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## LAMPIRAN

### Lampiran 1. Perhitungan Kadar Air Basis Basah

$$M = \frac{W_m}{W_t} 100\%$$

#### Tanpa penutup

#### Satu Lapis (Pengulangan 1)

Hari Pertama:

$$\begin{aligned} M &= \frac{540.8 - 228.4}{540.8} 100\% \\ &= 57.766272\% \text{ bb} \end{aligned}$$

$$\begin{aligned} M &= \frac{519.8 - 228.4}{519.8} 100\% \\ &= 56.060023\% \text{ bb} \end{aligned}$$

$$\begin{aligned} M &= \frac{486.6 - 228.4}{486.6} 100\% \\ &= 53.062063\% \text{ bb} \end{aligned}$$

$$\begin{aligned} M &= \frac{450.4 - 228.4}{450.4} 100\% \\ &= 49.28952\% \text{ bb} \end{aligned}$$

$$\begin{aligned} M &= \frac{411.8 - 228.4}{411.8} 100\% \\ &= 44.536183\% \text{ bb} \end{aligned}$$

$$\begin{aligned} M &= \frac{379.4 - 228.4}{379.4} 100\% \\ &= 39.799684\% \text{ bb} \end{aligned}$$

$$\begin{aligned} M &= \frac{360 - 228.4}{360} 100\% \\ &= 36.555556\% \text{ bb} \end{aligned}$$

$$\begin{aligned} M &= \frac{347.6 - 228.4}{347.6} 100\% \\ &= 34.29229\% \text{ bb} \end{aligned}$$

$$\begin{aligned} M &= \frac{343.9 - 228.4}{343.9} 100\% \\ &= 33.585345\% \text{ bb} \end{aligned}$$

$$\begin{aligned} M &= \frac{340.1 - 228.4}{340.1} 100\% \\ &= 32.843281\% \text{ bb} \end{aligned}$$

Hari Ke-dua

$$\begin{aligned} M &= \frac{316.6 - 228.4}{316.6} 100\% \\ &= 27.8585497\% \text{ bb} \end{aligned}$$

$$\begin{aligned}
M &= \frac{311.8 - 228.4}{311.8} 100\% \\
&= 26.747915\% \text{ bb} \\
M &= \frac{305.8 - 228.4}{305.8} 100\% \\
&= 25.310661\% \text{ bb} \\
M &= \frac{300.5 - 228.4}{300.5} 100\% \\
&= 23.993344\% \text{ bb} \\
M &= \frac{296.7 - 228.4}{296.7} 100\% \\
&= 23.019885\% \text{ bb} \\
M &= \frac{293.2 - 228.4}{293.2} 100\% \\
&= 22.100955\% \text{ bb} \\
M &= \frac{290.6 - 228.4}{290.6} 100\% \\
&= 21.403992\% \text{ bb} \\
M &= \frac{286.4 - 228.4}{286.4} 100\% \\
&= 20.251397\% \text{ bb} \\
M &= \frac{284.8 - 228.4}{284.8} 100\% \\
&= 19.803371\% \text{ bb} \\
M &= \frac{283.8 - 228.4}{283.8} 100\% \\
&= 19.520789\% \text{ bb}
\end{aligned}$$

Hari ke-tiga

$$\begin{aligned}
M &= \frac{274.4 - 228.4}{274.4} 100\% \\
&= 16.76385\% \text{ bb} \\
M &= \frac{269.7 - 228.4}{269.7} 100\% \\
&= 15.31331\% \text{ bb} \\
M &= \frac{269.5 - 228.4}{269.5} 100\% \\
&= 15.25046\% \text{ bb} \\
M &= \frac{267 - 228.4}{267} 100\% \\
&= 14.45693\% \text{ bb} \\
M &= \frac{264.8 - 228.4}{264.8} 100\% \\
&= 13.74622\% \text{ bb} \\
M &= \frac{262 - 228.4}{262} 100\% \\
&= 12.82443\% \text{ bb} \\
M &= \frac{259.7 - 228.4}{259.7} 100\% \\
&= 12.05237\% \text{ bb} \\
M &= \frac{258.1 - 228.4}{258.1} 100\% \\
&= 11.50717\% \text{ bb}
\end{aligned}$$

$$\begin{aligned}
 M &= \frac{257.2 - 228.4}{257.2} 100\% \\
 &= 11.19751\% \text{ bb} \\
 M &= \frac{256.9 - 228.4}{256.9} 100\% \\
 &= 11.09381\% \text{ bb}
 \end{aligned}$$

Hari ke-empat

$$\begin{aligned}
 M &= \frac{256.9 - 228.4}{256.9} 100\% \\
 &= 11.09381\% \text{ bb} \\
 M &= \frac{252.8 - 228.4}{252.8} 100\% \\
 &= 9.651899\% \text{ bb} \\
 M &= \frac{251.2 - 228.4}{251.2} 100\% \\
 &= 9.076433\% \text{ bb} \\
 M &= \frac{249.5 - 228.4}{249.5} 100\% \\
 &= 8.456914\% \text{ bb} \\
 M &= \frac{248.3 - 228.4}{248.3} 100\% \\
 &= 8.014499\% \text{ bb} \\
 M &= \frac{247.3 - 228.4}{247.3} 100\% \\
 &= 7.642539\% \text{ bb} \\
 M &= \frac{246.1 - 228.4}{246.1} 100\% \\
 &= 12.05237\% \text{ bb} \\
 M &= \frac{245.9 - 228.4}{245.9} 100\% \\
 &= 11.50717\% \text{ bb} \\
 M &= \frac{245.8 - 228.4}{245.8} 100\% \\
 &= 11.19751\% \text{ bb} \\
 M &= \frac{245.6 - 228.4}{245.6} 100\% \\
 &= 11.09381\% \text{ bb}
 \end{aligned}$$

Hari ke-lima

$$\begin{aligned}
 M &= \frac{245.6 - 228.4}{245.6} 100\% \\
 &= 7.003257\% \text{ bb} \\
 M &= \frac{244.5 - 228.4}{244.5} 100\% \\
 &= 6.584867\% \text{ bb} \\
 M &= \frac{242.9 - 228.4}{242.9} 100\% \\
 &= 5.969535\% \text{ bb} \\
 M &= \frac{242.1 - 228.4}{242.1} 100\% \\
 &= 5.658819\% \text{ bb}
 \end{aligned}$$

$$\begin{aligned}
 M &= \frac{241.3 - 228.4}{241.3} 100\% \\
 &= 5.346042\% \text{ bb} \\
 M &= \frac{240.6 - 228.4}{240.6} 100\% \\
 &= 5.070657\% \text{ bb}
 \end{aligned}$$

### Satu Lapis (Pengulangan 2)

Hari Pertama:

$$\begin{aligned}
 M &= \frac{539.7 - 228.1}{539.7} 100\% \\
 &= 57.73578\% \text{ bb} \\
 M &= \frac{517.8 - 228.1}{517.8} 100\% \\
 &= 55.94824\% \text{ bb} \\
 M &= \frac{482.8 - 228.1}{482.8} 100\% \\
 &= 52.75476\% \text{ bb} \\
 M &= \frac{449 - 228.1}{499} 100\% \\
 &= 49.19822\% \text{ bb} \\
 M &= \frac{415.7 - 228.1}{415.7} 100\% \\
 &= 45.1287\% \text{ bb} \\
 M &= \frac{383.2 - 228.1}{383.2} 100\% \\
 &= 40.47495\% \text{ bb} \\
 M &= \frac{362.9 - 228.1}{362.9} 100\% \\
 &= 37.14522\% \text{ bb} \\
 M &= \frac{350.2 - 228.1}{350.2} 100\% \\
 &= 34.86579\% \text{ bb} \\
 M &= \frac{346.7 - 228.1}{346.7} 100\% \\
 &= 34.20825\% \text{ bb} \\
 M &= \frac{342.7 - 228.1}{342.7} 100\% \\
 &= 33.44033\% \text{ bb}
 \end{aligned}$$

Hari ke-dua

$$\begin{aligned}
 M &= \frac{321.2 - 228.1}{321.2} 100\% \\
 &= 28.98506\% \text{ bb} \\
 M &= \frac{316.1 - 228.1}{316.1} 100\% \\
 &= 27.83929\% \text{ bb} \\
 M &= \frac{309.4 - 228.1}{309.4} 100\% \\
 &= 26.27666\% \text{ bb} \\
 M &= \frac{303.4 - 228.1}{303.4} 100\% \\
 &= 24.81872\% \text{ bb}
 \end{aligned}$$

$$\begin{aligned}
M &= \frac{299.5 - 228.1}{299.5} 100\% \\
&= 23.83973\% \text{ bb} \\
M &= \frac{295.7 - 228.1}{295.7} 100\% \\
&= 22.86101\% \text{ bb} \\
M &= \frac{293 - 228.1}{293} 100\% \\
&= 22.15017\% \text{ bb} \\
M &= \frac{287.9 - 228.1}{287.9} 100\% \\
&= 20.7711\% \text{ bb} \\
M &= \frac{286.1 - 228.1}{286.1} 100\% \\
&= 20.27263\% \text{ bb} \\
M &= \frac{285.1 - 228.1}{285.1} 100\% \\
&= 19.99298\% \text{ bb}
\end{aligned}$$

Hari ke-tiga

$$\begin{aligned}
M &= \frac{275.2 - 228.1}{275.2} 100\% \\
&= 17.11483\% \text{ bb} \\
M &= \frac{273.2 - 228.1}{273.2} 100\% \\
&= 16.50805\% \text{ bb} \\
M &= \frac{270.6 - 228.1}{270.6} 100\% \\
&= 15.70584\% \text{ bb} \\
M &= \frac{267.8 - 228.1}{267.8} 100\% \\
&= 14.8245\% \text{ bb} \\
M &= \frac{265.6 - 228.1}{265.6} 100\% \\
&= 14.11898\% \text{ bb} \\
M &= \frac{262.6 - 228.1}{262.6} 100\% \\
&= 13.13785\% \text{ bb} \\
M &= \frac{260.4 - 228.1}{260.4} 100\% \\
&= 12.40399\% \text{ bb} \\
M &= \frac{258.1 - 228.1}{258.1} 100\% \\
&= 11.6234\% \text{ bb} \\
M &= \frac{257.3 - 228.1}{257.3} 100\% \\
&= 11.34852\% \text{ bb} \\
M &= \frac{256.9 - 228.1}{256.9} 100\% \\
&= 11.21059\% \text{ bb}
\end{aligned}$$

Hari ke-empat

$$M = \frac{256.9 - 228.1}{256.9} 100\%$$

$$\begin{aligned}
&= 11.21059\% \text{ bb} \\
M &= \frac{252.9 - 228.1}{252.9} 100\% \\
&= 9.806248\% \text{ bb} \\
M &= \frac{250.8 - 228.1}{250.8} 100\% \\
&= 9.051037\% \text{ bb} \\
M &= \frac{249.1 - 228.1}{249.1} 100\% \\
&= 8.430349\% \text{ bb} \\
\\
M &= \frac{247.9 - 228.1}{247.9} 100\% \\
&= 7.987092\% \text{ bb} \\
M &= \frac{246.6 - 228.1}{246.6} 100\% \\
&= 7.502028\% \text{ bb} \\
M &= \frac{245.6 - 228.1}{245.6} 100\% \\
&= 7.125407\% \text{ bb} \\
M &= \frac{245.1 - 228.1}{245.1} 100\% \\
&= 6.935945\% \text{ bb} \\
M &= \frac{244.8 - 228.1}{244.8} 100\% \\
&= 6.821895\% \text{ bb} \\
M &= \frac{244.7 - 228.1}{244.7} 100\% \\
&= 6.783817\% \text{ bb}
\end{aligned}$$

Hari ke-lima

$$\begin{aligned}
M &= \frac{246.7 - 228.1}{246.7} 100\% \\
&= 7.539\% \text{ bb} \\
M &= \frac{244.3 - 228.1}{244.3} 100\% \\
&= 6.631191\% \text{ bb} \\
M &= \frac{243.4 - 228.1}{243.4} 100\% \\
&= 6.285949\% \text{ bb} \\
M &= \frac{242.2 - 228.1}{242.2} 100\% \\
&= 5.860504\% \text{ bb} \\
M &= \frac{241.4 - 228.1}{241.4} 100\% \\
&= 5.5095285 \text{ bb} \\
M &= \frac{240.8 - 228.1}{240.8} 100\% \\
&= 5.274086\% \text{ bb}
\end{aligned}$$

### **Tiga Lapis (Pengulangan 1)**

Hari Pertama:



$$\begin{aligned}
M &= \frac{1038.9 - 402.2}{1038.9} 100\% \\
&= 61.28598\% \text{ bb} \\
M &= \frac{983.4 - 402.2}{983.4} 100\% \\
&= 59.10108\% \text{ bb} \\
M &= \frac{942.7 - 402.2}{942.7} 100\% \\
&= 57.33531\% \text{ bb} \\
M &= \frac{904.7 - 402.2}{904.7} 100\% \\
&= 55.54327\% \text{ bb} \\
M &= \frac{862 - 402.2}{862} 100\% \\
&= 53.34107\% \text{ bb} \\
M &= \frac{821.6 - 402.2}{821.6} 100\% \\
&= 51.04674\% \text{ bb} \\
M &= \frac{787.4 - 402.2}{787.4} 100\% \\
&= 48.9205\% \text{ bb} \\
M &= \frac{758.9 - 402.2}{758.9} 100\% \\
&= 47.00224\% \text{ bb} \\
M &= \frac{748.9 - 402.2}{748.9} 100\% \\
&= 46.29457\% \text{ bb} \\
M &= \frac{738.4 - 402.2}{738.4} 100\% \\
&= 45.53088\% \text{ bb}
\end{aligned}$$

Hari ke-dua

$$\begin{aligned}
M &= \frac{687.5 - 402.2}{687.5} 100\% \\
&= 41.49818\% \text{ bb} \\
M &= \frac{675.2 - 402.2}{675.2} 100\% \\
&= 40.43246\% \text{ bb} \\
M &= \frac{657.4 - 402.2}{657.4} 100\% \\
&= 38.81959\% \text{ bb} \\
M &= \frac{638.3 - 402.2}{638.3} 100\% \\
&= 36.98888\% \text{ bb} \\
M &= \frac{626.5 - 402.2}{626.5} 100\% \\
&= 35.80208\% \text{ bb} \\
M &= \frac{616.6 - 402.2}{616.6} 100\% \\
&= 34.77133\% \text{ bb} \\
M &= \frac{607 - 402.2}{607} 100\% \\
&= 33.7397\% \text{ bb}
\end{aligned}$$

$$\begin{aligned}
 M &= \frac{593.9 - 402.2}{593.9} 100\% \\
 &= 32.27816\% \text{ bb} \\
 M &= \frac{585.9 - 402.2}{585.9} 100\% \\
 &= 31.35347\% \text{ bb} \\
 M &= \frac{581.4 - 402.2}{581.4} 100\% \\
 &= 30.82215\% \text{ bb}
 \end{aligned}$$

Hari ke-tiga

$$\begin{aligned}
 M &= \frac{556.2 - 402.2}{556.2} 100\% \\
 &= 27.68788\% \text{ bb} \\
 M &= \frac{554.2 - 402.2}{554.2} 100\% \\
 &= 27.42692\% \text{ bb} \\
 M &= \frac{540.7 - 402.2}{540.7} 100\% \\
 &= 25.61494\% \text{ bb} \\
 M &= \frac{530.1 - 402.2}{530.1} 100\% \\
 &= 24.12752\% \text{ bb} \\
 M &= \frac{520.3 - 402.2}{520.3} 100\% \\
 &= 22.69844\% \text{ bb} \\
 M &= \frac{510.1 - 402.2}{510.1} 100\% \\
 &= 21.15272\% \text{ bb} \\
 M &= \frac{499.7 - 402.2}{499.7} 100\% \\
 &= 19.51171\% \text{ bb} \\
 M &= \frac{493 - 402.2}{493} 100\% \\
 &= 18.41785\% \text{ bb} \\
 M &= \frac{489.4 - 402.2}{489.4} 100\% \\
 &= 17.81774\% \text{ bb} \\
 M &= \frac{488.2 - 402.2}{488.2} 100\% \\
 &= 17.61573\% \text{ bb}
 \end{aligned}$$

Hari ke-empat

$$\begin{aligned}
 M &= \frac{488.2 - 402.2}{488.2} 100\% \\
 &= 17.61573\% \text{ bb} \\
 M &= \frac{474.3 - 402.2}{474.3} 100\% \\
 &= 15.20135\% \text{ bb} \\
 M &= \frac{467.5 - 402.2}{467.5} 100\% \\
 &= 13.96791\% \text{ bb}
 \end{aligned}$$

$$\begin{aligned}
M &= \frac{462.5 - 402.2}{462.5} 100\% \\
&= 13.03784\% \text{ bb} \\
M &= \frac{457.7 - 402.2}{457.7} 100\% \\
&= 12.12585\% \text{ bb} \\
M &= \frac{453.4 - 402.2}{453.4} 100\% \\
&= 11.29246\% \text{ bb} \\
M &= \frac{449.1 - 402.2}{449.1} 100\% \\
&= 10.44311\% \text{ bb} \\
M &= \frac{448.6 - 402.2}{448.6} 100\% \\
&= 10.34329\% \text{ bb} \\
M &= \frac{447.5 - 402.2}{447.5} 100\% \\
&= 10.12291\% \text{ bb} \\
M &= \frac{446.6 - 402.2}{446.6} 100\% \\
&= 9.941782\% \text{ bb}
\end{aligned}$$

Hari ke-lima

$$\begin{aligned}
M &= \frac{446.6 - 402.2}{446.6} 100\% \\
&= 9.941782\% \text{ bb} \\
M &= \frac{419.9 - 402.2}{419.9} 100\% \\
&= 9.168925\% \text{ bb} \\
M &= \frac{416.2 - 402.2}{416.2} 100\% \\
&= 8.152546\% \text{ bb} \\
M &= \frac{414 - 402.2}{414} 100\% \\
&= 7.731131\% \text{ bb} \\
M &= \frac{411.6 - 402.2}{411.6} 100\% \\
&= 7.113164\% \text{ bb} \\
M &= \frac{409.5 - 402.2}{409.5} 100\% \\
&= 6.703781\% \text{ bb}
\end{aligned}$$

### **Tiga Lapis (Pengulangan 2)**

Hari Pertama:

$$\begin{aligned}
M &= \frac{1038.9 - 383}{1038.9} 100\% \\
&= 63.13408\% \text{ bb} \\
M &= \frac{929.6 - 383}{929.6} 100\% \\
&= 58.79948\% \text{ bb}
\end{aligned}$$

$$\begin{aligned}
M &= \frac{891.8 - 383}{891.8} 100\% \\
&= 57.05315\% \text{ bb} \\
M &= \frac{850.2 - 383}{850.2} 100\% \\
&= 54.95178\% \text{ bb} \\
M &= \frac{806.5 - 383}{806.5} 100\% \\
&= 52.51085\% \text{ bb} \\
M &= \frac{766.1 - 383}{766.1} 100\% \\
&= 50.00653\% \text{ bb} \\
M &= \frac{729.8 - 383}{729.8} 100\% \\
&= 47.51987\% \text{ bb} \\
M &= \frac{701.3 - 383}{701.3} 100\% \\
&= 45.38714\% \text{ bb} \\
M &= \frac{691.7 - 383}{691.7} 100\% \\
&= 44.62917\% \text{ bb} \\
M &= \frac{681.4 - 383}{681.4} 100\% \\
&= 43.79219\% \text{ bb}
\end{aligned}$$

Hari ke-dua

$$\begin{aligned}
M &= \frac{637.4 - 383}{637.4} 100\% \\
&= 39.91214\% \text{ bb} \\
M &= \frac{626 - 383}{626} 100\% \\
&= 38.81789\% \text{ bb} \\
M &= \frac{606.6 - 383}{606.6} 100\% \\
&= 36.86119\% \text{ bb} \\
M &= \frac{591.3 - 383}{591.3} 100\% \\
&= 35.22746\% \text{ bb} \\
M &= \frac{581 - 383}{581} 100\% \\
&= 34.07917\% \text{ bb} \\
M &= \frac{571.1 - 383}{571.1} 100\% \\
&= 32.93644\% \text{ bb} \\
M &= \frac{562.3 - 383}{562.3} 100\% \\
&= 31.88689\% \text{ bb} \\
M &= \frac{549.5 - 383}{549.5} 100\% \\
&= 30.30027\% \text{ bb} \\
M &= \frac{542.8 - 383}{542.8} 100\% \\
&= 29.43994\% \text{ bb}
\end{aligned}$$

$$M = \frac{538.9 - 383}{538.9} 100\% \\ = 28.9293\% \text{ bb}$$

Hari ke-tiga

$$M = \frac{515.2 - 383}{515.2} 100\% \\ = 25.65994\% \text{ bb}$$

$$M = \frac{510.7 - 383}{510.7} 100\% \\ = 25.0049\% \text{ bb}$$

$$M = \frac{501.7 - 383}{501.7} 100\% \\ = 23.65956\% \text{ bb}$$

$$M = \frac{491.9 - 383}{491.9} 100\% \\ = 22.13865\% \text{ bb}$$

$$M = \frac{483.3 - 383}{483.3} 100\% \\ = 20.75316\% \text{ bb}$$

$$M = \frac{474.7 - 383}{474.7} 100\% \\ = 19.31746\% \text{ bb}$$

$$M = \frac{468 - 383}{468} 100\% \\ = 18.16239\% \text{ bb}$$

$$M = \frac{463.5 - 383}{463.5} 100\% \\ = 17.36785\% \text{ bb}$$

$$M = \frac{459.5 - 383}{459.5} 100\% \\ = 16.64853\% \text{ bb}$$

$$M = \frac{458.5 - 383}{458.5} 100\% \\ = 16.46674\% \text{ bb}$$

Hari ke-empat

$$M = \frac{458.5 - 383}{458.5} 100\% \\ = 16.46674\% \text{ bb}$$

$$M = \frac{446.9 - 383}{446.9} 100\% \\ = 14.2985\% \text{ bb}$$

$$M = \frac{441.7 - 383}{441.7} 100\% \\ = 13.28956\% \text{ bb}$$

$$M = \frac{437.7 - 383}{437.7} 100\% \\ = 12.49714\% \text{ bb}$$

$$M = \frac{432.6 - 383}{432.6} 100\% \\ = 11.46556\% \text{ bb}$$

$$M = \frac{428.5 - 383}{428.5} 100\%$$

$$\begin{aligned}
&= 10.61844\% \text{ bb} \\
M &= \frac{425.4 - 383}{425.4} 100\% \\
&= 9.96709\% \text{ bb} \\
M &= \frac{423.8 - 402.2}{423.8} 100\% \\
&= 9.627183\% \text{ bb} \\
M &= \frac{423.6 - 383}{423.6} 100\% \\
&= 9.584514\% \text{ bb} \\
M &= \frac{422.9 - 383}{422.9} 100\% \\
&= 9.434855\% \text{ bb}
\end{aligned}$$

Hari ke-lima

$$\begin{aligned}
M &= \frac{442.9 - 383}{442.9} 100\% \\
&= 13.5245\% \text{ bb} \\
M &= \frac{419.9 - 383}{419.9} 100\% \\
&= 8.78780\% \text{ bb} \\
M &= \frac{416.2 - 383}{416.2} 100\% \\
&= 7.97693\% \text{ bb} \\
M &= \frac{414 - 383}{414} 100\% \\
&= 7.48792\% \text{ bb} \\
M &= \frac{411.6 - 383}{411.6} 100\% \\
&= 6.948494\% \text{ bb} \\
M &= \frac{409.5 - 402.2}{409.5} 100\% \\
&= 6.471306\% \text{ bb}
\end{aligned}$$

**Dengan penutup**

**Satu Lapis (Pengulangan 1)**

Hari Pertama:

$$\begin{aligned}
M &= \frac{538.3 - 219.1}{538.3} 100\% \\
&= 59.29779\% \text{ bb} \\
M &= \frac{519.2 - 219.1}{519.2} 100\% \\
&= 57.80046\% \text{ bb} \\
M &= \frac{491.5 - 219.1}{491.5} 100\% \\
&= 55.42218\% \text{ bb} \\
M &= \frac{459.1 - 219.1}{459.1} 100\% \\
&= 52.27619\% \text{ bb}
\end{aligned}$$

$$M = \frac{424.1 - 219.1}{424.1} 100\% \\ = 48.33766\% \text{ bb}$$

$$M = \frac{390.8 - 219.1}{390.8} 100\% \\ = 43.93552\% \text{ bb}$$

$$M = \frac{371.6 - 219.1}{371.6} 100\% \\ = 41.03875\% \text{ bb}$$

$$M = \frac{354.7 - 219.1}{354.7} 100\% \\ = 38.22949\% \text{ bb}$$

$$M = \frac{349 - 219.1}{349} 100\% \\ = 37.22063\% \text{ bb}$$

$$M = \frac{344.5 - 219.1}{344.5} 100\% \\ = 36.40058\% \text{ bb}$$

#### Hari Ke-dua

$$M = \frac{319.4 - 219.1}{319.4} 100\% \\ = 31.40263\% \text{ bb}$$

$$M = \frac{314.1 - 219.1}{314.1} 100\% \\ = 30.245145\% \text{ bb}$$

$$M = \frac{306.9 - 219.1}{306.9} 100\% \\ = 28.608667\% \text{ bb}$$

$$M = \frac{300.4 - 219.1}{300.4} 100\% \\ = 27.063915\% \text{ bb}$$

$$M = \frac{296 - 219.1}{296} 100\% \\ = 25.97973\% \text{ bb}$$

$$M = \frac{292 - 219.1}{292} 100\% \\ = 24.965753\% \text{ bb}$$

$$M = \frac{289.6 - 219.1}{289.6} 100\% \\ = 24.343923\% \text{ bb}$$

$$M = \frac{278.1 - 219.1}{278.1} 100\% \\ = 21.21539\% \text{ bb}$$

$$M = \frac{276.1 - 219.1}{276.1} 100\% \\ = 20.644694\% \text{ bb}$$

$$M = \frac{275.2 - 219.1}{275.2} 100\% \\ = 20.385174\% \text{ bb}$$

Hari ke-tiga

$$M = \frac{265.9 - 219.1}{265.9} 100\%$$

$$= 17.6006\% \text{ bb}$$

$$M = \frac{263.6 - 219.1}{263.6} 100\%$$

$$= 16.88164\% \text{ bb}$$

$$M = \frac{260.3 - 219.1}{260.3} 100\%$$

$$= 15.82789\% \text{ bb}$$

$$M = \frac{257.5 - 219.1}{257.5} 100\%$$

$$= 14.91262\% \text{ bb}$$

$$M = \frac{255.1 - 219.1}{255.1} 100\%$$

$$= 14.1211\% \text{ bb}$$

$$M = \frac{251.5 - 219.1}{251.5} 100\%$$

$$= 12.8827\% \text{ bb}$$

$$M = \frac{249.5 - 219.1}{249.5} 100\%$$

$$= 12.18437\% \text{ bb}$$

$$M = \frac{247 - 219.1}{247} 100\%$$

$$= 11.29555\% \text{ bb}$$

$$M = \frac{246 - 219.1}{246} 100\%$$

$$= 10.93496\% \text{ bb}$$

$$M = \frac{245.7 - 219.1}{245.7} 100\%$$

$$= 10.82621\% \text{ bb}$$

Hari ke-empat

$$M = \frac{245.7 - 219.1}{245.7} 100\%$$

$$= 10.82621\% \text{ bb}$$

$$M = \frac{241.6 - 219.1}{241.6} 100\%$$

$$= 9.312914\% \text{ bb}$$

$$M = \frac{239.9 - 219.1}{239.9} 100\%$$

$$= 8.670279\% \text{ bb}$$

$$M = \frac{238.9 - 219.1}{238.9} 100\%$$

$$= 8.287987\% \text{ bb}$$

$$M = \frac{236.6 - 219.1}{236.6} 100\%$$

$$= 7.39645\% \text{ bb}$$

$$M = \frac{234.9 - 219.1}{234.9} 100\%$$

$$= 6.726266\% \text{ bb}$$

$$M = \frac{234 - 219.1}{234} 100\%$$

$$= 6.367521\% \text{ bb}$$



$$\begin{aligned}
 &= 6.367521\% \text{ bb} \\
 \text{M} &= \frac{233.9 - 219.1}{233.9} 100\% \\
 &= 6.32749\% \text{ bb} \\
 \text{M} &= \frac{233.8 - 219.1}{233.8} 100\% \\
 &= 6.287425\% \text{ bb} \\
 \text{M} &= \frac{233.6 - 219.1}{233.6} 100\% \\
 &= 6.207192\% \text{ bb}
 \end{aligned}$$

Hari ke-lima

$$\begin{aligned}
 \text{M} &= \frac{233.6 - 219.1}{233.6} 100\% \\
 &= 6.207192\% \text{ bb} \\
 \text{M} &= \frac{232 - 219.1}{232} 100\% \\
 &= 5.560345\% \text{ bb} \\
 \text{M} &= \frac{230.5 - 219.1}{230.5} 100\% \\
 &= 4.94577\% \text{ bb} \\
 \text{M} &= \frac{229.8 - 219.1}{229.8} 100\% \\
 &= 4.656223\% \text{ bb} \\
 \text{M} &= \frac{229 - 219.1}{229} 100\% \\
 &= 4.323144\% \text{ bb} \\
 \text{M} &= \frac{228.1 - 219.1}{228.1} 100\% \\
 &= 3.945638\% \text{ bb}
 \end{aligned}$$

### **Satu Lapis (Pengulangan 2)**

Hari Pertama:

$$\begin{aligned}
 \text{M} &= \frac{539.9 - 225.3}{539.9} 100\% \\
 &= 58.27005\% \text{ bb} \\
 \text{M} &= \frac{519.6 - 225.3}{519.6} 100\% \\
 &= 56.63972\% \text{ bb} \\
 \text{M} &= \frac{490.4 - 225.3}{490.4} 100\% \\
 &= 54.05791\% \text{ bb} \\
 \text{M} &= \frac{455.4 - 225.3}{455.4} 100\% \\
 &= 50.52701\% \text{ bb} \\
 \text{M} &= \frac{417.2 - 225.3}{417.2} 100\% \\
 &= 45.99712\% \text{ bb} \\
 \text{M} &= \frac{382 - 225.3}{382} 100\%
 \end{aligned}$$

$$\begin{aligned}
&= 41.02094\% \text{ bb} \\
M &= \frac{346.6 - 225.3}{346.6} 100\% \\
&= 34.99711\% \text{ bb} \\
M &= \frac{346.3 - 225.3}{346.3} 100\% \\
&= 34.9408\% \text{ bb} \\
M &= \frac{339.4 - 225.3}{339.4} 100\% \\
&= 33.61815\% \text{ bb} \\
M &= \frac{335.1 - 225.3}{335.1} 100\% \\
&= 32.76634\% \text{ bb}
\end{aligned}$$

Hari ke-dua

$$\begin{aligned}
M &= \frac{312.7 - 225.3}{312.7} 100\% \\
&= 66.42298\% \text{ bb} \\
M &= \frac{307.1 - 225.3}{307.1} 100\% \\
&= 63.44648\% \text{ bb} \\
M &= \frac{300.6 - 225.3}{383} 100\% \\
&= 58.3812\% \text{ bk} \\
M &= \frac{294.4 - 225.3}{294.4} 100\% \\
&= 23.47147\% \text{ bb} \\
M &= \frac{290.7 - 225.3}{290.7} 100\% \\
&= 22.49742\% \text{ bb} \\
M &= \frac{287.3 - 225.3}{287.3} 100\% \\
&= 21.58023\% \text{ bb} \\
M &= \frac{285.8 - 225.3}{285.8} 100\% \\
&= 21.16865\% \text{ bb} \\
M &= \frac{284.4 - 225.3}{284.4} 100\% \\
&= 20.78059\% \text{ bb} \\
M &= \frac{283 - 225.3}{283} 100\% \\
&= 20.38869\% \text{ bb} \\
M &= \frac{282 - 225.3}{282} 100\% \\
&= 20.10638\% \text{ bb}
\end{aligned}$$

Hari ke-tiga

$$\begin{aligned}
M &= \frac{273.7 - 225.3}{273.7} 100\% \\
&= 17.6836\% \text{ bb} \\
M &= \frac{270.6 - 225.3}{270.6} 100\% \\
&= 16.74058\% \text{ bb}
\end{aligned}$$

$$\begin{aligned}
M &= \frac{268.4 - 225.3}{268.4} 100\% \\
&= 16.05812\% \text{ bb} \\
M &= \frac{266.8 - 225.3}{266.8} 100\% \\
&= 15.55472\% \text{ bb} \\
M &= \frac{264 - 225.3}{264} 100\% \\
&= 14.65909\% \text{ bb} \\
M &= \frac{260.8 - 225.3}{260.8} 100\% \\
&= 13.61196\% \text{ bb} \\
M &= \frac{256 - 225.3}{256} 100\% \\
&= 11.99219\% \text{ bb} \\
M &= \frac{253.2 - 225.3}{253.2} 100\% \\
&= 11.01896\% \text{ bb} \\
M &= \frac{252.4 - 225.3}{252.4} 100\% \\
&= 10.73693\% \text{ bb} \\
M &= \frac{252.1 - 225.3}{252.1} 100\% \\
&= 10.6307\% \text{ bb}
\end{aligned}$$

Hari ke-empat

$$\begin{aligned}
M &= \frac{252.1 - 225.3}{252.1} 100\% \\
&= 106307\% \text{ bb} \\
M &= \frac{248.5 - 225.3}{248.5} 100\% \\
&= 9.336016\% \text{ bb} \\
M &= \frac{247.2 - 225.3}{247.2} 100\% \\
&= 8.859223\% \text{ bb} \\
M &= \frac{245.4 - 225.3}{245.4} 100\% \\
&= 8.190709\% \text{ bb} \\
M &= \frac{244.9 - 225.3}{244.9} 100\% \\
&= 8.003267\% \text{ bb} \\
M &= \frac{243.4 - 225.3}{243.4} 100\% \\
&= 7.436319\% \text{ bb} \\
M &= \frac{242.1 - 225.3}{242.1} 100\% \\
&= 6.939281\% \text{ bb} \\
M &= \frac{241.9 - 225.3}{241.9} 100\% \\
&= 6.86234\% \text{ bb} \\
M &= \frac{241.8 - 225.3}{241.8} 100\% \\
&= 6.823821\% \text{ bb}
\end{aligned}$$

$$M = \frac{241.8 - 225.3}{241.8} 100\% \\ = 6.823821\% \text{ bb}$$

Hari ke-lima

$$M = \frac{241.8 - 225.3}{241.8} 100\% \\ = 6.823821\% \text{ bb}$$

$$M = \frac{240 - 225.3}{240} 100\% \\ = 6.125\% \text{ bb}$$

$$M = \frac{239 - 225.3}{239} 100\% \\ = 5.732218\% \text{ bb}$$

$$M = \frac{238 - 225.3}{238} 100\% \\ = 5.336134\% \text{ bb}$$

$$M = \frac{237.1 - 225.3}{237.1} 100\% \\ = 4.976803\% \text{ bb}$$

$$M = \frac{237.1 - 225.3}{237.1} 100\% \\ = 4.976803\% \text{ bb}$$

### **Tiga Lapis (Pengulangan 1)**

Hari Pertama:

$$M = \frac{1039.9 - 363.1}{1039.9} 100\% \\ = 65.08318\% \text{ bb}$$

$$M = \frac{885.1 - 363.1}{885.1} 100\% \\ = 58.97639\% \text{ bb}$$

$$M = \frac{849.3 - 363.1}{849.3} 100\% \\ = 57.24714\% \text{ bb}$$

$$M = \frac{815 - 363.1}{815} 100\% \\ = 55.44785\% \text{ bb}$$

$$M = \frac{776.4 - 363.1}{776.4} 100\% \\ = 53.23287\% \text{ bb}$$

$$M = \frac{735.5 - 363.1}{735.5} 100\% \\ = 50.63222\% \text{ bb}$$

$$M = \frac{704.7 - 363.1}{704.7} 100\% \\ = 48.47453\% \text{ bb}$$

$$M = \frac{677.3 - 363.1}{677.3} 100\% \\ = 46.39008\% \text{ bb}$$

$$M = \frac{662.8 - 363.1}{662.8} 100\% \\ = 45.21726\% \text{ bb}$$

$$M = \frac{653.6 - 363.1}{653.6} 100\% \\ = 44.44614\% \text{ bb}$$

Hari ke-dua

$$M = \frac{610.6 - 363.1}{610.6} 100\% \\ = 40.5339\% \text{ bb}$$

$$M = \frac{599.5 - 363.1}{599.5} 100\% \\ = 39.43286\% \text{ bb}$$

$$M = \frac{585 - 363.1}{585} 100\% \\ = 37.93162\% \text{ bb}$$

$$M = \frac{568.4 - 363.1}{568.4} 100\% \\ = 36.11893\% \text{ bb}$$

$$M = \frac{555.9 - 363.1}{555.9} 100\% \\ = 34.6825\% \text{ bb}$$

$$M = \frac{545.9 - 363.1}{545.9} 100\% \\ = 33.48599\% \text{ bb}$$

$$M = \frac{537.1 - 363.1}{537.1} 100\% \\ = 32.3962\% \text{ bb}$$

$$M = \frac{525.1 - 363.1}{525.1} 100\% \\ = 30.85127\% \text{ bb}$$

$$M = \frac{517.3 - 363.1}{517.3} 100\% \\ = 29.80862\% \text{ bb}$$

$$M = \frac{513.4 - 402.2}{513.4} 100\% \\ = 29.27542\% \text{ bb}$$

Hari ke-tiga

$$M = \frac{491.4 - 363.1}{491.4} 100\% \\ = 26.10908\% \text{ bb}$$

$$M = \frac{486.6 - 363.1}{486.6} 100\% \\ = 25.38019\% \text{ bb}$$

$$M = \frac{477.6 - 363.1}{477.6} 100\% \\ = 23.97404\% \text{ bb}$$

$$M = \frac{468.5 - 363.1}{468.5} 100\% \\ = 22.49733\% \text{ bb}$$

$$M = \frac{460.4 - 363.1}{460.4} 100\% \\ = 21.1338\% \text{ bb}$$

$$M = \frac{451.5 - 363.1}{451.5} 100\%$$

$$\begin{aligned}
&= 19.57918\% \text{ bb} \\
M &= \frac{446.5 - 363.1}{446.5} 100\% \\
&= 18.67861\% \text{ bb} \\
M &= \frac{439.2 - 363.1}{439.2} 100\% \\
&= 17.32696\% \text{ bb} \\
M &= \frac{435.8 - 363.1}{435.8} 100\% \\
&= 16.68196\% \text{ bb} \\
M &= \frac{435.8 - 363.1}{435.8} 100\% \\
&= 16.47113\% \text{ bb}
\end{aligned}$$

Hari ke-empat

$$\begin{aligned}
M &= \frac{434.7 - 363.1}{434.7} 100\% \\
&= 16.47113\% \text{ bb} \\
M &= \frac{423 - 363.1}{423} 100\% \\
&= 14.16076\% \text{ bb} \\
M &= \frac{413 - 363.1}{413} 100\% \\
&= 12.08232\% \text{ bb} \\
M &= \frac{412.7 - 363.1}{412.7} 100\% \\
&= 12.01842\% \text{ bb} \\
M &= \frac{407.9 - 363.1}{407.9} 100\% \\
&= 10.98308\% \text{ bb} \\
M &= \frac{402.4 - 363.1}{402.4} 100\% \\
&= 9.766402\% \text{ bb} \\
M &= \frac{399.4 - 363.1}{399.4} 100\% \\
&= 9.088633\% \text{ bb} \\
M &= \frac{398.1 - 363.1}{398.1} 100\% \\
&= 8.791761\% \text{ bb} \\
M &= \frac{398.1 - 363.1}{398.1} 100\% \\
&= 8.791761\% \text{ bb} \\
M &= \frac{397 - 363.1}{397} 100\% \\
&= 8.539043\% \text{ bb}
\end{aligned}$$

Hari ke-lima

$$\begin{aligned}
M &= \frac{397 - 363.1}{397} 100\% \\
&= 8.539043\% \text{ bb} \\
M &= \frac{359.2 - 363.1}{359.2} 100\%
\end{aligned}$$

$$\begin{aligned}
&= 8.215359\% \text{ bb} \\
M &= \frac{356.3 - 363.1}{356.3} 100\% \\
&= 7.372449\% \text{ bb} \\
M &= \frac{354.8 - 363.1}{354.8} 100\% \\
&= 6.921302\% \text{ bb} \\
M &= \frac{352.8 - 363.1}{352.8} 100\% \\
&= 6.3934\% \text{ bb} \\
M &= \frac{351 - 363.1}{351} 100\% \\
&= 5.981357\% \text{ bb}
\end{aligned}$$

### **Tiga Lapis (Pengulangan 2)**

Hari Pertama:

$$\begin{aligned}
M &= \frac{1038.9 - 330.5}{1038.9} 100\% \\
&= 65.08318\% \text{ bb} \\
M &= \frac{815.8 - 330.5}{815.8} 100\% \\
&= 58.97639\% \text{ bb} \\
M &= \frac{781 - 330.5}{781} 100\% \\
&= 57.24714\% \text{ bb} \\
M &= \frac{745.3 - 330.5}{745.3} 100\% \\
&= 55.44785\% \text{ bb} \\
M &= \frac{701.3 - 330.5}{701.3} 100\% \\
&= 53.23287\% \text{ bb} \\
M &= \frac{667.4 - 330.5}{667.4} 100\% \\
&= 50.63222\% \text{ bb} \\
M &= \frac{644.1 - 330.5}{644.1} 100\% \\
&= 48.47453\% \text{ bb} \\
M &= \frac{619 - 330.5}{619} 100\% \\
&= 46.39008\% \text{ bb} \\
M &= \frac{608.4 - 330.5}{608.4} 100\% \\
&= 45.21726\% \text{ bb} \\
M &= \frac{598.9 - 330.5}{598.9} 100\% \\
&= 44.44614\% \text{ bb}
\end{aligned}$$

Hari ke-dua

$$\begin{aligned}
M &= \frac{555.3 - 330.5}{555.3} 100\% \\
&= 40.5339\% \text{ bb}
\end{aligned}$$

$$\begin{aligned}
M &= \frac{543.1 - 330.5}{543.1} 100\% \\
&= 39.43286\% \text{ bb} \\
M &= \frac{519.7 - 330.5}{519.7} 100\% \\
&= 37.93162\% \text{ bb} \\
M &= \frac{506.3 - 330.5}{506.3} 100\% \\
&= 36.11893\% \text{ bb} \\
M &= \frac{497 - 330.5}{497} 100\% \\
&= 34.6825\% \text{ bb} \\
M &= \frac{488.1 - 330.5}{488.1} 100\% \\
&= 33.48599\% \text{ bb} \\
M &= \frac{481 - 330.5}{481} 100\% \\
&= 32.3962\% \text{ bb} \\
M &= \frac{468.8 - 330.5}{468.8} 100\% \\
&= 30.85127\% \text{ bb} \\
M &= \frac{462.5 - 330.5}{462.5} 100\% \\
&= 29.80862\% \text{ bb} \\
M &= \frac{457.2 - 330.5}{457.2} 100\% \\
&= 29.27542\% \text{ bb}
\end{aligned}$$

Hari ke-tiga

$$\begin{aligned}
M &= \frac{439.7 - 330.5}{439.7} 100\% \\
&= 26.10908\% \text{ bb} \\
M &= \frac{434.8 - 330.5}{434.8} 100\% \\
&= 25.38019\% \text{ bb} \\
M &= \frac{427.9 - 330.5}{427.9} 100\% \\
&= 23.97404\% \text{ bb} \\
M &= \frac{419.4 - 330.5}{419.4} 100\% \\
&= 22.49733\% \text{ bb} \\
M &= \frac{412.9 - 330.5}{412.9} 100\% \\
&= 21.1338\% \text{ bb} \\
M &= \frac{406 - 330.5}{406} 100\% \\
&= 19.57918\% \text{ bb} \\
M &= \frac{404.8 - 330.5}{404.8} 100\% \\
&= 18.67861\% \text{ bb} \\
M &= \frac{398.3 - 330.5}{398.3} 100\% \\
&= 17.32696\% \text{ bb}
\end{aligned}$$



$$\begin{aligned}
 M &= \frac{396.1 - 330.5}{396.1} 100\% \\
 &= 16.68196\% \text{ bb} \\
 M &= \frac{395 - 330.5}{395} 100\% \\
 &= 16.47113\% \text{ bb}
 \end{aligned}$$

Hari ke-empat

$$\begin{aligned}
 M &= \frac{395 - 330.5}{395} 100\% \\
 &= 16.47113\% \text{ bb} \\
 M &= \frac{383.9 - 330.5}{383.9} 100\% \\
 &= 14.16076\% \text{ bb} \\
 M &= \frac{378.8 - 330.5}{378.8} 100\% \\
 &= 12.08232\% \text{ bb} \\
 M &= \frac{374.6 - 330.5}{374.6} 100\% \\
 &= 12.01842\% \text{ bb} \\
 M &= \frac{370.7 - 330.5}{370.7} 100\% \\
 &= 10.98308\% \text{ bb} \\
 M &= \frac{367.6 - 330.5}{367.6} 100\% \\
 &= 9.766402\% \text{ bb} \\
 M &= \frac{364.7 - 330.5}{364.7} 100\% \\
 &= 9.088633\% \text{ bb} \\
 M &= \frac{363 - 330.5}{363} 100\% \\
 &= 8.791761\% \text{ bb} \\
 M &= \frac{363 - 330.5}{363} 100\% \\
 &= 8.791761\% \text{ bb} \\
 M &= \frac{361.9 - 330.5}{361.9} 100\% \\
 &= 8.539043\% \text{ bb}
 \end{aligned}$$

Hari ke-lima

$$\begin{aligned}
 M &= \frac{361.9 - 330.5}{361.9} 100\% \\
 &= 8.539043\% \text{ bb} \\
 M &= \frac{359.2 - 330.5}{359.2} 100\% \\
 &= 8.215369\% \text{ bb} \\
 M &= \frac{356.3 - 330.5}{356.3} 100\% \\
 &= 7.372449\% \text{ bb} \\
 M &= \frac{354.8 - 330.5}{354.8} 100\% \\
 &= 6.921304\% \text{ bb}
 \end{aligned}$$

$$\begin{aligned}
 M &= \frac{352.8 - 330.5}{352.8} 100\% \\
 &= 6.3934\% \text{ bb} \\
 M &= \frac{351 - 330.5}{351} 100\% \\
 &= 5.981357\% \text{ bb}
 \end{aligned}$$

## Lampiran 2. Perhitungan kadar air basis kering

$$M = \frac{W_m}{W_d} 100\%$$

### Tanpa penutup

#### Satu Lapis (Pengulangan 1)

Hari Pertama:

$$\begin{aligned}
 M &= \frac{540.8 - 228.4}{228.4} 100\% \\
 &= 136.7776\% \text{ bk}
 \end{aligned}$$

$$\begin{aligned}
 M &= \frac{519.8 - 228.4}{228.4} 100\% \\
 &= 127.5832\% \text{ bk}
 \end{aligned}$$

$$\begin{aligned}
 M &= \frac{486.6 - 228.4}{228.4} 100\% \\
 &= 113.0473\% \text{ bk}
 \end{aligned}$$

$$\begin{aligned}
 M &= \frac{450.4 - 228.4}{228.4} 100\% \\
 &= 97.1979\% \text{ bk}
 \end{aligned}$$

$$\begin{aligned}
 M &= \frac{411.8 - 228.4}{228.4} 100\% \\
 &= 80.29772\% \text{ bk}
 \end{aligned}$$

$$\begin{aligned}
 M &= \frac{379.4 - 228.4}{228.4} 100\% \\
 &= 66.11208\% \text{ bk}
 \end{aligned}$$

$$\begin{aligned}
 M &= \frac{360 - 228.4}{228.4} 100\% \\
 &= 57.61821\% \text{ bk}
 \end{aligned}$$

$$\begin{aligned}
 M &= \frac{347.6 - 228.4}{228.4} 100\% \\
 &= 52.18914\% \text{ bk}
 \end{aligned}$$

$$\begin{aligned}
 M &= \frac{343.9 - 228.4}{228.4} 100\% \\
 &= 50.56918\% \text{ bk}
 \end{aligned}$$

$$\begin{aligned}
 M &= \frac{340.1 - 228.4}{228.4} 100\% \\
 &= 48.90543\% \text{ bk}
 \end{aligned}$$

Hari Ke-dua

$$\begin{aligned}
M &= \frac{316.6 - 228.4}{228.4} 100\% \\
&= 38.616462\% \text{ bk} \\
M &= \frac{311.8 - 228.4}{228.4} 100\% \\
&= 36.514886\% \text{ bk} \\
M &= \frac{305.8 - 228.4}{228.4} 100\% \\
&= 33.887916\% \text{ bk} \\
M &= \frac{300.5 - 228.4}{228.4} 100\% \\
&= 31.567426\% \text{ bk} \\
M &= \frac{296.7 - 228.4}{228.4} 100\% \\
&= 29.903678\% \text{ bk} \\
M &= \frac{293.2 - 228.4}{228.4} 100\% \\
&= 28.371278\% \text{ bk} \\
M &= \frac{290.6 - 228.4}{228.4} 100\% \\
&= 27.232925\% \text{ bk} \\
M &= \frac{286.4 - 228.4}{228.4} 100\% \\
&= 25.394045\% \text{ bk} \\
M &= \frac{284.8 - 228.4}{228.4} 100\% \\
&= 24.69352\% \text{ bk} \\
M &= \frac{283.8 - 228.4}{228.4} 100\% \\
&= 24.255692\% \text{ bk}
\end{aligned}$$

Hari ke-tiga

$$\begin{aligned}
M &= \frac{274.4 - 228.4}{228.4} 100\% \\
&= 20.14011\% \text{ bk} \\
M &= \frac{269.7 - 228.4}{228.4} 100\% \\
&= 18.08231\% \text{ bk} \\
M &= \frac{269.5 - 228.4}{228.4} 100\% \\
&= 17.99475\% \text{ bk} \\
M &= \frac{267 - 228.4}{228.4} 100\% \\
&= 16.90018\% \text{ bk} \\
M &= \frac{264.8 - 228.4}{228.4} 100\% \\
&= 15.93695\% \text{ bk} \\
M &= \frac{262 - 228.4}{228.4} 100\% \\
&= 14.71103\% \text{ bk} \\
M &= \frac{259.7 - 228.4}{228.4} 100\% \\
&= 13.70403\% \text{ bk}
\end{aligned}$$

$$\begin{aligned}
 M &= \frac{258.1 - 228.4}{228.4} 100\% \\
 &= 13.0035\% \text{ bk} \\
 M &= \frac{257.2 - 228.4}{228.4} 100\% \\
 &= 12.60946\% \text{ bk} \\
 M &= \frac{256.9 - 228.4}{228.4} 100\% \\
 &= 12.47811\% \text{ bk}
 \end{aligned}$$

Hari ke-empat

$$\begin{aligned}
 M &= \frac{256.9 - 228.4}{228.4} 100\% \\
 &= 12.47811\% \text{ bk} \\
 M &= \frac{252.8 - 228.4}{228.4} 100\% \\
 &= 10.68301\% \text{ bk} \\
 M &= \frac{251.2 - 228.4}{228.4} 100\% \\
 &= 9.982487\% \text{ bk} \\
 M &= \frac{249.5 - 228.4}{228.4} 100\% \\
 &= 9.238179\% \text{ bk} \\
 M &= \frac{248.3 - 228.4}{228.4} 100\% \\
 &= 8.8712785\% \text{ bk} \\
 M &= \frac{247.3 - 228.4}{228.4} 100\% \\
 &= 8.274956\% \text{ bk} \\
 M &= \frac{246.1 - 228.4}{228.4} 100\% \\
 &= 7.749562\% \text{ bk} \\
 M &= \frac{245.9 - 228.4}{228.4} 100\% \\
 &= 7.661996\% \text{ bk} \\
 M &= \frac{245.8 - 228.4}{228.4} 100\% \\
 &= 7.618214\% \text{ bk} \\
 M &= \frac{245.6 - 228.4}{228.4} 100\% \\
 &= 7.530648\% \text{ bk}
 \end{aligned}$$

Hari ke-lima

$$\begin{aligned}
 M &= \frac{245.6 - 228.4}{228.4} 100\% \\
 &= 7.530648\% \text{ bk} \\
 M &= \frac{244.5 - 228.4}{228.4} 100\% \\
 &= 7.049037\% \text{ bk} \\
 M &= \frac{242.9 - 228.4}{228.4} 100\% \\
 &= 6.348511\% \text{ bk}
 \end{aligned}$$

$$\begin{aligned}
 M &= \frac{242.1 - 228.4}{228.4} 100\% \\
 &= 5.6998249\% \text{ bk} \\
 M &= \frac{241.3 - 228.4}{228.4} 100\% \\
 &= 5.647986\% \text{ bk} \\
 M &= \frac{240.6 - 228.4}{228.4} 100\% \\
 &= 5.341506\% \text{ bk}
 \end{aligned}$$

### Satu Lapis (Pengulangan 2)

Hari Pertama:

$$\begin{aligned}
 M &= \frac{539.7 - 228.1}{228.1} 100\% \\
 &= 136.6068\% \text{ bk} \\
 M &= \frac{517.8 - 228.1}{228.1} 100\% \\
 &= 127.0057\% \text{ bk} \\
 M &= \frac{482.8 - 228.1}{228.1} 100\% \\
 &= 111.6616\% \text{ bk} \\
 M &= \frac{449 - 228.1}{228.1} 100\% \\
 &= 96.84349\% \text{ bk} \\
 M &= \frac{415.7 - 228.1}{228.1} 100\% \\
 &= 82.24463\% \text{ bk} \\
 M &= \frac{383.2 - 228.1}{228.1} 100\% \\
 &= 67.99649\% \text{ bk} \\
 M &= \frac{362.9 - 228.1}{228.1} 100\% \\
 &= 59.09689\% \text{ bk} \\
 M &= \frac{350.2 - 228.1}{228.1} 100\% \\
 &= 53.52915\% \text{ bk} \\
 M &= \frac{346.7 - 228.1}{228.1} 100\% \\
 &= 51.99474\% \text{ bk} \\
 M &= \frac{342.7 - 228.1}{228.1} 100\% \\
 &= 50.24112\% \text{ bk}
 \end{aligned}$$

Hari ke-dua

$$\begin{aligned}
 M &= \frac{321.2 - 228.1}{228.1} 100\% \\
 &= 40.81543\% \text{ bk} \\
 M &= \frac{316.1 - 228.1}{228.1} 100\% \\
 &= 38.57957\% \text{ b} \\
 M &= \frac{309.4 - 228.1}{228.1} 100\%
 \end{aligned}$$

$$\begin{aligned}
&= 35.64226\% \text{ bk} \\
M &= \frac{303.4 - 228.1}{228.1} 100\% \\
&= 33.01184\% \text{ bk} \\
M &= \frac{299.5 - 228.1}{228.1} 100\% \\
&= 31.30206\% \text{ bk} \\
M &= \frac{295.7 - 228.1}{228.1} 100\% \\
&= 29.63612\% \text{ bk} \\
M &= \frac{293 - 228.1}{228.1} 100\% \\
&= 28.45243\% \text{ bk} \\
M &= \frac{287.9 - 228.1}{228.1} 100\% \\
&= 26.21657\% \text{ bb} \\
M &= \frac{286.1 - 228.1}{228.1} 100\% \\
&= 25.42744\% \text{ bk} \\
M &= \frac{285.1 - 228.1}{228.1} 100\% \\
&= 24.98904\% \text{ bk}
\end{aligned}$$

Hari ke-tiga

$$\begin{aligned}
M &= \frac{275.2 - 228.1}{228.1} 100\% \\
&= 20.64884\% \text{ bk} \\
M &= \frac{273.2 - 228.1}{228.1} 100\% \\
&= 19.77203\% \text{ bk} \\
M &= \frac{270.6 - 228.1}{228.1} 100\% \\
&= 18.63218\% \text{ bk} \\
M &= \frac{267.8 - 228.1}{228.1} 100\% \\
&= 17.40465\% \text{ bk} \\
M &= \frac{265.6 - 228.1}{228.1} 100\% \\
&= 16.44016\% \text{ bk} \\
M &= \frac{262.6 - 228.1}{228.1} 100\% \\
&= 15.12495\% \text{ bk} \\
M &= \frac{260.4 - 228.1}{228.1} 100\% \\
&= 14.16046\% \text{ bk} \\
M &= \frac{258.1 - 228.1}{258.1} 100\% \\
&= 13.15213\% \text{ bb} \\
M &= \frac{257.3 - 228.1}{228.1} 100\% \\
&= 12.8014\% \text{ bk} \\
M &= \frac{256.9 - 228.1}{228.1} 100\% \\
&= 12.62604\% \text{ bk}
\end{aligned}$$

Hari ke-empat

$$\begin{aligned} M &= \frac{256.9 - 228.1}{228.1} 100\% \\ &= 12.62604\% \text{ bk} \\ M &= \frac{252.9 - 228.1}{228.1} 100\% \\ &= 10.87242\% \text{ bk} \\ M &= \frac{250.8 - 228.1}{228.1} 100\% \\ &= 9.951776\% \text{ bk} \\ M &= \frac{249.1 - 228.1}{228.1} 100\% \\ &= 9.206488\% \text{ bk} \\ M &= \frac{247.9 - 228.1}{228.1} 100\% \\ &= 8.680403\% \text{ bk} \\ M &= \frac{246.6 - 228.1}{228.1} 100\% \\ &= 8.110478\% \text{ bk} \\ M &= \frac{245.6 - 228.1}{228.1} 100\% \\ &= 7.672074\% \text{ bk} \\ M &= \frac{245.1 - 228.1}{228.1} 100\% \\ &= 7.452872\% \text{ bk} \\ M &= \frac{244.8 - 228.1}{228.1} 100\% \\ &= 7.32135\% \text{ bk} \\ M &= \frac{244.7 - 228.1}{228.1} 100\% \\ &= 7.27751\% \text{ bk} \end{aligned}$$

Hari ke-lima

$$\begin{aligned} M &= \frac{246.7 - 228.1}{228.1} 100\% \\ &= 8.154318\% \text{ bk} \\ M &= \frac{244.3 - 228.1}{228.1} 100\% \\ &= 7.102148\% \text{ bk} \\ M &= \frac{243.4 - 228.1}{228.1} 100\% \\ &= 6.707584\% \text{ bk} \\ M &= \frac{242.2 - 228.1}{228.1} 100\% \\ &= 6.22534\% \text{ bb} \\ M &= \frac{241.4 - 228.1}{228.1} 100\% \\ &= 5.830776 \text{ bb} \\ M &= \frac{240.8 - 228.1}{240.8} 100\% \\ &= 5.567733\% \text{ bb} \end{aligned}$$

### Tiga Lapis (Pengulangan 1)

Hari Pertama:

$$\begin{aligned} M &= \frac{1038.9 - 402.2}{402.2} 100\% \\ &= 158.3043\% \text{ bk} \\ M &= \frac{983.4 - 402.2}{402.2} 100\% \\ &= 144.5052\% \text{ bk} \\ M &= \frac{942.7 - 402.2}{402.2} 100\% \\ &= 134.3859\% \text{ bk} \\ M &= \frac{904.7 - 402.2}{402.2} 100\% \\ &= 124.9378\% \text{ bk} \\ M &= \frac{862 - 402.2}{402.2} 100\% \\ &= 114.3212\% \text{ bk} \\ M &= \frac{821.6 - 402.2}{402.2} 100\% \\ &= 104.2765\% \text{ bk} \\ M &= \frac{787.4 - 402.2}{402.2} 100\% \\ &= 95.77325\% \text{ bb} \\ M &= \frac{758.9 - 402.2}{402.2} 100\% \\ &= 88.68722\% \text{ bk} \\ M &= \frac{748.9 - 402.2}{402.2} 100\% \\ &= 86.2009\% \text{ bk} \\ M &= \frac{738.4 - 402.2}{402.2} 100\% \\ &= 483.59025\% \text{ bk} \end{aligned}$$

Hari ke-dua

$$\begin{aligned} M &= \frac{687.5 - 402.2}{402.2} 100\% \\ &= 70.93486\% \text{ bk} \\ M &= \frac{675.2 - 402.2}{402.2} 100\% \\ &= 67.87668\% \text{ bk} \\ M &= \frac{657.4 - 402.2}{402.2} 100\% \\ &= 63.45102\% \text{ bk} \\ M &= \frac{638.3 - 402.2}{402.2} 100\% \\ &= 58.70214\% \text{ bk} \\ M &= \frac{626.5 - 402.2}{402.2} 100\% \\ &= 55.76827\% \text{ bb} \end{aligned}$$



$$\begin{aligned}
M &= \frac{616.6 - 402.2}{402.2} 100\% \\
&= 53.30681 \text{ bb} \\
M &= \frac{607 - 402.2}{402.2} 100\% \\
&= 50.91994\% \text{ bk} \\
M &= \frac{593.9 - 402.2}{402.2} 100\% \\
&= 47.66285\% \text{ bb} \\
M &= \frac{585.9 - 402.2}{402.2} 100\% \\
&= 45.67379\% \text{ bk} \\
M &= \frac{581.4 - 402.2}{402.2} 100\% \\
&= 44.55495\% \text{ bk}
\end{aligned}$$

Hari ke-tiga

$$\begin{aligned}
M &= \frac{556.2 - 402.2}{402.2} 100\% \\
&= 38.28941\% \text{ bk} \\
M &= \frac{554.2 - 402.2}{402.2} 100\% \\
&= 37.79214\% \text{ bk} \\
M &= \frac{540.7 - 402.2}{402.2} 100\% \\
&= 34.4356\% \text{ bk} \\
M &= \frac{530.1 - 402.2}{402.2} 100\% \\
&= 31.8001\% \text{ bk} \\
M &= \frac{520.3 - 402.2}{402.2} 100\% \\
&= 29.3635\% \text{ bk} \\
M &= \frac{510.1 - 402.2}{402.2} 100\% \\
&= 26.82745\% \text{ bk} \\
M &= \frac{499.7 - 402.2}{402.2} 100\% \\
&= 24.24167\% \text{ bk} \\
M &= \frac{493 - 402.2}{402.2} 100\% \\
&= 22.57583\% \text{ bk} \\
M &= \frac{489.4 - 402.2}{402.2} 100\% \\
&= 21.68076\% \text{ bb} \\
M &= \frac{488.2 - 402.2}{402.2} 100\% \\
&= 21.3824\% \text{ bk}
\end{aligned}$$

Hari ke-empat

$$\begin{aligned}
M &= \frac{488.2 - 402.2}{402.2} 100\% \\
&= 21.3824\% \text{ bk}
\end{aligned}$$

$$\begin{aligned}
M &= \frac{474.3 - 402.2}{402.2} 100\% \\
&= 17.9264\% \text{ bk} \\
M &= \frac{467.5 - 402.2}{402.2} 100\% \\
&= 16.2357\% \text{ bk} \\
M &= \frac{462.5 - 402.2}{402.2} 100\% \\
&= 14.99254\% \text{ bk} \\
M &= \frac{457.7 - 402.2}{402.2} 100\% \\
&= 13.7991\% \text{ bk} \\
M &= \frac{453.4 - 402.2}{402.2} 100\% \\
&= 12.72999\% \text{ bk} \\
M &= \frac{449.1 - 402.2}{402.2} 100\% \\
&= 11.66087\% \text{ bk} \\
M &= \frac{448.6 - 402.2}{402.2} 100\% \\
&= 11.53655\% \text{ bk} \\
M &= \frac{447.5 - 402.2}{402.2} 100\% \\
&= 11.26305\% \text{ bb} \\
M &= \frac{446.6 - 402.2}{402.2} 100\% \\
&= 11.03928\% \text{ bk}
\end{aligned}$$

Hari ke-lima

$$\begin{aligned}
M &= \frac{446.6 - 402.2}{402.2} 100\% \\
&= 11.03928\% \text{ bk} \\
M &= \frac{419.9 - 402.2}{402.2} 100\% \\
&= 10.09448\% \text{ bb} \\
M &= \frac{416.2 - 402.2}{402.2} 100\% \\
&= 8.876181\% \text{ bk} \\
M &= \frac{414 - 402.2}{402.2} 100\% \\
&= 8.378916\% \text{ bk} \\
M &= \frac{411.6 - 402.2}{402.2} 100\% \\
&= 7.657882\% \text{ bb} \\
M &= \frac{409.5 - 402.2}{402.2} 100\% \\
&= 7.18548\% \text{ bk}
\end{aligned}$$

## Tiga Lapis (Pengulangan 2)

Hari Pertama:

$$\begin{aligned}M &= \frac{1038.9 - 383}{383} 100\% \\ &= 171.2533\% \text{ bk} \\ M &= \frac{929.6 - 383}{383} 100\% \\ &= 142.7154\% \text{ bk} \\ M &= \frac{891.8 - 383}{383} 100\% \\ &= 132.846\% \text{ bk} \\ M &= \frac{850.2 - 383}{383} 100\% \\ &= 121.9843\% \text{ bk} \\ M &= \frac{806.5 - 383}{383} 100\% \\ &= 110.5744\% \text{ bk} \\ M &= \frac{766.1 - 383}{383} 100\% \\ &= 100.0261\% \text{ bk} \\ M &= \frac{729.8 - 383}{383} 100\% \\ &= 90.5483\% \text{ bk} \\ M &= \frac{701.3 - 383}{383} 100\% \\ &= 83.10705\% \text{ bk} \\ M &= \frac{691.7 - 383}{383} 100\% \\ &= 80.60052\% \text{ bk} \\ M &= \frac{681.4 - 383}{383} 100\% \\ &= 77.91123\% \text{ bk}\end{aligned}$$

Hari ke-dua

$$\begin{aligned}M &= \frac{637.4 - 383}{383} 100\% \\ &= 66.42298\% \text{ bk} \\ M &= \frac{626 - 383}{383} 100\% \\ &= 63.44648\% \text{ bk} \\ M &= \frac{606.6 - 383}{383} 100\% \\ &= 58.3812\% \text{ bk} \\ M &= \frac{591.3 - 383}{383} 100\% \\ &= 54.38642\% \text{ bk} \\ M &= \frac{581 - 383}{383} 100\% \\ &= 51.69713\% \text{ bk} \\ M &= \frac{571.1 - 383}{383} 100\% \\ &= 49.11227\% \text{ bk}\end{aligned}$$

$$\begin{aligned}
M &= \frac{562.3 - 383}{383} 100\% \\
&= 46.81462\% \text{ bk} \\
M &= \frac{549.5 - 383}{383} 100\% \\
&= 43.47258\% \text{ bk} \\
M &= \frac{542.8 - 383}{383} 100\% \\
&= 41.72324\% \text{ bk} \\
M &= \frac{538.9 - 383}{383} 100\% \\
&= 40.70496\% \text{ bk}
\end{aligned}$$

Hari ke-tiga

$$\begin{aligned}
M &= \frac{515.2 - 383}{383} 100\% \\
&= 34.51697\% \text{ bk} \\
M &= \frac{510.7 - 383}{383} 100\% \\
&= 33.34204\% \text{ bk} \\
M &= \frac{501.7 - 383}{383} 100\% \\
&= 30.99217\% \text{ bk} \\
M &= \frac{491.9 - 383}{383} 100\% \\
&= 28.43324\% \text{ bk} \\
M &= \frac{483.3 - 383}{383} 100\% \\
&= 26.18799\% \text{ bk} \\
M &= \frac{474.7 - 383}{383} 100\% \\
&= 23.94256\% \text{ bk} \\
M &= \frac{468 - 383}{468} 100\% \\
&= 22.19321\% \text{ bb} \\
M &= \frac{463.5 - 383}{383} 100\% \\
&= 21.01828\% \text{ bk} \\
M &= \frac{459.5 - 383}{383} 100\% \\
&= 19.97389\% \text{ bk} \\
M &= \frac{458.5 - 383}{383} 100\% \\
&= 19.71279\% \text{ bk}
\end{aligned}$$

Hari ke-empat

$$\begin{aligned}
M &= \frac{458.5 - 383}{383} 100\% \\
&= 19.71279\% \text{ bk} \\
M &= \frac{446.9 - 383}{383} 100\% \\
&= 16.68407\% \text{ bk}
\end{aligned}$$

$$\begin{aligned}
M &= \frac{441.7 - 383}{383} 100\% \\
&= 15.32637\% \text{ bk} \\
M &= \frac{437.7 - 383}{383} 100\% \\
&= 14.28198\% \text{ bk} \\
M &= \frac{432.6 - 383}{383} 100\% \\
&= 12.95039\% \text{ bk} \\
M &= \frac{428.5 - 383}{383} 100\% \\
&= 11.8799\% \text{ bk} \\
M &= \frac{425.4 - 383}{383} 100\% \\
&= 11.0705\% \text{ bk} \\
M &= \frac{423.8 - 402.2}{383} 100\% \\
&= 10.65274\% \text{ bk} \\
M &= \frac{423.6 - 383}{383} 100\% \\
&= 10.60052\% \text{ bk} \\
M &= \frac{422.9 - 383}{383} 100\% \\
&= 10.41775\% \text{ bk}
\end{aligned}$$

Hari ke-lima

$$\begin{aligned}
M &= \frac{442.9 - 383}{383} 100\% \\
&= 15.63969\% \text{ bk} \\
M &= \frac{419.9 - 383}{419.9} 100\% \\
&= 9.634465\% \text{ bk} \\
M &= \frac{416.2 - 383}{383} 100\% \\
&= 8.8668407\% \text{ bk} \\
M &= \frac{414 - 383}{383} 100\% \\
&= 8.093995\% \text{ bk} \\
M &= \frac{411.6 - 383}{383} 100\% \\
&= 7.467363\% \text{ bk} \\
M &= \frac{409.5 - 402.2}{383} 100\% \\
&= 6.91906\% \text{ bk}
\end{aligned}$$

**Dengan penutup**

**Satu Lapis (Pengulangan 1)**

Hari Pertama:

$$\begin{aligned} M &= \frac{538.3 - 219.1}{219.1} 100\% \\ &= 145.6869\% \text{ bk} \end{aligned}$$

$$\begin{aligned} M &= \frac{519.2 - 219.1}{219.1} 100\% \\ &= 136.9694\% \text{ bk} \end{aligned}$$

$$\begin{aligned} M &= \frac{491.5 - 219.1}{219.1} 100\% \\ &= 124.3268\% \text{ bb} \end{aligned}$$

$$\begin{aligned} M &= \frac{459.1 - 219.1}{219.1} 100\% \\ &= 109.539\% \text{ bb} \end{aligned}$$

$$\begin{aligned} M &= \frac{424.1 - 219.1}{219.1} 100\% \\ &= 93.56458\% \text{ bb} \end{aligned}$$

$$\begin{aligned} M &= \frac{390.8 - 219.1}{219.1} 100\% \\ &= 78.36604\% \text{ bk} \end{aligned}$$

$$\begin{aligned} M &= \frac{371.6 - 219.1}{219.1} 100\% \\ &= 69.60292\% \text{ bk} \end{aligned}$$

$$\begin{aligned} M &= \frac{354.7 - 219.1}{219.1} 100\% \\ &= 61.88955\% \text{ bk} \end{aligned}$$

$$\begin{aligned} M &= \frac{349 - 219.1}{219.1} 100\% \\ &= 59.288\% \text{ bk} \end{aligned}$$

$$\begin{aligned} M &= \frac{344.5 - 219.1}{219.1} 100\% \\ &= 57.23414\% \text{ bb} \end{aligned}$$

Hari Ke-dua

$$\begin{aligned} M &= \frac{319.4 - 219.1}{219.1} 100\% \\ &= 45.778183\% \text{ bk} \end{aligned}$$

$$\begin{aligned} M &= \frac{314.1 - 219.1}{219.1} 100\% \\ &= 43.359197\% \text{ bk} \end{aligned}$$

$$\begin{aligned} M &= \frac{306.9 - 219.1}{219.1} 100\% \\ &= 40.073026\% \text{ bk} \end{aligned}$$

$$\begin{aligned}
M &= \frac{300.4 - 219.1}{300.4} 100\% \\
&= 37.106344\% \text{ bk} \\
M &= \frac{296 - 219.1}{219.1} 100\% \\
&= 35.098129\% \text{ bk} \\
M &= \frac{292 - 219.1}{219.1} 100\% \\
&= 33.272478\% \text{ bk} \\
M &= \frac{289.6 - 219.1}{219.1} 100\% \\
&= 32.177088\% \text{ bk} \\
M &= \frac{278.1 - 219.1}{219.1} 100\% \\
&= 26.928343\% \text{ bk} \\
M &= \frac{276.1 - 219.1}{219.1} 100\% \\
&= 26.015518\% \text{ bk} \\
M &= \frac{275.2 - 219.1}{219.1} 100\% \\
&= 25.604747\% \text{ bk}
\end{aligned}$$

Hari ke-tiga

$$\begin{aligned}
M &= \frac{265.9 - 219.1}{219.1} 100\% \\
&= 21.36011\% \text{ bk} \\
M &= \frac{263.6 - 219.1}{219.1} 100\% \\
&= 20.31036\% \text{ bk} \\
M &= \frac{260.3 - 219.1}{260.3} 100\% \\
&= 18.8042\% \text{ bb} \\
M &= \frac{257.5 - 219.1}{219.1} 100\% \\
&= 17.52624\% \text{ bk} \\
M &= \frac{255.1 - 219.1}{219.1} 100\% \\
&= 16.43085\% \text{ bb} \\
M &= \frac{251.5 - 219.1}{219.1} 100\% \\
&= 14.78777\% \text{ bk} \\
M &= \frac{249.5 - 219.1}{219.1} 100\% \\
&= 13.87494\% \text{ bk} \\
M &= \frac{247 - 219.1}{219.1} 100\% \\
&= 12.73391\% \text{ bk} \\
M &= \frac{246 - 219.1}{219.1} 100\% \\
&= 12.2775\% \text{ bk} \\
M &= \frac{245.7 - 219.1}{219.1} 100\% \\
&= 12.14058\% \text{ bk}
\end{aligned}$$

Hari ke-empat

$$\begin{aligned} M &= \frac{245.7 - 219.1}{219.1} 100\% \\ &= 12.14058\% \text{ bk} \\ M &= \frac{241.6 - 219.1}{219.1} 100\% \\ &= 10.26928\% \text{ bk} \\ M &= \frac{239.9 - 219.1}{219.1} 100\% \\ &= 9.493382\% \text{ bk} \\ M &= \frac{238.9 - 219.1}{238.9} 100\% \\ &= 9.036969\% \text{ bb} \\ M &= \frac{236.6 - 219.1}{219.1} 100\% \\ &= 7.98722\% \text{ bk} \\ M &= \frac{234.9 - 219.1}{219.1} 100\% \\ &= 7.211319\% \text{ bk} \\ M &= \frac{234 - 219.1}{219.1} 100\% \\ &= 6.800548\% \text{ bk} \\ M &= \frac{233.9 - 219.1}{219.1} 100\% \\ &= 6.754906\% \text{ bk} \\ M &= \frac{233.8 - 219.1}{219.1} 100\% \\ &= 6.709265\% \text{ bk} \\ M &= \frac{233.6 - 219.1}{219.1} 100\% \\ &= 6.617983\% \text{ bk} \end{aligned}$$

Hari ke-lima

$$\begin{aligned} M &= \frac{233.6 - 219.1}{219.1} 100\% \\ &= 6.617983\% \text{ bk} \\ M &= \frac{232 - 219.1}{232} 100\% \\ &= 5.887723\% \text{ bb} \\ M &= \frac{230.5 - 219.1}{219.1} 100\% \\ &= 5.203104\% \text{ bk} \\ M &= \frac{229.8 - 219.1}{219.1} 100\% \\ &= 4.6883615\% \text{ bk} \\ M &= \frac{229 - 219.1}{219.1} 100\% \\ &= 4.518485\% \text{ bk} \\ M &= \frac{228.1 - 219.1}{219.1} 100\% \\ &= 4.107713\% \text{ bk} \end{aligned}$$



## Satu Lapis (Pengulangan 2)

Hari Pertama:

$$\begin{aligned} M &= \frac{539.9 - 225.3}{225.3} 100\% \\ &= 139.636\% \text{ bk} \\ M &= \frac{519.6 - 225.3}{225.3} 100\% \\ &= 130.6258\% \text{ bk} \\ M &= \frac{490.4 - 225.3}{225.3} 100\% \\ &= 117.6653\% \text{ bk} \\ M &= \frac{455.4 - 225.3}{225.3} 100\% \\ &= 102.1305\% \text{ bk} \\ M &= \frac{417.2 - 225.3}{225.3} 100\% \\ &= 85.17532\% \text{ bk} \\ M &= \frac{382 - 225.3}{225.3} 100\% \\ &= 69.55171\% \text{ bk} \\ M &= \frac{346.6 - 225.3}{225.3} 100\% \\ &= 53.83933\% \text{ bk} \\ M &= \frac{346.3 - 225.3}{225.3} 100\% \\ &= 53.70617\% \text{ bk} \\ M &= \frac{339.4 - 225.3}{225.3} 100\% \\ &= 50.64359\% \text{ bk} \\ M &= \frac{335.1 - 225.3}{225.3} 100\% \\ &= 48.73502\% \text{ bk} \end{aligned}$$

Hari ke-dua

$$\begin{aligned} M &= \frac{312.7 - 225.3}{225.3} 100\% \\ &= 38.79272\% \text{ bk} \\ M &= \frac{307.1 - 225.3}{225.3} 100\% \\ &= 36.30715 \text{ bk} \\ M &= \frac{300.6 - 225.3}{225.3} 100\% \\ &= 33.4221\% \text{ bk} \\ M &= \frac{294.4 - 225.3}{225.3} 100\% \\ &= 30.67022\% \text{ bk} \\ M &= \frac{290.7 - 225.3}{225.3} 100\% \\ &= 29.02796\% \text{ bk} \\ M &= \frac{287.3 - 225.3}{225.3} 100\% \\ &= 27.51886\% \text{ bk} \end{aligned}$$

$$\begin{aligned}
M &= \frac{285.8 - 225.3}{225.3} 100\% \\
&= 26.85308\% \text{ bk} \\
M &= \frac{284.4 - 225.3}{225.3} 100\% \\
&= 26.23169\% \text{ bk} \\
M &= \frac{283 - 225.3}{225.3} 100\% \\
&= 25.6103\% \text{ bk} \\
M &= \frac{282 - 225.3}{225.3} 100\% \\
&= 25.16644\% \text{ bk}
\end{aligned}$$

Hari ke-tiga

$$\begin{aligned}
M &= \frac{273.7 - 225.3}{225.3} 100\% \\
&= 21.48247\% \text{ bk} \\
M &= \frac{270.6 - 225.3}{225.3} 100\% \\
&= 20.10652\% \text{ bk} \\
M &= \frac{268.4 - 225.3}{225.3} 100\% \\
&= 19.13005\% \text{ bk} \\
M &= \frac{266.8 - 225.3}{225.3} 100\% \\
&= 18.41988\% \text{ bk} \\
M &= \frac{264 - 225.3}{225.3} 100\% \\
&= 17.1771\% \text{ bk} \\
M &= \frac{260.8 - 225.3}{225.3} 100\% \\
&= 15.75677\% \text{ bk} \\
M &= \frac{256 - 225.3}{225.3} 100\% \\
&= 13.62628\% \text{ bk} \\
M &= \frac{253.2 - 225.3}{225.3} 100\% \\
&= 12.38349\% \text{ bk} \\
M &= \frac{252.4 - 225.3}{225.3} 100\% \\
&= 12.02841\% \text{ bk} \\
M &= \frac{252.1 - 225.3}{225.3} 100\% \\
&= 11.89525\% \text{ bk}
\end{aligned}$$

Hari ke-empat

$$\begin{aligned}
M &= \frac{252.1 - 225.3}{225.3} 100\% \\
&= 11.89525\% \text{ bk} \\
M &= \frac{248.5 - 225.3}{225.3} 100\% \\
&= 10.29738\% \text{ bk} \\
M &= \frac{247.2 - 225.3}{225.3} 100\%
\end{aligned}$$

$$\begin{aligned}
 &= 9.720373 \% \text{ bk} \\
 M &= \frac{245.4 - 225.3}{225.3} 100\% \\
 &= 8.921438\% \text{ bk}
 \end{aligned}$$

$$\begin{aligned}
 M &= \frac{244.9 - 225.3}{225.3} 100\% \\
 &= 8.699512\% \text{ bk}
 \end{aligned}$$

$$\begin{aligned}
 M &= \frac{243.4 - 225.3}{225.3} 100\% \\
 &= 8.033733\% \text{ bk}
 \end{aligned}$$

$$\begin{aligned}
 M &= \frac{242.1 - 225.3}{225.3} 100\% \\
 &= 7.456724\% \text{ bk}
 \end{aligned}$$

$$\begin{aligned}
 M &= \frac{241.9 - 225.3}{225.3} 100\% \\
 &= 7.367954\% \text{ bk}
 \end{aligned}$$

$$\begin{aligned}
 M &= \frac{241.8 - 225.3}{225.3} 100\% \\
 &= 7.323569\% \text{ bk}
 \end{aligned}$$

$$\begin{aligned}
 M &= \frac{241.8 - 225.3}{225.3} 100\% \\
 &= 7.323569\% \text{ bk}
 \end{aligned}$$

Hari ke-lima

$$\begin{aligned}
 M &= \frac{241.8 - 225.3}{225.3} 100\% \\
 &= 7323569\% \text{ bk}
 \end{aligned}$$

$$\begin{aligned}
 M &= \frac{240 - 225.3}{225.3} 100\% \\
 &= 6.524634\% \text{ bk}
 \end{aligned}$$

$$\begin{aligned}
 M &= \frac{239 - 225.3}{225.3} 100\% \\
 &= 6.080781\% \text{ bk}
 \end{aligned}$$

$$\begin{aligned}
 M &= \frac{238 - 225.3}{225.3} 100\% \\
 &= 5.636929\% \text{ bk}
 \end{aligned}$$

$$\begin{aligned}
 M &= \frac{237.1 - 225.3}{225.3} 100\% \\
 &= 5.237461\% \text{ bk}
 \end{aligned}$$

$$\begin{aligned}
 M &= \frac{237.1 - 225.3}{225.3} 100\% \\
 &= 5.237461\% \text{ bk}
 \end{aligned}$$

### **Tiga Lapis (Pengulangan 1)**

Hari Pertama:

$$\begin{aligned}
 M &= \frac{1039.9 - 363.1}{363.1} 100\% \\
 &= 186.3949\% \text{ bk}
 \end{aligned}$$

$$\begin{aligned}
 M &= \frac{885.1 - 363.1}{363.1} 100\% \\
 &= 143.762\% \text{ bk}
 \end{aligned}$$

$$\begin{aligned}
M &= \frac{849.3 - 363.1}{363.1} 100\% \\
&= 133.9025\% \text{ bk} \\
M &= \frac{815 - 363.1}{363.1} 100\% \\
&= 124.4561\% \text{ bk} \\
M &= \frac{776.4 - 363.1}{363.1} 100\% \\
&= 113.8254\% \text{ bk} \\
M &= \frac{735.5 - 363.1}{363.1} 100\% \\
&= 102.5613\% \text{ bk} \\
M &= \frac{704.7 - 363.1}{363.1} 100\% \\
&= 94.07877\% \text{ bk} \\
M &= \frac{677.3 - 363.1}{363.1} 100\% \\
&= 86.53264\% \text{ bk} \\
M &= \frac{662.8 - 363.1}{363.1} 100\% \\
&= 82.53925\% \text{ bk} \\
M &= \frac{653.6 - 363.1}{363.1} 100\% \\
&= 80.00551\% \text{ bk}
\end{aligned}$$

Hari ke-dua

$$\begin{aligned}
M &= \frac{610.6 - 363.1}{363.1} 100\% \\
&= 68.16304 \text{ bk} \\
M &= \frac{599.5 - 363.1}{363.1} 100\% \\
&= 65.10603\% \text{ bk} \\
M &= \frac{585 - 363.1}{363.1} 100\% \\
&= 61.11264\% \text{ bk} \\
M &= \frac{568.4 - 363.1}{363.1} 100\% \\
&= 56.5409\% \text{ bk} \\
M &= \frac{555.9 - 363.1}{363.1} 100\% \\
&= 53.09832\% \text{ bk} \\
M &= \frac{545.9 - 363.1}{363.1} 100\% \\
&= 50.34426\% \text{ bk} \\
M &= \frac{537.1 - 363.1}{363.1} 100\% \\
&= 47.92068\% \text{ bk} \\
M &= \frac{525.1 - 363.1}{363.1} 100\% \\
&= 44.61581\% \text{ bk} \\
M &= \frac{517.3 - 363.1}{363.1} 100\% \\
&= 42.46764\% \text{ bk}
\end{aligned}$$

$$M = \frac{513.4 - 402.2}{363.1} 100\% \\ = 41.39356\% \text{ bk}$$

Hari ke-tiga

$$M = \frac{491.4 - 363.1}{363.1} 100\% \\ = 35.33462\% \text{ bk}$$

$$M = \frac{486.6 - 363.1}{363.1} 100\% \\ = 34.01267\% \text{ bk}$$

$$M = \frac{477.6 - 363.1}{363.1} 100\% \\ = 31.53401\% \text{ bk}$$

$$M = \frac{468.5 - 363.1}{363.1} 100\% \\ = 29.02782\% \text{ bk}$$

$$M = \frac{460.4 - 363.1}{363.1} 100\% \\ = 26.79703\% \text{ bk}$$

$$M = \frac{451.5 - 363.1}{363.1} 100\% \\ = 24.34591\% \text{ bk}$$

$$M = \frac{446.5 - 363.1}{363.1} 100\% \\ = 22.96888\% \text{ bk}$$

$$M = \frac{439.2 - 363.1}{363.1} 100\% \\ = 20.95841\% \text{ bk}$$

$$M = \frac{435.8 - 363.1}{363.1} 100\% \\ = 20.02203\% \text{ bk}$$

$$M = \frac{435.8 - 363.1}{363.1} 100\% \\ = 19.71909\% \text{ bk}$$

Hari ke-empat

$$M = \frac{434.7 - 363.1}{363.1} 100\% \\ = 19.71909\% \text{ bk}$$

$$M = \frac{423 - 363.1}{363.1} 100\% \\ = 16.49683\% \text{ bk}$$

$$M = \frac{413 - 363.1}{363.1} 100\% \\ = 13.74277\% \text{ bk}$$

$$M = \frac{412.7 - 363.1}{363.1} 100\% \\ = 13.66015\% \text{ bk}$$

$$M = \frac{407.9 - 363.1}{363.1} 100\% \\ = 12.3382\% \text{ bk}$$

$$\begin{aligned}
M &= \frac{402.4 - 363.1}{363.1} 100\% \\
&= 10.82346\% \text{ bk} \\
M &= \frac{399.4 - 363.1}{363.1} 100\% \\
&= 9.997246\% \text{ bk} \\
M &= \frac{398.1 - 363.1}{363.1} 100\% \\
&= 9.639218\% \text{ bk} \\
M &= \frac{398.1 - 363.1}{363.1} 100\% \\
&= 9.639218\% \text{ b} \\
M &= \frac{397 - 363.1}{363.1} 100\% \\
&= 9.336217 \text{ bk}
\end{aligned}$$

Hari ke-lima

$$\begin{aligned}
M &= \frac{397 - 363.1}{363.1} 100\% \\
&= 9.336217\% \text{ bk} \\
M &= \frac{359.2 - 363.1}{363.1} 100\% \\
&= 8.950702\% \text{ bk} \\
M &= \frac{356.3 - 363.1}{363.1} 100\% \\
&= 7.95924\% \text{ bk} \\
M &= \frac{354.8 - 363.1}{363.1} 100\% \\
&= 7.435968\% \text{ bk} \\
M &= \frac{352.8 - 363.1}{363.1} 100\% \\
&= 6.830074\% \text{ bk} \\
M &= \frac{351 - 363.1}{363.1} 100\% \\
&= 6.361884\% \text{ bk}
\end{aligned}$$

### **Tiga Lapis (Pengulangan 2)**

Hari Pertama:

$$\begin{aligned}
M &= \frac{1038.9 - 330.5}{330.5} 100\% \\
&= 214.6445\% \text{ bk} \\
M &= \frac{815.8 - 330.5}{330.5} 100\% \\
&= 146.8381\% \text{ bk} \\
M &= \frac{781 - 330.5}{330.5} 100\% \\
&= 136.3086\% \text{ bk} \\
M &= \frac{745.3 - 330.5}{330.5} 100\% \\
&= 125.5068\% \text{ bk} \\
M &= \frac{701.3 - 330.5}{330.5} 100\%
\end{aligned}$$

$$\begin{aligned}
&= 112.1936\% \text{ bk} \\
M &= \frac{667.4 - 330.5}{330.5} 100\% \\
&= 101.9365\% \text{ bk} \\
M &= \frac{644.1 - 330.5}{330.5} 100\% \\
&= 94.88654\% \text{ bk} \\
M &= \frac{619 - 330.5}{330.5} 100\% \\
&= 87.29198\% \text{ bk} \\
M &= \frac{608.4 - 330.5}{330.5} 100\% \\
&= 84.08472 \text{ bk} \\
M &= \frac{598.9 - 330.5}{330.5} 100\% \\
&= 81.2029\% \text{ bk}
\end{aligned}$$

Hari ke-dua

$$\begin{aligned}
M &= \frac{555.3 - 330.5}{330.5} 100\% \\
&= 68.01815\% \text{ bk} \\
M &= \frac{543.1 - 330.5}{330.5} 100\% \\
&= 64.32678\% \text{ bk} \\
M &= \frac{519.7 - 330.5}{330.5} 100\% \\
&= 57.2466\% \text{ bk} \\
M &= \frac{506.3 - 330.5}{330.5} 100\% \\
&= 53.19213\% \text{ bk} \\
M &= \frac{497 - 330.5}{330.5} 100\% \\
&= 50.37821\% \text{ bk} \\
M &= \frac{488.1 - 330.5}{330.5} 100\% \\
&= 47.68533\% \text{ bk} \\
M &= \frac{481 - 330.5}{330.5} 100\% \\
&= 45.53707\% \text{ bk} \\
M &= \frac{468.8 - 330.5}{330.5} 100\% \\
&= 41.84569\% \text{ bk} \\
M &= \frac{462.5 - 330.5}{330.5} 100\% \\
&= 39.93949\% \text{ bk} \\
M &= \frac{457.2 - 330.5}{330.5} 100\% \\
&= 38.33585\% \text{ bk}
\end{aligned}$$

Hari ke-tiga

$$M = \frac{439.7 - 330.5}{330.5} 100\%$$

$$\begin{aligned}
&= 33.04085\% \text{ bk} \\
M &= \frac{434.8 - 330.5}{330.5} 100\% \\
&= 31.55825\% \text{ bk} \\
M &= \frac{427.9 - 330.5}{330.5} 100\% \\
&= 29.4705\% \text{ bk} \\
M &= \frac{419.4 - 330.5}{330.5} 100\% \\
&= 26.89864\% \text{ bk} \\
M &= \frac{412.9 - 330.5}{330.5} 100\% \\
&= 24.93192\% \text{ bk} \\
M &= \frac{406 - 330.5}{330.5} 100\% \\
&= 22.84418\% \text{ bk} \\
M &= \frac{404.8 - 330.5}{330.5} 100\% \\
&= 45.53707\% \text{ bk} \\
M &= \frac{398.3 - 330.5}{330.5} 100\% \\
&= 41.84569\% \text{ bk} \\
M &= \frac{396.1 - 330.5}{330.5} 100\% \\
&= 39.93949\% \text{ bk} \\
M &= \frac{395 - 330.5}{330.5} 100\% \\
&= 38.33585\% \text{ bk}
\end{aligned}$$

Hari ke-empat

$$\begin{aligned}
M &= \frac{395 - 330.5}{330.5} 100\% \\
&= 19.51589\% \text{ bk} \\
M &= \frac{383.9 - 330.5}{383.9} 100\% \\
&= 16.15734\% \text{ bk} \\
M &= \frac{378.8 - 330.5}{330.5} 100\% \\
&= 14.61422\% \text{ bk} \\
M &= \frac{374.6 - 330.5}{330.5} 100\% \\
&= 13.34342\% \text{ bk} \\
M &= \frac{370.7 - 330.5}{330.5} 100\% \\
&= 12.16339\% \text{ bk} \\
M &= \frac{367.6 - 330.5}{330.5} 100\% \\
&= 11.22542\% \text{ bk} \\
M &= \frac{364.7 - 330.5}{330.5} 100\% \\
&= 10.34796\% \text{ bk} \\
M &= \frac{363 - 330.5}{330.5} 100\%
\end{aligned}$$



$$\begin{aligned}
 &= 9.833585\% \text{ bk} \\
 M &= \frac{363 - 330.5}{330.5} 100\% \\
 &= 9.833585\% \text{ bk} \\
 M &= \frac{361.9 - 330.5}{330.5} 100\% \\
 &= 9.500756\% \text{ bk}
 \end{aligned}$$

Hari ke-lima

$$\begin{aligned}
 M &= \frac{361.9 - 330.5}{330.5} 100\% \\
 &= 9.500756\% \text{ bk} \\
 M &= \frac{359.2 - 330.5}{330.5} 100\% \\
 &= 8.683812\% \text{ bk} \\
 M &= \frac{356.3 - 330.5}{330.5} 100\% \\
 &= 7.806354\% \text{ bk} \\
 M &= \frac{354.8 - 330.5}{330.5} 100\% \\
 &= 7.352496\% \text{ bk} \\
 M &= \frac{352.8 - 330.5}{330.5} 100\% \\
 &= 6.747352\% \text{ bk} \\
 M &= \frac{351 - 330.5}{330.5} 100\% \\
 &= 6.202723\% \text{ bk}
 \end{aligned}$$

### Lampiran 3. Perhitungan Laju Pengeringan

$$LP = \frac{W_m - W_t}{W_0 \times 9\text{jam}}$$

**Tanpa penutup**

**Satu Lapis (Pengulangan 1)**

$$\begin{aligned} LP &= \frac{540.8 - 340.1}{228.4 \times 9} \\ &= 7.9085 \text{ kg.H}_2\text{O/jam} \end{aligned}$$

$$\begin{aligned} LP &= \frac{316.6 - 283.8}{228.4 \times 9} \\ &= 1.292 \text{ kg.H}_2\text{O/jam} \end{aligned}$$

$$\begin{aligned} LP &= \frac{274.4 - 256.9}{228.4 \times 9} \\ &= 0.6896 \text{ kg.H}_2\text{O/jam} \end{aligned}$$

$$\begin{aligned} LP &= \frac{256.9 - 245.6}{228.4 \times 9} \\ &= 0.44527 \text{ kg.H}_2\text{O/jam} \end{aligned}$$

$$\begin{aligned} LP &= \frac{245.6 - 240.6}{228.4 \times 9} \\ &= 0.197 \text{ kg.H}_2\text{O/jam} \end{aligned}$$

**Satu Lapis (Pengulangan 2)**

$$\begin{aligned} LP &= \frac{539.7 - 342.7}{228.1 \times 9} \\ &= 7.7729 \text{ kg.H}_2\text{O/jam} \end{aligned}$$

$$\begin{aligned} LP &= \frac{321.2 - 285.1}{228.1 \times 9} \\ &= 1.424 \text{ kg.H}_2\text{O/jam} \end{aligned}$$

$$\begin{aligned} LP &= \frac{275.2 - 256.9}{228.1 \times 9} \\ &= 0.7221 \text{ kg.H}_2\text{O/jam} \end{aligned}$$

$$\begin{aligned} LP &= \frac{256.9 - 244.7}{228.1 \times 9} \\ &= 0.48137 \text{ kg.H}_2\text{O/jam} \end{aligned}$$

$$\begin{aligned} LP &= \frac{246.7 - 240.8}{228.1 \times 9} \\ &= 0.2328 \text{ kg.H}_2\text{O/jam} \end{aligned}$$

**Tiga Lapis (Pengulangan 1)**

$$\begin{aligned} LP &= \frac{1038.9 - 738.4}{402.2 \times 9} \\ &= 6.7243 \text{ kg.H}_2\text{O/jam} \end{aligned}$$

$$\begin{aligned} LP &= \frac{687.5 - 581.4}{402.2 \times 9} \\ &= 2.3742 \text{ kg.H}_2\text{O/jam} \end{aligned}$$

$$\begin{aligned} LP &= \frac{556.2 - 488.2}{402.2 \times 9} \\ &= 1.5216 \text{ kg.H}_2\text{O/jam} \end{aligned}$$

$$\begin{aligned} \text{LP} &= \frac{488.2 - 446.6}{402.2 \times 9} \\ &= 0.9309 \text{ kg.H}_2\text{O/jam} \end{aligned}$$

$$\begin{aligned} \text{LP} &= \frac{446.6 - 431.1}{402.2 \times 9} \\ &= 0.3468 \text{ kg.H}_2\text{O/jam} \end{aligned}$$

### **Tiga Lapis (Pengulangan 2)**

$$\begin{aligned} \text{LP} &= \frac{1038.9 - 681.4}{383 \times 9} \\ &= 8.4008 \text{ kg.H}_2\text{O/jam} \end{aligned}$$

$$\begin{aligned} \text{LP} &= \frac{637.4 - 458.5}{383 \times 9} \\ &= 2.3146 \text{ kg.H}_2\text{O/jam} \end{aligned}$$

$$\begin{aligned} \text{LP} &= \frac{515.2 - 458.5}{383 \times 9} \\ &= 1.3324 \text{ kg.H}_2\text{O/jam} \end{aligned}$$

$$\begin{aligned} \text{LP} &= \frac{458.5 - 422.9}{383 \times 9} \\ &= 0.8366 \text{ kg.H}_2\text{O/jam} \end{aligned}$$

$$\begin{aligned} \text{LP} &= \frac{442.9 - 409.5}{383 \times 9} \\ &= 0.7849 \text{ kg.H}_2\text{O/jam} \end{aligned}$$

### **Dengan penutup Satu Lapis (Pengulangan 1)**

$$\begin{aligned} \text{LP} &= \frac{538.3 - 344.5}{219.1 \times 9} \\ &= 7.9607 \text{ kg.H}_2\text{O/jam} \end{aligned}$$

$$\begin{aligned} \text{LP} &= \frac{319.4 - 275.2}{219.1 \times 9} \\ &= 1.816 \text{ kg.H}_2\text{O/jam} \end{aligned}$$

$$\begin{aligned} \text{LP} &= \frac{265.9 - 245.7}{219.1 \times 9} \\ &= 0.8298 \text{ kg.H}_2\text{O/jam} \end{aligned}$$

$$\begin{aligned} \text{LP} &= \frac{245.7 - 233.6}{219.1 \times 9} \\ &= 0.49703 \text{ kg.H}_2\text{O/jam} \end{aligned}$$

$$\begin{aligned} \text{LP} &= \frac{233.6 - 228.1}{219.1 \times 9} \\ &= 0.2259 \text{ kg.H}_2\text{O/jam} \end{aligned}$$

### **Satu Lapis (Pengulangan 2)**

$$\begin{aligned} \text{LP} &= \frac{539.9 - 335.1}{225.3 \times 9} \\ &= 8.1811 \text{ kg.H}_2\text{O/jam} \end{aligned}$$

$$\begin{aligned} \text{LP} &= \frac{312.7 - 282}{225.3 \times 9} \\ &= 1.226 \text{ kg.H}_2\text{O/jam} \end{aligned}$$

$$\begin{aligned} \text{LP} &= \frac{273.7 - 252.1}{225.3 \times 9} \end{aligned}$$

$$\begin{aligned} &= 0.8628 \text{ kg.H}_2\text{O/jam} \\ \text{LP} &= \frac{252.1 - 241.8}{225.3 \times 9} \\ &= 0.41145 \text{ kg.H}_2\text{O/jam} \\ \text{LP} &= \frac{241.8 - 237.1}{225.3 \times 9} \\ &= 0.1877 \text{ kg.H}_2\text{O/jam} \end{aligned}$$

### **Tiga Lapis (Pengulangan 1)**

$$\begin{aligned} \text{LP} &= \frac{1039.9 - 653.6}{363.1 \times 9} \\ &= 9.575 \text{ kg.H}_2\text{O/jam} \\ \text{LP} &= \frac{610.6 - 513.4}{363.1 \times 9} \\ &= 2.4093 \text{ kg.H}_2\text{O/jam} \\ \text{LP} &= \frac{491.4 - 434.7}{363.1 \times 9} \\ &= 1.4054 \text{ kg.H}_2\text{O/jam} \\ \text{LP} &= \frac{434.7 - 397}{363.1 \times 9} \\ &= 0.9345 \text{ kg.H}_2\text{O/jam} \\ \text{LP} &= \frac{397 - 431.1}{363.1 \times 9} \\ &= 0.2677 \text{ kg.H}_2\text{O/jam} \end{aligned}$$

### **Tiga Lapis (Pengulangan 2)**

$$\begin{aligned} \text{LP} &= \frac{1039.9 - 598.9}{330.5 \times 9} \\ &= 12.009 \text{ kg.H}_2\text{O/jam} \\ \text{LP} &= \frac{555.3 - 457.2}{330.5 \times 9} \\ &= 2.6714 \text{ kg.H}_2\text{O/jam} \\ \text{LP} &= \frac{515.2 - 458.5}{330.5 \times 9} \\ &= 1.2172 \text{ kg.H}_2\text{O/jam} \\ \text{LP} &= \frac{458.5 - 422.9}{330.5 \times 9} \\ &= 0.9014 \text{ kg.H}_2\text{O/jam} \\ \text{LP} &= \frac{361.9 - 351}{330.5 \times 9} \\ &= 0.2968 \text{ kg.H}_2\text{O/jam} \end{aligned}$$

#### Lampiran 4. Perhitungan *Moisture Ratio* (MR)

$$MR = \frac{M_t}{M_o}$$

##### Tanpa penutup

##### Satu Lapis (Pengulangan 1)

$$\begin{aligned} MR &= \frac{1}{0.569} \\ &= 0.7581 \% \\ MR &= \frac{0.4824}{0.338} \\ &= 0.398 \% \\ MR &= \frac{0.2903}{0.1921} \\ &= 0.2324 \% \\ MR &= \frac{0.1921}{0.1213} \\ &= 0.1426 \% \\ MR &= \frac{0.1213}{0.0878} \\ &= 0.1028 \% \end{aligned}$$

##### Satu Lapis (Pengulangan 2)

$$\begin{aligned} MR &= \frac{1}{0.579} \\ &= 0.7635 \% \\ MR &= \frac{0.5019}{0.3462} \\ &= 0.412 \% \\ MR &= \frac{0.29636}{0.19412} \\ &= 0.239 \% \\ MR &= \frac{0.1941}{0.1175} \\ &= 0.14139 \% \\ MR &= \frac{0.1306}{0.0913} \\ &= 0.1071 \% \end{aligned}$$

##### Tiga Lapis (Pengulangan 1)

$$\begin{aligned} MR &= \frac{1}{0.7884} \\ &= 0.9098 \% \\ MR &= \frac{0.7186}{0.5337} \\ &= 0.6173 \% \\ MR &= \frac{0.4794}{0.1721} \end{aligned}$$

$$\begin{aligned} &= 0.3845 \% \\ \text{MR} &= \frac{0.305}{0.1721} \\ &= 0.2149 \% \\ \text{MR} &= \frac{0.1721}{0.1161} \\ &= 0.1409 \% \end{aligned}$$

### **Tiga Lapis (Pengulangan 2)**

$$\begin{aligned} \text{MR} &= \frac{1}{0.7583} \\ &= 0.8966 \% \\ \text{MR} &= \frac{0.6911}{0.5009} \\ &= 0.5859 \% \\ \text{MR} &= \frac{0.4225}{0.2778} \\ &= 0.3553 \% \\ \text{MR} &= \frac{0.2851}{0.1634} \\ &= 0.203 \% \\ \text{MR} &= \frac{0.2342}{0.1121} \\ &= 0.1478 \% \end{aligned}$$

### **Dengan penutup**

#### **Satu Lapis (Pengulangan 1)**

$$\begin{aligned} \text{MR} &= \frac{1}{0.619} \\ &= 0.7995 \% \\ \text{MR} &= \frac{0.5342}{0.3468} \\ &= 0.434 \% \\ \text{MR} &= \frac{0.2994}{0.1842} \\ &= 0.2338 \% \\ \text{MR} &= \frac{0.1842}{0.1056} \\ &= 0.13 \% \\ \text{MR} &= \frac{0.1056}{0.0671} \\ &= 0.084 \% \end{aligned}$$

#### **Satu Lapis (Pengulangan 2)**

$$\begin{aligned} \text{MR} &= \frac{1}{0.557} \\ &= 0.7533 \% \\ \text{MR} &= \frac{0.4755}{0.342} \\ &= 0.391 \% \end{aligned}$$

$$\begin{aligned} \text{MR} &= \frac{0.30082}{0.18084} \\ &= 0.2359 \% \end{aligned}$$

$$\begin{aligned} \text{MR} &= \frac{0.1808}{0.1161} \\ &= 0.13593 \% \end{aligned}$$

$$\begin{aligned} \text{MR} &= \frac{0.1161}{0.0847} \\ &= 0.0963 \% \end{aligned}$$

### **Tiga Lapis (Pengulangan 1)**

$$\begin{aligned} \text{MR} &= \frac{1}{0.7561} \\ &= 0.8934 \% \end{aligned}$$

$$\begin{aligned} \text{MR} &= \frac{0.6895}{0.498} \\ &= 0.58613 \% \end{aligned}$$

$$\begin{aligned} \text{MR} &= \frac{0.4442}{0.2802} \\ &= 0.3536 \% \end{aligned}$$

$$\begin{aligned} \text{MR} &= \frac{0.2802}{0.1453} \\ &= 0.1883 \% \end{aligned}$$

$$\begin{aligned} \text{MR} &= \frac{0.1453}{0.1018} \\ &= 0.1231 \% \end{aligned}$$

### **Tiga Lapis (Pengulangan 2)**

$$\begin{aligned} \text{MR} &= \frac{1}{0.7624} \\ &= 0.9019 \% \end{aligned}$$

$$\begin{aligned} \text{MR} &= \frac{0.6887}{0.4714} \\ &= 0.5675 \% \end{aligned}$$

$$\begin{aligned} \text{MR} &= \frac{0.4225}{0.2778} \\ &= 0.3396 \% \end{aligned}$$

$$\begin{aligned} \text{MR} &= \frac{0.2778}{0.1476} \\ &= 0.1899 \% \end{aligned}$$

$$\begin{aligned} \text{MR} &= \frac{0.1476}{0.0994} \\ &= 0.1217 \% \end{aligned}$$

## Lampiran 5. Dokumentasi Penelitian



(a) Pemetikan Buah Kakao



(b) Proses Penjemuran dan Pembalikan Biji Kakao



(c) Sample Biji Kakao Setelah di Oven



