# LAMPIRAN

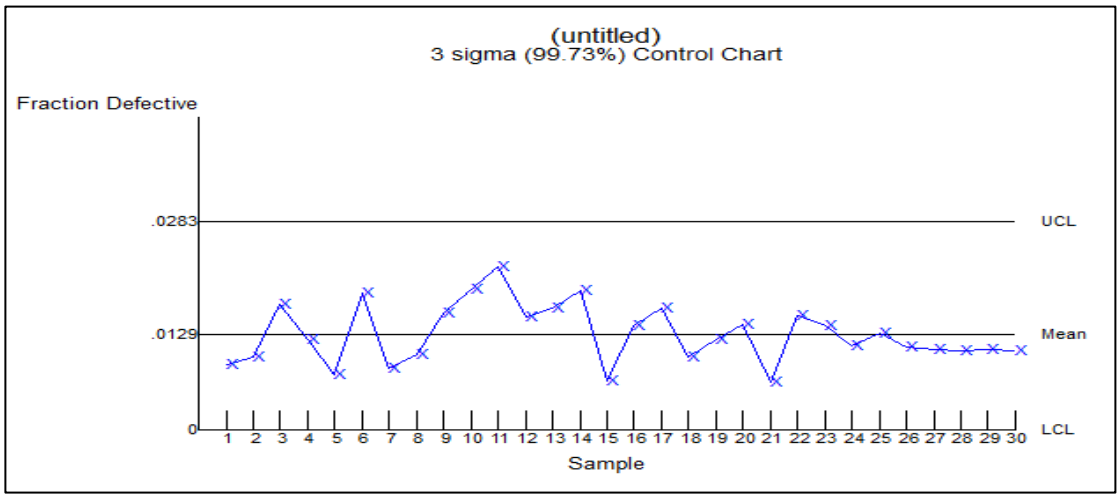
**Lampiran 1.** Jumlah Kerusakan TBS (Tandan Buah Segar) PT. Kalimantan Sanggar Pusaka Bulan Mei 2016.

| Tgl | Jumlah Penerimaan (Ton) | Jenis Kerusakan | | | | | | | Jumlah Cacat (Ton) |
|---|---|---|---|---|---|---|---|---|---|
| | | F 00 (Ton) | F 0 (Ton) | F5 (Ton) | F6 (Ton) | TP (Ton) | BR (Ton) | BP (Ton) | |
| 2 | 220.96 | 0.69 | 2.23 | 0.47 | 0.21 | 0.61 | 0.08 | 0.03 | 4.33 |
| 3 | 294.32 | 0.72 | 2.17 | 0.66 | - | 1.24 | 0.05 | - | 4.83 |
| 4 | 393.80 | 1.32 | 4.92 | 0.91 | - | 1.10 | 0.13 | - | 8.38 |
| 5 | 274.59 | 1.45 | 2.99 | 0.57 | - | 0.94 | 0.04 | - | 5.98 |
| 6 | 177.77 | 0.69 | 1.92 | 0.42 | - | 0.51 | 0.08 | 0.05 | 3.68 |
| 7 | 385.53 | 1.73 | 5.07 | 0.90 | 0.09 | 1.14 | 0.19 | - | 9.12 |
| 8 | 218.63 | 0.45 | 2.43 | 0.54 | - | 0.64 | - | - | 4.05 |
| 9 | 276.80 | 0.61 | 2.80 | 0.66 | 0.14 | 0.74 | 0.01 | - | 4.96 |
| 10 | 444.16 | 0.51 | 4.83 | 1.07 | 0.17 | 1.10 | 0.07 | - | 7.75 |
| 11 | 418.16 | 1.57 | 4.77 | 0.97 | 0.92 | 1.12 | 0.04 | - | 9.38 |
| 12 | 490.58 | 1.64 | 6.06 | 1.09 | 0.53 | 1.40 | 0.14 | - | 10.85 |
| 13 | 397.60 | 0.82 | 4.19 | 0.93 | 0.22 | 1.23 | 0.08 | - | 7.47 |
| 14 | 428.56 | 1.24 | 4.37 | 1.10 | 0.05 | 1.33 | 0.01 | - | 8.10 |
| 15 | 451.58 | 0.87 | 4.51 | 1.29 | 0.16 | 1.52 | 0.91 | - | 9.26 |
| 16 | 210.39 | 0.42 | 1.39 | 0.58 | 0.16 | 0.65 | 0.04 | - | 3.25 |
| 17 | 356.43 | 1.17 | 3.24 | 0.86 | 0.61 | 1.03 | - | - | 6.92 |
| 18 | 396.23 | 1.16 | 4.48 | 1.06 | 0.31 | 1.01 | 0.07 | - | 8.10 |
| 19 | 253.65 | 0.57 | 2.50 | 0.70 | 0.20 | 0.86 | - | - | 4.83 |
| 20 | 351.96 | 0.66 | 3.10 | 0.90 | 0.17 | 1.12 | 0.01 | - | 5.97 |
| 21 | 352.41 | 1.05 | 3.86 | 0.90 | 0.19 | 1.10 | 0.06 | - | 6.99 |
| 22 | 156.07 | 0.39 | 1.94 | 0.31 | - | 0.43 | 0.10 | - | 3.17 |
| 23 | 351.58 | 1.34 | 3.63 | 0.97 | 0.47 | 1.15 | 0.01 | - | 7.58 |
| 24 | 352.69 | 0.83 | 3.71 | 0.89 | 0.33 | 1.14 | 0.04 | - | 6.93 |
| 25 | 413.74 | 0.95 | 2.29 | 1.05 | - | 1.25 | 0.04 | - | 5.57 |
| 26 | 344.07 | 0.71 | 3.77 | 0.79 | - | 1.13 | - | - | 6.39 |
| 27 | 315.64 | 0.73 | 2.47 | 0.80 | 0.61 | 0.90 | - | - | 5.50 |
| 28 | 308.65 | 0.69 | 2.48 | 0.81 | 0.52 | 0.84 | - | - | 5.34 |
| 29 | 244.70 | 0.60 | 3.15 | 0.63 | 0.09 | 0.72 | 0.03 | 0.01 | 5.23 |
| 30 | 255.05 | 1.05 | 2.82 | 0.58 | 0.09 | 0.76 | 0.02 | - | 5.32 |
| 31 | 289.88 | 0.81 | 2.80 | 0.75 | 0.07 | 0.81 | 0.01 | - | 5.25 |
| Total | 9,826 | 27.43 | 100.87 | 24.14 | 6.34 | 29.51 | 2.26 | 0.09 | 190.50 |

**Lampiran 2.** Data Pengolahan *Quality Control* Penerimaan TBS (Tandan Buah Segar) PT. Kalimantan Sanggar Pusaka Menggunakan Peta Kendali *P* (*P Chart*). (*Quality Control Results*)

| Sample | Number of Defects | Fraction Defective | | 3 sigma (99.73%) |
|---|---|---|---|---|
| Sample 1 | 4.33 | .0088 | Total Defects | 190.48 |
| Sample 2 | 4.83 | .0098 | Total units sampled | 14717.4 |
| Sample 3 | 8.38 | .0171 | Defect rate (pbar) | .0129 |
| Sample 4 | 5.98 | .0122 | Std dev of proportions | .0051 |
| Sample 5 | 3.68 | .0075 | | |
| Sample 6 | 9.12 | .0186 | UCL (Upper control limit) | .0283 |
| Sample 7 | 4.05 | .0083 | CL (Center line) | .0129 |
| Sample 8 | 4.96 | .0101 | LCL (Lower Control Limit) | 0 |
| Sample 9 | 7.75 | .0158 | | |
| Sample 10 | 9.38 | .0191 | | |
| Sample 11 | 10.85 | .0221 | | |
| Sample 12 | 7.47 | .0152 | | |
| Sample 13 | 8.1 | .0165 | | |
| Sample 14 | 9.26 | .0189 | | |
| Sample 15 | 3.25 | .0066 | | |
| Sample 16 | 6.92 | .0141 | | |
| Sample 17 | 8.1 | .0165 | | |
| Sample 18 | 4.83 | .0098 | | |
| Sample 19 | 5.97 | .0122 | | |
| Sample 20 | 6.99 | .0142 | | |
| Sample 21 | 3.17 | .0065 | | |
| Sample 22 | 7.58 | .0155 | | |
| Sample 23 | 6.93 | .0141 | | |
| Sample 24 | 5.57 | .0114 | | |
| Sample 25 | 6.39 | .013 | | |
| Sample 26 | 5.5 | .0112 | | |
| Sample 27 | 5.34 | .0109 | | |
| Sample 28 | 5.23 | .0107 | | |
| Sample 29 | 5.32 | .0108 | | |
| Sample 30 | 5.25 | .0107 | | |

(*P Chart*)

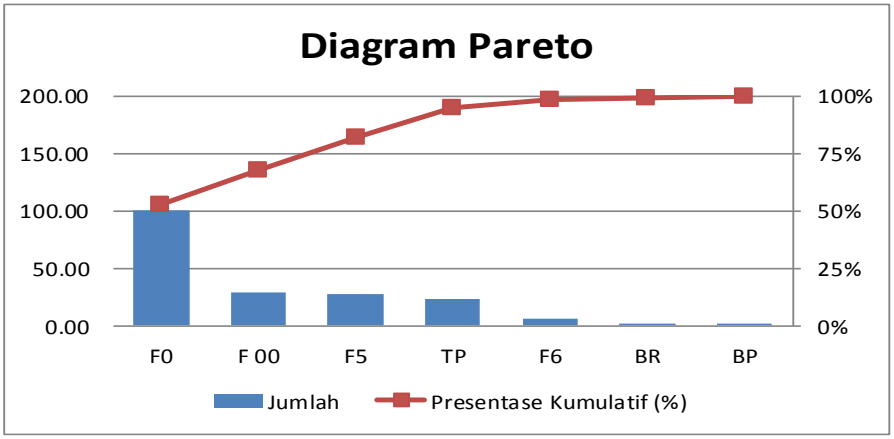


**Lampiran 3.** Data Pengolahan Quality Control Peneriman TBS (Tandan Buah Segar) dengan Menggunakan Diagram Pareto Bulan Mei 2016.

(PresentaseKumulatif)

| No | Jenis Kerusakan | Jumlah | Presentase | Presentase Kumulatif (%) |
|---|---|---|---|---|
| 1 | F0 | 100.87 | 53% | 53% |
| 2 | F 00 | 29.51 | 15% | 68% |
| 3 | F5 | 27.43 | 14% | 82% |
| 4 | TP | 24.14 | 13% | 95% |
| 5 | F6 | 6.34 | 3% | 98% |
| 6 | BR | 2.26 | 1% | 99% |
| 7 | BP | 0.09 | 0.0% | 100% |
| **TOTAL** | | **190.50** | **100%** | |

(Diagram Pareto)



**Lampiran 4.** Wawancara Terhadap Pihak PT. Kalimantan Sanggar Pusaka.

| No | Responden | | Keterangan |
|---|---|---|---|
| | Nama | Jabatan | |
| 1 | Palaniappan | Mill Manager | R 1 |
| 2 | T. Subertus | FFB. Grading | R 2 |

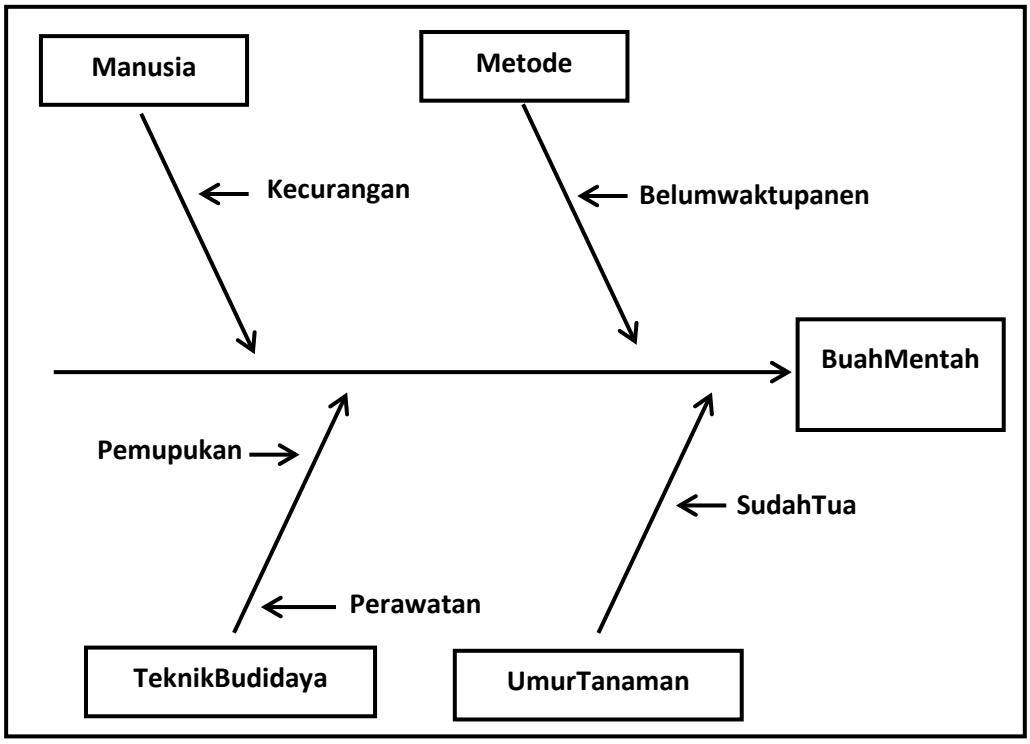
Wawancara Kepada Pimpinan dan Karyawan di PT. Kalimantan Sanggar Pusaka Mengenai Kerusakan Penerimaan TBS (Tandan Buah Segar) Bulan Mei 2016.

| No | Responden | Jenis Kerusakan | FaktorPenyebab |
|---|---|---|---|
| 1 | R1 | F 00 | • Waktu pemanenan<br>• Kondisi kebun<br>• Kecurangan Petani<br>• Pemupukan<br>• Lingkungan<br>• Perawatan |
| | | F 0 | • Waktu pemanenan<br>• Kondisi kebun<br>• Kecurangan petani<br>• Pemupukan<br>• Lingkungan<br>• Perawatan |
| | | F 5 | • Waktu Pemanenan |
| | | F 6 | • Kondisi kebun<br>• Buah memberondol |
| | | TP | • Pemotongan tidak sesuai<br>• Tidak dipotong |
| | | BR | • Buah jatuh dari pohon<br>• Proses bongkar muat di pabrik |
| | | BP | • Buah jatuh dari pohon |
| 2 | R2 | F 00 | • Waktu Pemanenan<br>• Kecurangan Petani<br>• Curah hujan<br>• Kondisi suhu<br>• Perawatan |

Wawancara Kepada Pimpinan dan Karyawan di PT. Kalimantan Sanggar Pusaka pada Tanggal 10 Juni 2016 Mengenai Kerusakan Penerimaan TBS (Tandan Buah Segar) Bulan Mei 2016.

| No | Responden | Jenis Kerusakan | FaktorPenyebab |
|---|---|---|---|
| 2 | R2 | F 0 | • Belum masa panen<br>• Kecurangan Petani<br>• Curah hujan<br>• Kondisi suhu<br>• Perawatan |
| | | F 5 | • Waktu pemanenan |
| | | F 6 | • Kebun tua<br>• Buah membrondol |
| | | TP | • Pemotongan tidak sesuai<br>• Tidak dipotong |
| | | BR | • Buah jatuh dari pohon<br>• Proses bongkar muat di pabrik |
| | | BP | • Buah jatuh dari pohon |

**Lampiran 5.** Diagram Sebab-Akibat.



**Lampiran 6.** *Daily Analysis Free Fatty Acid* / Asam Lemak Bebas (FFA) CPO (*Crude Palm Oil*) *Report* bulan Mei 2016.

| Tgl | ***Oil Production*** | | | | ***Storage Tank*** | | | |
|---|---|---|---|---|---|---|---|---|
| | ***Line*** | | | | ***No.*** | | | |
| | **1** | | **2** | | **4** | | **5** | |
| 1 | ≤ 3% | - | ≤ 3% | - | ≤ 5% | - | ≤ 5% | - |
| 2 | ≤ 3% | - | ≤ 3% | - | ≤ 5% | - | ≤ 5% | - |
| 3 | ≤ 3% | 2.58% | ≤ 3% | 2.73% | ≤ 5% | 3.78% | ≤ 5% | 2.95% |
| 4 | ≤ 3% | 2.68% | ≤ 3% | 3.02% | ≤ 5% | 4.45% | ≤ 5% | 3.05% |
| 5 | ≤ 3% | 2.95% | ≤ 3% | 2.66% | ≤ 5% | 4.45% | ≤ 5% | 3.05% |
| 6 | ≤ 3% | 2.91% | ≤ 3% | 2.56% | ≤ 5% | 4.45% | ≤ 5% | 2.95% |
| 7 | ≤ 3% | 2.91% | ≤ 3% | 2.61% | ≤ 5% | 4.45% | ≤ 5% | 2.95% |
| 8 | ≤ 3% | 2.77% | ≤ 3% | 2.89% | ≤ 5% | 4.45% | ≤ 5% | 2.95% |
| 9 | ≤ 3% | 2.86% | ≤ 3% | 2.77% | ≤ 5% | 4.45% | ≤ 5% | 2.86% |
| 10 | ≤ 3% | 3.62% | ≤ 3% | 2.49% | ≤ 5% | 3.80% | ≤ 5% | 2.77% |
| 11 | ≤ 3% | 3.60% | ≤ 3% | 2.53% | ≤ 5% | 3.80% | ≤ 5% | 2.86% |
| 12 | ≤ 3% | 4.34% | ≤ 3% | 2.75% | ≤ 5% | 3.80% | ≤ 5% | 2.95% |
| 13 | ≤ 3% | 3.83% | ≤ 3% | 2.68% | ≤ 5% | 3.80% | ≤ 5% | 2.95% |
| 14 | ≤ 3% | 3.05% | ≤ 3% | 2.87% | ≤ 5% | 3.80% | ≤ 5% | 2.95% |
| 15 | ≤ 3% | 2.43% | ≤ 3% | 3.39% | ≤ 5% | 3.80% | ≤ 5% | 2.95% |
| 16 | ≤ 3% | 2.40% | ≤ 3% | 3.63% | ≤ 5% | 3.80% | ≤ 5% | 3.04% |
| 17 | ≤ 3% | 2.42% | ≤ 3% | 3.45% | ≤ 5% | 3.82% | ≤ 5% | 2.86% |
| 18 | ≤ 3% | 2.49% | ≤ 3% | 3.77% | ≤ 5% | 3.84% | ≤ 5% | 2.95% |
| 19 | ≤ 3% | 2.95% | ≤ 3% | 3.86% | ≤ 5% | 3.86% | ≤ 5% | 3.05% |
| 20 | ≤ 3% | 2.91% | ≤ 3% | 3.16% | ≤ 5% | 3.86% | ≤ 5% | 3.08% |
| 21 | ≤ 3% | 2.91% | ≤ 3% | 2.79% | ≤ 5% | 3.86% | ≤ 5% | 3.05% |
| 22 | ≤ 3% | 3.60% | ≤ 3% | 2.72% | ≤ 5% | 4.05% | ≤ 5% | 3.23% |
| 23 | ≤ 3% | 4.34% | ≤ 3% | 2.83% | ≤ 5% | 4.15% | ≤ 5% | 3.32% |
| 24 | ≤ 3% | 3.83% | ≤ 3% | 2.95% | ≤ 5% | 4.24% | ≤ 5% | 3.42% |
| 25 | ≤ 3% | 3.16% | ≤ 3% | 2.62% | ≤ 5% | 4.35% | ≤ 5% | 3.42% |
| 26 | ≤ 3% | 2.79% | ≤ 3% | 2.49% | ≤ 5% | 4.35% | ≤ 5% | 3.42% |
| 27 | ≤ 3% | 2.72% | ≤ 3% | 2.81% | ≤ 5% | 4.45% | ≤ 5% | 3.41% |
| 28 | ≤ 3% | 2.83% | ≤ 3% | 2.42% | ≤ 5% | - | ≤ 5% | - |
| 29 | ≤ 3% | - | ≤ 3% | - | ≤ 5% | - | ≤ 5% | - |
| 30 | ≤ 3% | 2.95% | ≤ 3% | 2.49% | ≤ 5% | 4.45% | ≤ 5% | 3.51% |
| 31 | ≤ 3% | 2.91% | ≤ 3% | 2.42% | ≤ 5% | 4.47% | ≤ 5% | 3.53% |

**Lampiran 7.** *Daily Analysis Moisture* / Kadar Air dalam Minyak (MOIST) CPO (*Crude Palm Oil*) *Report* bulan Mei 2016.

| **Tgl** | ***Oil Production*** | | | | ***Storage Tank*** | | | |
|---|---|---|---|---|---|---|---|---|
| | ***Line*** | | | | ***No.*** | | | |
| | **1** | | **2** | | **4** | | **5** | |
| 1 | ≤ 0.10% | - | ≤ 0.10% | - | ≤ 0.10% | - | ≤ 0.10% | - |
| 2 | ≤ 0.10% | - | ≤ 0.10% | - | ≤ 0.10% | - | ≤ 0.10% | - |
| 3 | ≤ 0.10% | 0.03% | ≤ 0.10% | 0.17% | ≤ 0.10% | 0.28% | ≤ 0.10% | 0.28% |
| 4 | ≤ 0.10% | 0.02% | ≤ 0.10% | 0.03% | ≤ 0.10% | 0.18% | ≤ 0.10% | 0.18% |
| 5 | ≤ 0.10% | 0.07% | ≤ 0.10% | 0.04% | ≤ 0.10% | 0.38% | ≤ 0.10% | 0.22% |
| 6 | ≤ 0.10% | 0.06% | ≤ 0.10% | 0.30% | ≤ 0.10% | 0.38% | ≤ 0.10% | 0.19% |
| 7 | ≤ 0.10% | 0.15% | ≤ 0.10% | 0.10% | ≤ 0.10% | 0.38% | ≤ 0.10% | 0.25% |
| 8 | ≤ 0.10% | 0.24% | ≤ 0.10% | 0.06% | ≤ 0.10% | 0.38% | ≤ 0.10% | 0.21% |
| 9 | ≤ 0.10% | 0.10% | ≤ 0.10% | 0.15% | ≤ 0.10% | 0.38% | ≤ 0.10% | 0.19% |
| 10 | ≤ 0.10% | 0.07% | ≤ 0.10% | 0.40% | ≤ 0.10% | 0.39% | ≤ 0.10% | 0.23% |
| 11 | ≤ 0.10% | 0.07% | ≤ 0.10% | 0.12% | ≤ 0.10% | 0.21% | ≤ 0.10% | 0.21% |
| 12 | ≤ 0.10% | 0.08% | ≤ 0.10% | 0.07% | ≤ 0.10% | 0.23% | ≤ 0.10% | 0.16% |
| 13 | ≤ 0.10% | 0.08% | ≤ 0.10% | 0.24% | ≤ 0.10% | 0.22% | ≤ 0.10% | 0.17% |
| 14 | ≤ 0.10% | 0.05% | ≤ 0.10% | 0.15% | ≤ 0.10% | 0.23% | ≤ 0.10% | 0.20% |
| 15 | ≤ 0.10% | 0.08% | ≤ 0.10% | 0.28% | ≤ 0.10% | 0.25% | ≤ 0.10% | 0.18% |
| 16 | ≤ 0.10% | 0.03% | ≤ 0.10% | 0.21% | ≤ 0.10% | 0.26% | ≤ 0.10% | 0.25% |
| 17 | ≤ 0.10% | 0.16% | ≤ 0.10% | 0.14% | ≤ 0.10% | 0.28% | ≤ 0.10% | 0.20% |
| 18 | ≤ 0.10% | 0.01% | ≤ 0.10% | 0.13% | ≤ 0.10% | 0.28% | ≤ 0.10% | 0.24% |
| 19 | ≤ 0.10% | 0.08% | ≤ 0.10% | 0.20% | ≤ 0.10% | 0.28% | ≤ 0.10% | 0.25% |
| 20 | ≤ 0.10% | 0.08% | ≤ 0.10% | 0.12% | ≤ 0.10% | 0.30% | ≤ 0.10% | 0.21% |
| 21 | ≤ 0.10% | 0.03% | ≤ 0.10% | 0.33% | ≤ 0.10% | 0.36% | ≤ 0.10% | 0.20% |
| 22 | ≤ 0.10% | 0.02% | ≤ 0.10% | 0.76% | ≤ 0.10% | 0.37% | ≤ 0.10% | 0.27% |
| 23 | ≤ 0.10% | 0.06% | ≤ 0.10% | 0.12% | ≤ 0.10% | 0.35% | ≤ 0.10% | 0.21% |
| 24 | ≤ 0.10% | 0.04% | ≤ 0.10% | 0.16% | ≤ 0.10% | 0.38% | ≤ 0.10% | 0.22% |
| 25 | ≤ 0.10% | 0.30% | ≤ 0.10% | 0.32% | ≤ 0.10% | 0.37% | ≤ 0.10% | 0.24% |
| 26 | ≤ 0.10% | 0.10% | ≤ 0.10% | 0.09% | ≤ 0.10% | 0.35% | ≤ 0.10% | 0.23% |
| 27 | ≤ 0.10% | 0.06% | ≤ 0.10% | 0.23% | ≤ 0.10% | 0.36% | ≤ 0.10% | 0.24% |
| 28 | ≤ 0.10% | 0.15% | ≤ 0.10% | 0.13% | ≤ 0.10% | - | ≤ 0.10% | - |
| 29 | ≤ 0.10% | - | ≤ 0.10% | - | ≤ 0.10% | - | ≤ 0.10% | - |
| 30 | ≤ 0.10% | 0.03% | ≤ 0.10% | 0.11% | ≤ 0.10% | 0.23% | ≤ 0.10% | 0.96% |
| 31 | ≤ 0.10% | 0.02% | ≤ 0.10% | 0.13% | ≤ 0.10% | 0.21% | ≤ 0.10% | 0.98% |

**Lampiran 8.** *Daily AnalysisDirty* / Kadar Kotoran dalam Minyak (DIRT) CPO (*Crude Palm Oil*) *Report* bulan Mei 2016.

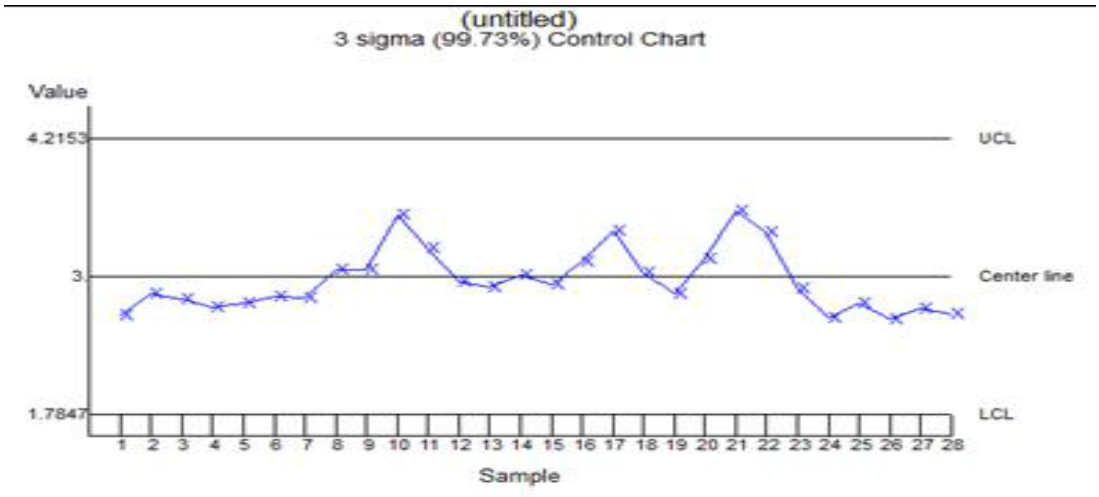
| Tgl | ***Oil Production*** | | | | ***Storage Tank*** | | | |
|---|---|---|---|---|---|---|---|---|
| | ***Line*** | | | | ***No.*** | | | |
| | **1** | | **2** | | **4** | | **5** | |
| 1 | ≤ 0.01% | - | ≤ 0.01% | - | ≤ 0.10% | - | ≤ 0.01% | - |
| 2 | ≤ 0.01% | - | ≤ 0.01% | - | ≤ 0.10% | - | ≤ 0.01% | - |
| 3 | ≤ 0.01% | 0.012% | ≤ 0.01% | 0.011% | ≤ 0.10% | 0.018% | ≤ 0.01% | 0.016% |
| 4 | ≤ 0.01% | 0.008% | ≤ 0.01% | 0.009% | ≤ 0.10% | 0.018% | ≤ 0.01% | 0.014% |
| 5 | ≤ 0.01% | 0.008% | ≤ 0.01% | 0.009% | ≤ 0.10% | 0.020% | ≤ 0.01% | 0.014% |
| 6 | ≤ 0.01% | 0.005% | ≤ 0.01% | 0.010% | ≤ 0.10% | 0.016% | ≤ 0.01% | 0.012% |
| 7 | ≤ 0.01% | 0.013% | ≤ 0.01% | 0.099% | ≤ 0.10% | 0.018% | ≤ 0.01% | 0.014% |
| 8 | ≤ 0.01% | 0.060% | ≤ 0.01% | 0.008% | ≤ 0.10% | 0.016% | ≤ 0.01% | 0.014% |
| 9 | ≤ 0.01% | 0.008% | ≤ 0.01% | 0.011% | ≤ 0.10% | 0.014% | ≤ 0.01% | 0.014% |
| 10 | ≤ 0.01% | 0.011% | ≤ 0.01% | 0.016% | ≤ 0.10% | 0.016% | ≤ 0.01% | 0.014% |
| 11 | ≤ 0.01% | 0.008% | ≤ 0.01% | 0.010% | ≤ 0.10% | 0.016% | ≤ 0.01% | 0.014% |
| 12 | ≤ 0.01% | 0.009% | ≤ 0.01% | 0.010% | ≤ 0.10% | 0.018% | ≤ 0.01% | 0.016% |
| 13 | ≤ 0.01% | 0.009% | ≤ 0.01% | 0.014% | ≤ 0.10% | 0.016% | ≤ 0.01% | 0.018% |
| 14 | ≤ 0.01% | 0.008% | ≤ 0.01% | 0.012% | ≤ 0.10% | 0.016% | ≤ 0.01% | 0.014% |
| 15 | ≤ 0.01% | 0.007% | ≤ 0.01% | 0.035% | ≤ 0.10% | 0.014% | ≤ 0.01% | 0.012% |
| 16 | ≤ 0.01% | 0.008% | ≤ 0.01% | 0.011% | ≤ 0.10% | 0.014% | ≤ 0.01% | 0.012% |
| 17 | ≤ 0.01% | 0.025% | ≤ 0.01% | 0.010% | ≤ 0.10% | 0.018% | ≤ 0.01% | 0.016% |
| 18 | ≤ 0.01% | 0.008% | ≤ 0.01% | 0.011% | ≤ 0.10% | 0.018% | ≤ 0.01% | 0.016% |
| 19 | ≤ 0.01% | 0.008% | ≤ 0.01% | 0.009% | ≤ 0.10% | 0.018% | ≤ 0.01% | 0.016% |
| 20 | ≤ 0.01% | 0.011% | ≤ 0.01% | 0.012% | ≤ 0.10% | 0.018% | ≤ 0.01% | 0.014% |
| 21 | ≤ 0.01% | 0.008% | ≤ 0.01% | 0.024% | ≤ 0.10% | 0.021% | ≤ 0.01% | 0.014% |
| 22 | ≤ 0.01% | 0.012% | ≤ 0.01% | 0.023% | ≤ 0.10% | 0.020% | ≤ 0.01% | 0.016% |
| 23 | ≤ 0.01% | 0.008% | ≤ 0.01% | 0.009% | ≤ 0.10% | 0.022% | ≤ 0.01% | 0.012% |
| 24 | ≤ 0.01% | 0.008% | ≤ 0.01% | 0.012% | ≤ 0.10% | 0.024% | ≤ 0.01% | 0.012% |
| 25 | ≤ 0.01% | 0.010% | ≤ 0.01% | 0.014% | ≤ 0.10% | 0.026% | ≤ 0.01% | 0.016% |
| 26 | ≤ 0.01% | 0.011% | ≤ 0.01% | 0.009% | ≤ 0.10% | 0.024% | ≤ 0.01% | 0.012% |
| 27 | ≤ 0.01% | 0.009% | ≤ 0.01% | 0.010% | ≤ 0.10% | 0.026% | ≤ 0.01% | 0.012% |
| 28 | ≤ 0.01% | 0.011% | ≤ 0.01% | 0.011% | ≤ 0.10% | - | ≤ 0.01% | - |
| 29 | ≤ 0.01% | - | ≤ 0.01% | - | ≤ 0.10% | - | ≤ 0.01% | - |
| 30 | ≤ 0.01% | 0.009% | ≤ 0.01% | 0.010% | ≤ 0.10% | 0.026% | ≤ 0.01% | 0.132% |
| 31 | ≤ 0.01% | 0.009% | ≤ 0.01% | 0.010% | ≤ 0.10% | 0.018% | ≤ 0.01% | 0.022% |

**Lampiran 9.** Data Pengolahan *Quality Contro l* Pengolahan *Free Fatty Acid* / Asam Lemak Bebas (FFA) CPO (*Crude Palm Oil*) pada *Oil Production Line* I dan II PT. Kalimantan Sanggar Pusaka Menggunakan Peta Kendali *X* (*X Chart*).

(*Quality Control Results*)

| Sample | Mean | Range | 3 sigma (99.73%) | X-bar Chart | Range Chart |
|---|---|---|---|---|---|
| Sample 1 | 2.655 | .15 | UCL (Upper control limit) | 4.2153 | 2.1119 |
| Sample 2 | 2.85 | .34 | CL (Center line) | 3 | .6464 |
| Sample 3 | 2.805 | .29 | LCL (Lower Control Limit) | 1.7847 | 0 |
| Sample 4 | 2.735 | .35 | | | |
| Sample 5 | 2.76 | .3 | | | |
| Sample 6 | 2.83 | .12 | | | |
| Sample 7 | 2.815 | .09 | | | |
| Sample 8 | 3.055 | 1.13 | | | |
| Sample 9 | 3.065 | 1.07 | | | |
| Sample 10 | 3.545 | 1.59 | | | |
| Sample 11 | 3.255 | 1.15 | | | |
| Sample 12 | 2.96 | .18 | | | |
| Sample 13 | 2.91 | .96 | | | |
| Sample 14 | 3.015 | 1.23 | | | |
| Sample 15 | 2.935 | 1.03 | | | |
| Sample 16 | 3.13 | 1.28 | | | |
| Sample 17 | 3.405 | .91 | | | |
| Sample 18 | 3.035 | .25 | | | |
| Sample 19 | 2.85 | .12 | | | |
| Sample 20 | 3.16 | .88 | | | |
| Sample 21 | 3.585 | 1.51 | | | |
| Sample 22 | 3.39 | .88 | | | |
| Sample 23 | 2.89 | .54 | | | |
| Sample 24 | 2.64 | .3 | | | |
| Sample 25 | 2.765 | .09 | | | |
| Sample 26 | 2.625 | .41 | | | |
| Sample 27 | 2.72 | .46 | | | |
| Sample 28 | 2.665 | .49 | | | |
| Averages | 2.9661 | .6464 | | | |

(*X Chart*)

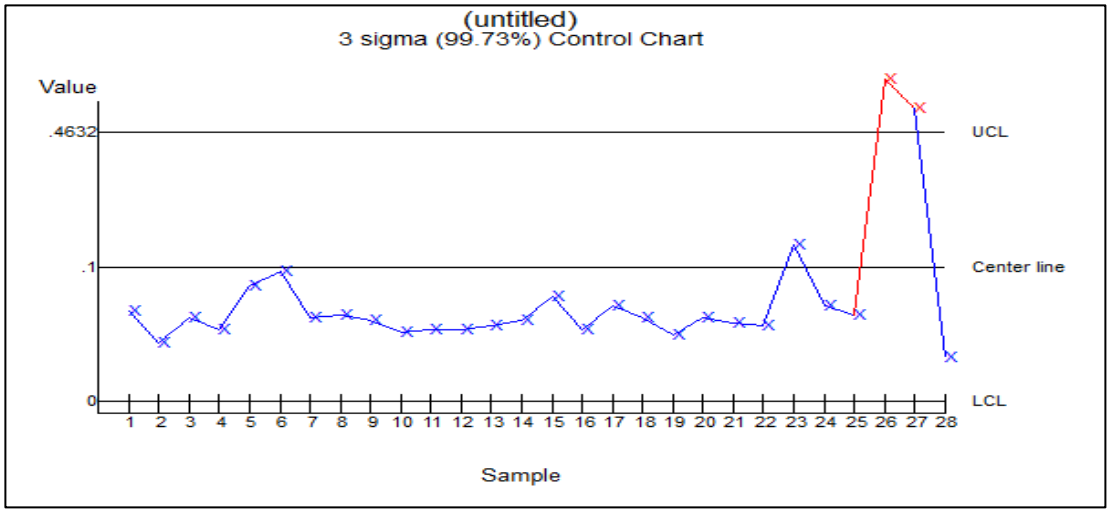


**Lampiran 10.** Data Pengolahan *Quality Control* Pengolahan *Moisture* / Kadar air dalam minyak (MOIST) CPO (*Crude Palm Oil*) pada *Oil Production Line* I dan II PT. Kalimantan Sanggar Pusaka Menggunakan Peta Kendali *X* (*X Chart*).

(*Quality Control Results*)

| Sample | Mean | Range | 3 sigma (99.73%) | X-bar Chart | Range Chart |
|---|---|---|---|---|---|
| Sample 1 | .155 | .25 | UCL (Upper control limit) | .4632 | .6312 |
| Sample 2 | .1 | .16 | CL (Center line) | .1 | .1932 |
| Sample 3 | .145 | .15 | LCL (Lower Control Limit) | 0 | 0 |
| Sample 4 | .125 | .13 | | | |
| Sample 5 | .2 | .1 | | | |
| Sample 6 | .225 | .03 | | | |
| Sample 7 | .145 | .09 | | | |
| Sample 8 | .15 | .16 | | | |
| Sample 9 | .14 | .14 | | | |
| Sample 10 | .12 | .08 | | | |
| Sample 11 | .125 | .09 | | | |
| Sample 12 | .125 | .15 | | | |
| Sample 13 | .13 | .1 | | | |
| Sample 14 | .14 | .22 | | | |
| Sample 15 | .18 | .04 | | | |
| Sample 16 | .125 | .23 | | | |
| Sample 17 | .165 | .17 | | | |
| Sample 18 | .145 | .13 | | | |
| Sample 19 | .115 | .17 | | | |
| Sample 20 | .145 | .25 | | | |
| Sample 21 | .135 | .15 | | | |
| Sample 22 | .13 | .18 | | | |
| Sample 23 | .27 | .06 | | | |
| Sample 24 | .165 | .13 | | | |
| Sample 25 | .15 | .18 | | | |
| Sample 26 | .555 | .81 | | | |
| Sample 27 | .505 | .95 | | | |
| Sample 28 | .075 | .11 | | | |
| Averages | .1745 | .1932 | | | |

(*X Chart*)

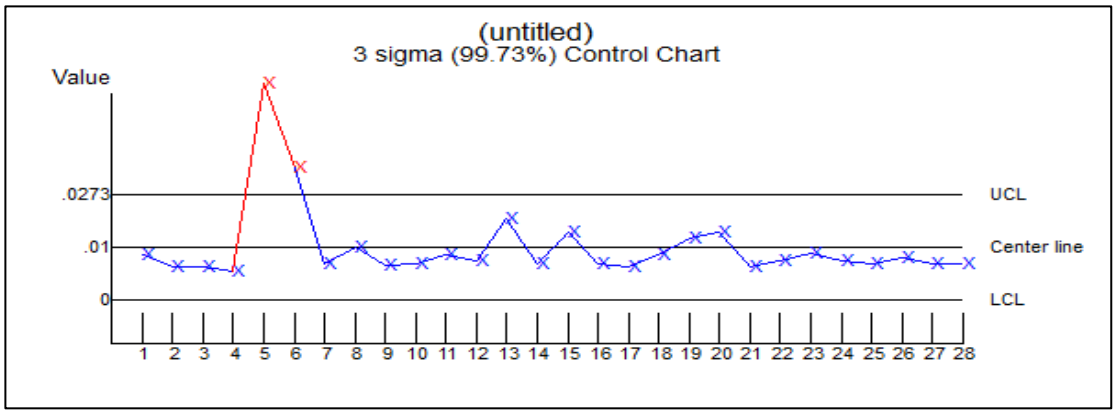


**Lampiran 11.** Data Pengolahan *Quality Control* Pengolahan *Dirty* / Kadar Kotoran dalam Minyak (DIRT) CPO (*Crude Palm Oil*) pada *Oil Production Line* I dan II PT. Kalimantan Sanggar Pusaka Menggunakan Peta Kendali *X* (*X Chart*).

(*Quality Control Results*)

| Sample | Mean | Range | 3 sigma (99.73%) | X-bar Chart | Range Chart |
|---|---|---|---|---|---|
| Sample 1 | .0115 | .001 | UCL (Upper control limit) | .0273 | .0301 |
| Sample 2 | .0085 | .001 | CL (Center line) | .01 | .0092 |
| Sample 3 | .0085 | .001 | LCL (Lower Control Limit) | 0 | 0 |
| Sample 4 | .0075 | .005 | | | |
| Sample 5 | .056 | .086 | | | |
| Sample 6 | .034 | .052 | | | |
| Sample 7 | .0095 | .003 | | | |
| Sample 8 | .0135 | .005 | | | |
| Sample 9 | .009 | .002 | | | |
| Sample 10 | .0095 | .001 | | | |
| Sample 11 | .0115 | .005 | | | |
| Sample 12 | .01 | .004 | | | |
| Sample 13 | .021 | .028 | | | |
| Sample 14 | .0095 | .003 | | | |
| Sample 15 | .0175 | .015 | | | |
| Sample 16 | .0095 | .003 | | | |
| Sample 17 | .0085 | .001 | | | |
| Sample 18 | .0115 | .001 | | | |
| Sample 19 | .016 | .016 | | | |
| Sample 20 | .0175 | .011 | | | |
| Sample 21 | .0085 | .001 | | | |
| Sample 22 | .01 | .004 | | | |
| Sample 23 | .012 | .004 | | | |
| Sample 24 | .01 | .002 | | | |
| Sample 25 | .0095 | .001 | | | |
| Sample 26 | .011 | 0 | | | |
| Sample 27 | .0095 | .001 | | | |
| Sample 28 | .0095 | .001 | | | |
| Averages | .0136 | .0092 | | | |

(*X Chart*)

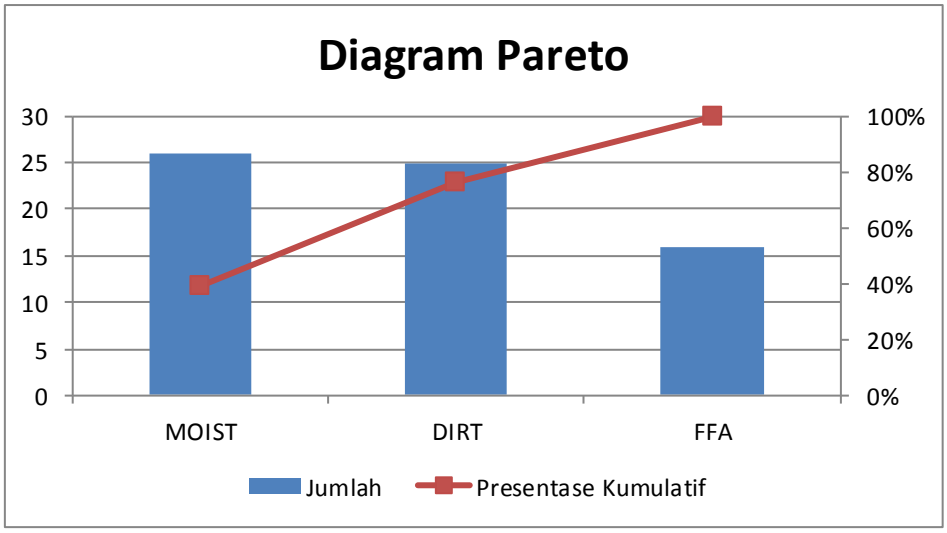


**Lampiran 12.** Data Pengolahan Quality Control Proses Produksi CPO (*Crude Palm Oil*) pada *Oil Production Line* I dan I dengan Menggunakan Diagram Pareto Bulan Mei 2016.

(PresentaseKumulatif)

| No | Jenis Kerusakan | Jumlah | Presentase | Presentase Kumulatif |
|---|---|---|---|---|
| 1 | MOIST | 26 | 39% | 39% |
| 2 | DIRT | 25 | 37% | 76% |
| 3 | FFA | 16 | 24% | 100% |
| TOTAL | | 67 | 100% | |

(Diagram Pareto)



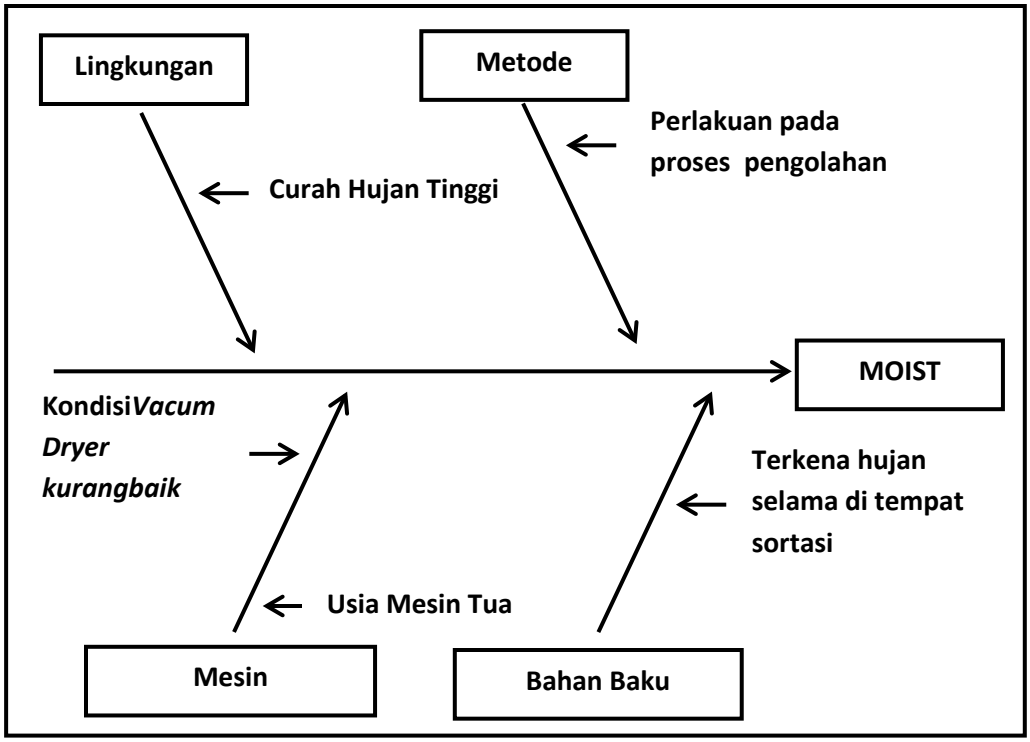
**Lampiran 13.** Wawancara Terhadap Pihak PT. Kalimantan Sanggar Pusaka

| No | Responden | | Keterangan |
|---|---|---|---|
| | Nama | Jabatan | |
| 1 | Palaniappan | Mill Manager | R 1 |
| 2 | Na'imMurahman | Asst. Laboraturium | R 2 |

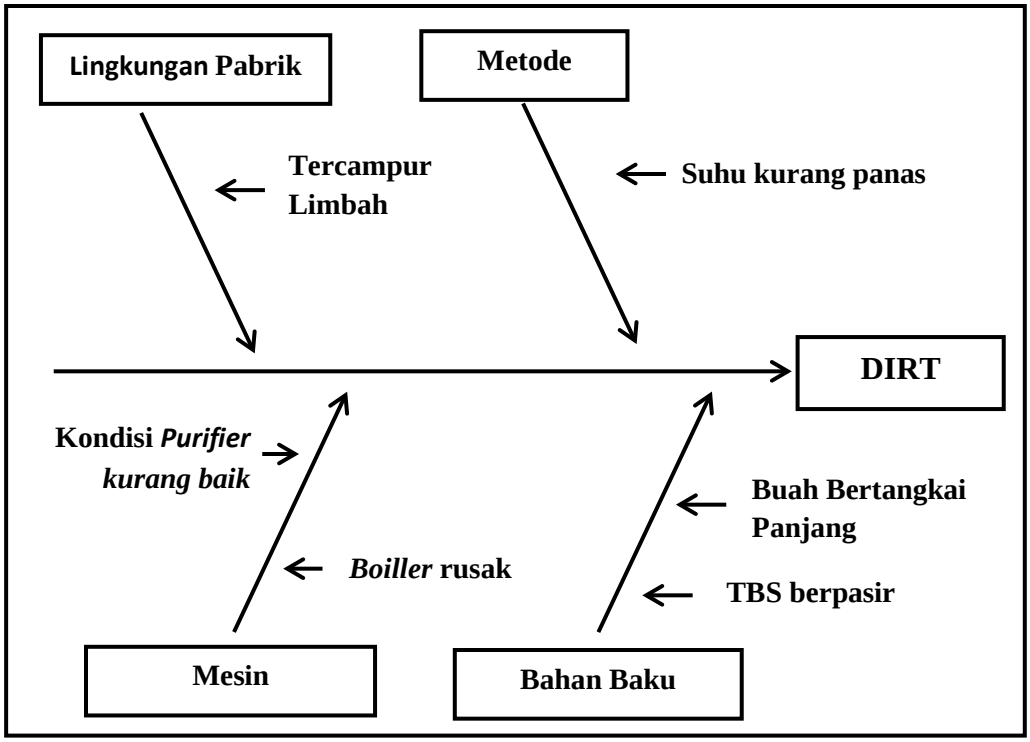
Wawancara Kepada Pimpinan dan Karyawan di PT. Kalimantan Sanggar Pusaka pada Tanggal 10 Juni 2016 Mengenai Kerusakan Proses Produksi CPO (*Crude Palm Oil*) pada *Oil Production Line* I dan I Bulan Mei 2016.

| No | Responden | Jenis Kerusakan | Faktor Penyebab |
|---|---|---|---|
| 1 | R1 | *Free Fatty Acid* / Asam Lemak Bebas (FFA) | • Terdapat buah mentah<br>• Terdapat buah lewat matang<br>• Penundaan proses produksi |
| | | *Moisture* / Kadar Air dalam Minyak (MOIST) | • Buah basah terkena hujan<br>• Kondisi mesin *Vacum Dryer* rusak<br>• Usia mesin sudah tua |
| | | *Dirty* / Kadar KotorandalamMinyak (DIRT) | • Terdapat tangkai panjang<br>• Brondolan berpasir<br>• Kondisi mesin sudah tua<br>• Kondisi mesin *Purifier rusak* |
| 2 | R2 | *Free Fatty Acid* / AsamLemakBebas (FFA) | • Terdapat buah mentah<br>• Penundaan proses produksi<br>• Terdapat buah lewat matang |
| | | *Moisture* / Kadar Air dalamMinyak (MOIST) | • Curah hujan tinggi<br>• Terlalu lama di proses perebusan<br>• *Boiler* tidak menghasilkan suhu panas yang diinginkan<br>• Kondisi mesin *Vacum Dryer* rusak |
| | | *Dirty* / Kadar KotorandalamMinyak (DIRT) | • Terdapat tangkai panjang<br>• Brondolan berpasir<br>• Kondisi mesin sudah tua<br>• Kondisi mesin *Purifier rusak*<br>• Bercampur dengan limbah |

**Lampiran 14.** Diagram Sebab Akibat MOIST Oil Production I dan II



**Lampiran 15.** Diagram Sebab Akibat DIRT Oil Production I dan II

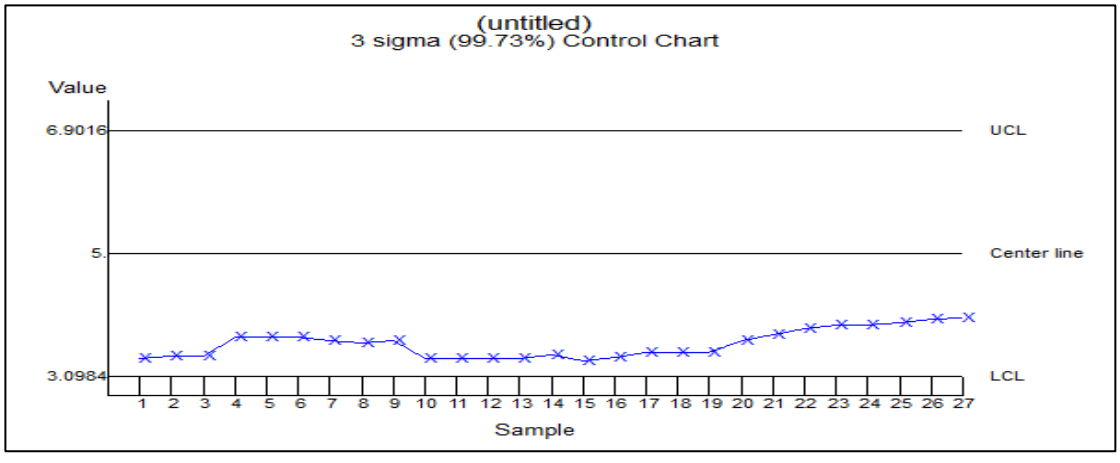


**Lampiran 16.** Data Pengolahan *Quality Control* Pengolahan*Free Fatty Acid* / AsamLemak Bebas (FFA) CPO (*Crude Palm Oil*) pada *Storage Tank* IV dan V PT. Kalimantan Sanggar Pusaka Menggunakan PetaKendali *X* (*X Chart*).

(*Quality Control Results*)

| Sample | Mean | Range | 3 sigma (99.73%) | X-bar Chart | Range Chart |
|---|---|---|---|---|---|
| Sample 1 | 3.365 | .83 | UCL (Upper control limit) | 6.9016 | 3.3045 |
| Sample 2 | 3.415 | .73 | CL (Center line) | 5 | 1.0115 |
| Sample 3 | 3.415 | .73 | LCL (Lower Control Limit) | 3.0984 | 0 |
| Sample 4 | 3.7 | 1.5 | | | |
| Sample 5 | 3.7 | 1.5 | | | |
| Sample 6 | 3.7 | 1.5 | | | |
| Sample 7 | 3.655 | 1.59 | | | |
| Sample 8 | 3.61 | 1.68 | | | |
| Sample 9 | 3.655 | 1.59 | | | |
| Sample 10 | 3.375 | .85 | | | |
| Sample 11 | 3.375 | .85 | | | |
| Sample 12 | 3.375 | .85 | | | |
| Sample 13 | 3.375 | .85 | | | |
| Sample 14 | 3.42 | .76 | | | |
| Sample 15 | 3.34 | .96 | | | |
| Sample 16 | 3.395 | .89 | | | |
| Sample 17 | 3.455 | .81 | | | |
| Sample 18 | 3.47 | .78 | | | |
| Sample 19 | 3.455 | .81 | | | |
| Sample 20 | 3.64 | .82 | | | |
| Sample 21 | 3.735 | .83 | | | |
| Sample 22 | 3.83 | .82 | | | |
| Sample 23 | 3.885 | .93 | | | |
| Sample 24 | 3.885 | .93 | | | |
| Sample 25 | 3.93 | 1.04 | | | |
| Sample 26 | 3.98 | .94 | | | |
| Sample 27 | 4 | .94 | | | |
| Averages | 3.5976 | 1.0115 | | | |

(*X Chart*)

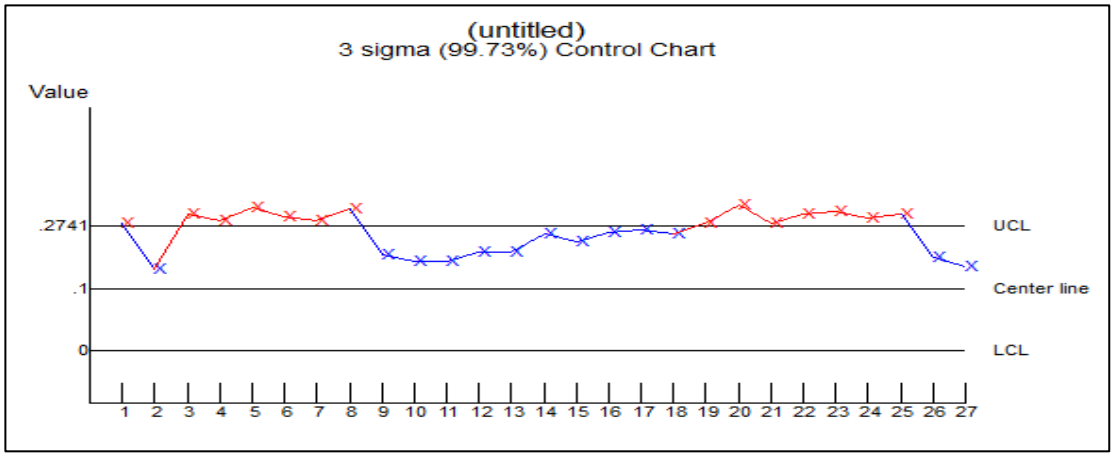


**Lampiran 17.** Data Pengolahan *Quality Control* Pengolahan *Moisture* / Kadar Air dalam Minyak (MOIST) CPO (*Crude Palm Oil*) pada *Storage Tank* IV dan V PT. Kalimantan Sanggar Pusaka Menggunakan Peta Kendali *X* (*X Chart*).

(*Quality Control Results*)

| Sample | Mean | Range | 3 sigma (99.73%) | X-bar Chart | Range Chart |
|---|---|---|---|---|---|
| Sample 1 | .28 | 0 | UCL (Upper control limit) | .2741 | .3025 |
| Sample 2 | .18 | 0 | CL (Center line) | .1 | .0926 |
| Sample 3 | .3 | .16 | LCL (Lower Control Limit) | 0 | 0 |
| Sample 4 | .285 | .19 | | | |
| Sample 5 | .315 | .13 | | | |
| Sample 6 | .295 | .17 | | | |
| Sample 7 | .285 | .19 | | | |
| Sample 8 | .31 | .16 | | | |
| Sample 9 | .21 | 0 | | | |
| Sample 10 | .195 | .07 | | | |
| Sample 11 | .195 | .05 | | | |
| Sample 12 | .215 | .03 | | | |
| Sample 13 | .215 | .07 | | | |
| Sample 14 | .255 | .01 | | | |
| Sample 15 | .24 | .08 | | | |
| Sample 16 | .26 | .04 | | | |
| Sample 17 | .265 | .03 | | | |
| Sample 18 | .255 | .09 | | | |
| Sample 19 | .28 | .16 | | | |
| Sample 20 | .32 | .1 | | | |
| Sample 21 | .28 | .14 | | | |
| Sample 22 | .3 | .16 | | | |
| Sample 23 | .305 | .13 | | | |
| Sample 24 | .29 | .12 | | | |
| Sample 25 | .3 | .12 | | | |
| Sample 26 | .205 | .05 | | | |
| Sample 27 | .185 | .05 | | | |
| Averages | .26 | .0926 | | | |

(*X Chart*)

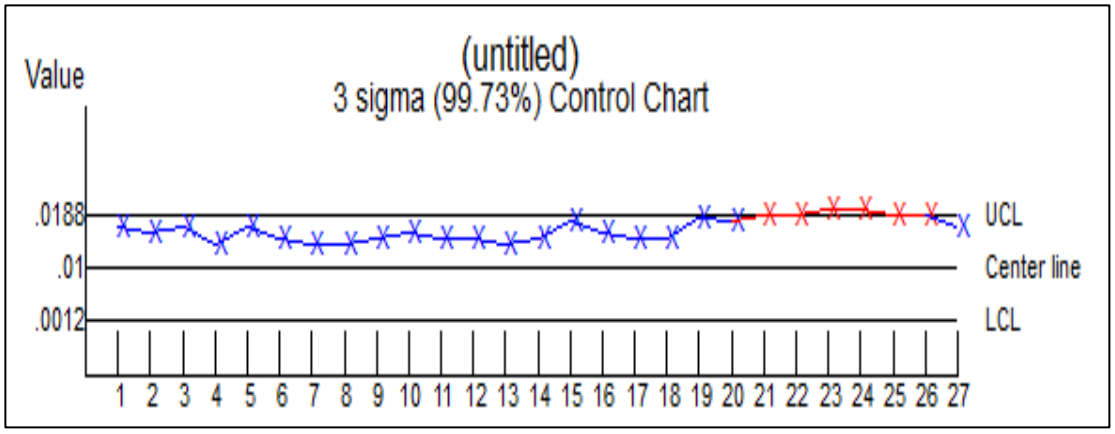


**Lampiran 18.** Data Pengolahan *Quality Control* Pengolahan *Dirty* / Kadar Kotoran dalam Minyak (DIRT) CPO (*Crude Palm Oil*) pada *Storage Tank* IV dan V PT. Kalimantan Sanggar Pusaka Menggunakan PetaKendali *X* (*X Chart*).

(*Quality Control Results*)

| Sample | Mean | Range | 3 sigma (99.73%) | X-bar Chart | Range Chart |
|---|---|---|---|---|---|
| Sample 1 | .017 | .002 | UCL (Upper control limit) | .0188 | .0154 |
| Sample 2 | .016 | .004 | CL (Center line) | .01 | .0047 |
| Sample 3 | .017 | .006 | LCL (Lower Control Limit) | .0012 | 0 |
| Sample 4 | .014 | .004 | | | |
| Sample 5 | .017 | .002 | | | |
| Sample 6 | .015 | .002 | | | |
| Sample 7 | .014 | 0 | | | |
| Sample 8 | .014 | .004 | | | |
| Sample 9 | .015 | .002 | | | |
| Sample 10 | .016 | .004 | | | |
| Sample 11 | .015 | .002 | | | |
| Sample 12 | .015 | .002 | | | |
| Sample 13 | .014 | 0 | | | |
| Sample 14 | .015 | .002 | | | |
| Sample 15 | .018 | 0 | | | |
| Sample 16 | .016 | .004 | | | |
| Sample 17 | .015 | .006 | | | |
| Sample 18 | .015 | .006 | | | |
| Sample 19 | .0185 | .005 | | | |
| Sample 20 | .018 | .004 | | | |
| Sample 21 | .019 | .006 | | | |
| Sample 22 | .019 | .01 | | | |
| Sample 23 | .02 | .012 | | | |
| Sample 24 | .02 | .008 | | | |
| Sample 25 | .019 | .014 | | | |
| Sample 26 | .019 | .014 | | | |
| Sample 27 | .017 | .002 | | | |
| Averages | .0166 | .0047 | | | |

(*X Chart*)

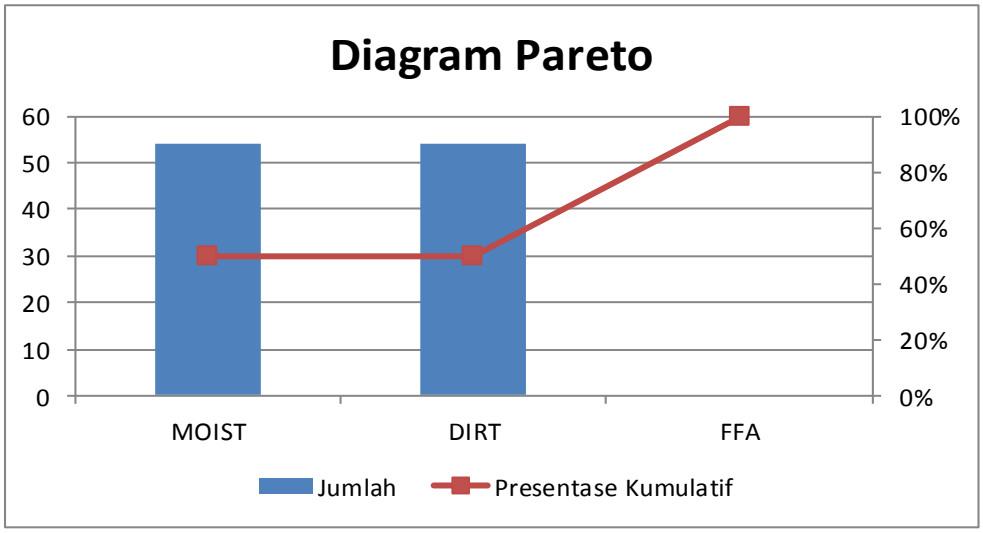


**Lampiran 19.** Data Pengolahan Quality Control Produk Akhir CPO (*Crude Palm Oil*) pada *Storage Tank* IvdanV dengan Menggunakan Diagram Pareto Bulan Mei 2016.

(PresentaseKumulatif)

| No | Jenis Kerusakan | Jumlah | Presentase | Presentase Kumulatif |
|---|---|---|---|---|
| 1 | MOIST | 54 | 50% | 50% |
| 2 | DIRT | 54 | 50% | 50% |
| 3 | FFA | 0 | 0% | 100% |
| TOTAL | | 108 | 100% | |

(Diagram Pareto)



**Lampiran 20.** Wawancara Terhadap Pihak PT. Kalimantan Sanggar Pusaka

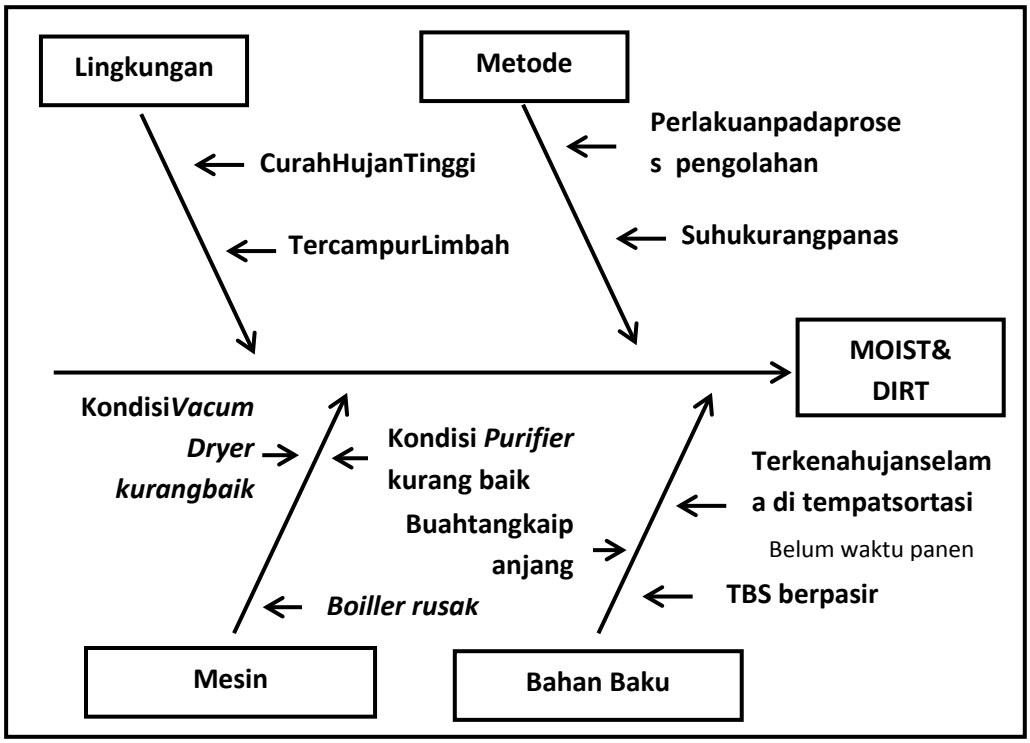
| No | Responden | | Keterangan |
|---|---|---|---|
| | Nama | Jabatan | |
| 1 | Palaniappan | Mill Manager | R 1 |
| 2 | Atung | Asst. Mill Manager | R 2 |
| 3 | Na'imMurahman | Asst. Laboraturium | R 3 |
| 4 | HermandusHerie | Asst. Proses | R 4 |

Wawancara Kepada Pimpinan dan Karyawan di PT. Kalimantan Sanggar Pusaka pada Tanggal 10 Juni 2016 Mengenai Kerusakan CPO (*Crude Palm Oil*) pada *Storage Tank* IV dan V Bulan Mei 2016.

| No | Responden | Jenis Kerusakan | FaktorPenyebab |
|---|---|---|---|
| 1 | R1 | *Free Fatty Acid* / AsamLemak Bebas (FFA) | • Terdapat buah mentah<br>• Terdapat buah lewat matang |
| | | *Moisture* / Kadar Air dalam Minyak (MOIST) | • Buah basah terkena hujan<br>• Kondisi mesin *Vacum Dryer* rusak<br>• Usia mesin sudah tua |
| | | *Dirty* / Kadar Kotoran dalam Minyak (DIRT) | • Terdapat tangkai panjang<br>• Brondolan berpasir<br>• Kondisi mesin sudah tua<br>• Tercampur limbah<br>• Kondisi mesin*Purifier rusak* |
| 2 | R2 | *Free Fatty Acid* / Asam Lemak Bebas (FFA) | • Terdapat buah mentah<br>• Penundaan proses<br>• Terdapat buah lewat matang |
| | | *Moisture* / Kadar Air dalam Minyak (MOIST) | • Terlalu lama di proses perebusan<br>• Buah basah terkena hujan<br>• *Boiler* tidak menghasilkan suhu panas yang diinginkan<br>• Kondisi mesin *Vacum Dryer* rusak |
| | | *Dirty* / Kadar Kotoran dalam Minyak (DIRT) | • Terdapat tangkai panjang<br>• Brondolan berpasir<br>• Kondisi mesin sudah tua<br>• Kondisi mesin *Purifier rusak* |

| No | Responden | Jenis Kerusakan | Faktor Penyebab |
|---|---|---|---|
| 3 | R3 | *Free Fatty Acid* / Asam Lemak Bebas (FFA) | • Terdapat buah mentah<br>• Terdapat buah lewat matang<br>• Penundaan proses produksi |
| | | *Moisture* / Kadar Air dalam Minyak (MOIST) | • Buah basah terkena hujan<br>• Curah hujan tinggi<br>• Kondisi mesin*Vacum Drye r*rusak<br>• Usia mesin sudah tua<br>• Suhu yang dihasilkan boiler kuran gpanas |
| | | *Dirty* / Kadar Kotoran dalam Minyak (DIRT) | • Terdapat tangkai panjang<br>• Brondolan berpasir<br>• Kondisi mesin sudah tua<br>• Kondisi mesin *Purifier rusak*<br>• Suhu yang dihasikan boiler kurang panas |
| 4 | R4 | *Free Fatty Acid* / Asam Lemak Bebas (FFA) | • Penundaan proses produksi<br>• Terdapat buah mentah<br>• Terdapat buah lewat matang |
| | | *Moisture* / Kadar Air dalam Minyak (MOIST) | • Terlalu lama di proses perebusan<br>• Curah hujan tinggi<br>• Buah basah terkena hujan<br>• *Boiler* tidak menghasilkan suhu uap panas yangdiinginkan<br>• Kondisi mesin *Vacum Dryer* rusak |
| | | *Dirty* / Kadar Kotoran dalam Minyak (DIRT) | • Terdapat tangkai panjang<br>• Brondolan berpasir<br>• Kondisi mesin sudah tua<br>• Kondisi mesin *Purifier rusak*<br>• Tercampur limbah |

**Lampiran 21.** Diagram Sebab Akibat MOIST *Storage Tank* IV dan V



**Lampiran 22.** Diagram Sebab Akibat DIRT *Storage Tank* IV dan V