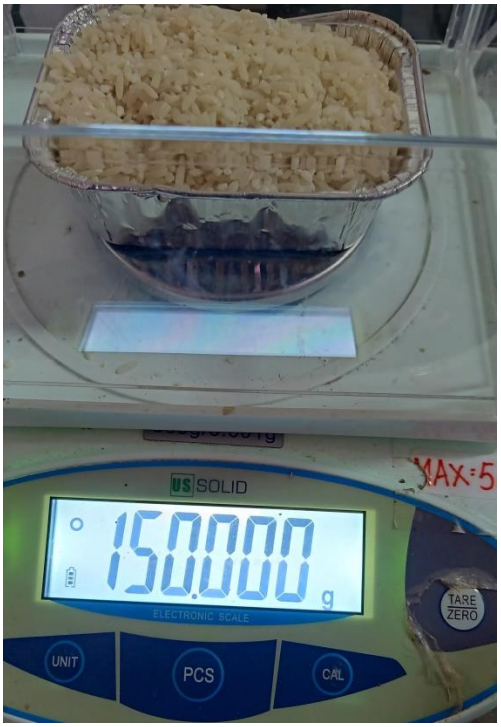

Pengukuran kecepatan putaran mesin



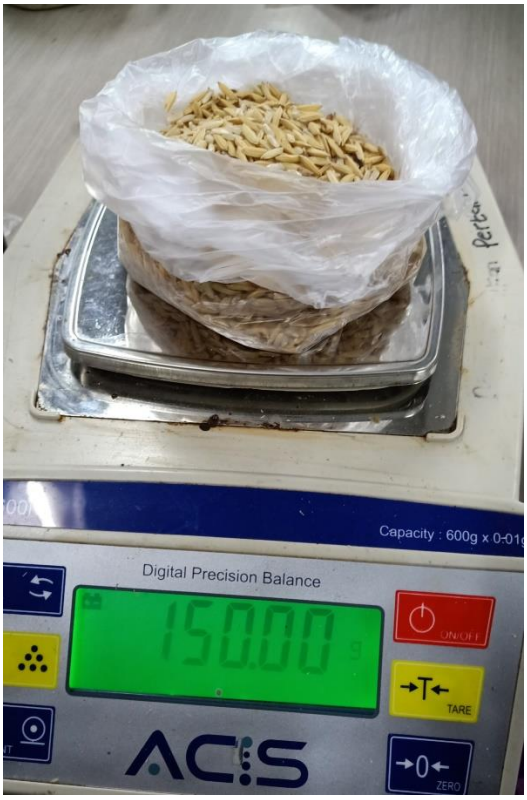
*Quartering* beras sosoh hasil penggilingan



Pengukuran kadar air gabah



Pengambilan sampel beras sosoh 150 g



Pengambilan sampel beras pecah kulit 150 g