### CONSENSUS MEAN ANALYSIS

#### Summary of All the Data

- **Response Variable:** Y1
- **Total Number of Observations:** 46
- **Grand Mean:** 0.5722609E+02
- **Grand Standard Deviation:** 0.1427419E+01
- **Number of Labs:** 5
## Summary Statistics by Lab

<table>
<thead>
<tr>
<th>Lab ID</th>
<th>N(I)</th>
<th>Mean</th>
<th>Variance</th>
<th>Standard Deviation</th>
<th>Variance of the Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>36</td>
<td>0.5675278E+02</td>
<td>0.5522779E+00</td>
<td>0.7431540E+00</td>
<td>0.1534105E-01</td>
</tr>
<tr>
<td>2</td>
<td>4</td>
<td>0.5842500E+02</td>
<td>0.2822500E+01</td>
<td>0.1680030E+01</td>
<td>0.7056251E+00</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>0.5650000E+02</td>
<td>0.1799991E+00</td>
<td>0.4242630E+00</td>
<td>0.8999954E-01</td>
</tr>
<tr>
<td>4</td>
<td>2</td>
<td>0.6010000E+02</td>
<td>0.2000015E-01</td>
<td>0.1414219E+00</td>
<td>0.1000008E-01</td>
</tr>
<tr>
<td>5</td>
<td>2</td>
<td>0.6120000E+02</td>
<td>0.7200009E+00</td>
<td>0.8485287E+00</td>
<td>0.3600005E+00</td>
</tr>
</tbody>
</table>

### Additional Summary Statistics

- Grand Mean: 0.5722609E+02
- Within Lab (Pooled) SD: 0.8369111E+00
- Within Lab (Pooled) Variance: 0.7004202E+00
- Minimum Lab Mean: 0.5650000E+02
- Maximum Lab Mean: 0.6120000E+02

THE FOLLOWING METHODS ARE CONSIDERED MOST APPROPRIATE FOR A LARGER NUMBER OF LABS (> 5)

### Method: Modified Mandel-Paule

- Estimate of (Unscaled) Consensus Mean: 0.5855906E+02
- Estimate of (Scaled) Consensus Mean: 0.4380985E+00
- Between Lab Variance (Unscaled): 0.3204605E+01
- Between Lab SD (Unscaled): 0.1790141E+01
- Between Lab Variance (Scaled): 0.1450706E+00
- Normal PPF of 0.975: 0.1959965E+01
- Expanded Uncertainty (Unscaled): 0.8338748E+00
- Lower Limit for 95% Confidence Interval: 0.5692470E+02
- Upper Limit for 95% Confidence Interval: 0.6019343E+02
Method: Mandel-Paule

- Estimate of (Unscaled) Consensus Mean: 0.5856632E+02
- Estimate of (Scaled) Consensus Mean: 0.4396437E+00
- Between Lab Variance (Unscaled): 0.4046566E+01
- Between Lab SD (Unscaled): 0.2011608E+01
- Between Lab Variance (Scaled): 0.1831857E+00
- Normal PPF of 0.975: 0.1959965E+01
- Expanded Uncertainty (Unscaled): 0.8317266E+00
- Lower Limit for 95% Confidence Interval: 0.5693617E+02
- Upper Limit for 95% Confidence Interval: 0.6019648E+02

Method: Ruhkin-Vangel Maximum Likelihood

- Estimate of (Unscaled) Consensus Mean: 0.5855346E+02
- Estimate of (Scaled) Consensus Mean: 0.4369068E+00
- Between Lab Variance (Unscaled): 0.3231233E+01
- Between Lab SD (Unscaled): 0.1797563E+01
- Between Lab Variance (Scaled): 0.1462760E+00
- Normal PPF of 0.975: 0.1959965E+01
- Expanded Uncertainty (Unscaled): 0.8306379E+00
- Lower Limit for 95% Confidence Interval: 0.5692544E+02
- Upper Limit for 95% Confidence Interval: 0.6018148E+02

THE FOLLOWING METHODS ARE CONSIDERED MOST APPROPRIATE FOR A SMALL NUMBER OF LABORATORIES ( <= 5)

Method: Mean of Means (T)

- Mean of Lab Means: 0.5859555E+02
- Standard Deviation of Lab Means: 0.2053213E+01
- Standard Uncertainty: 0.9182249E+00
- Degrees of Freedom: 4
- T Percent Point Value (alpha = 0.05): 0.2776446E+01
- Lower Limit for 95% Confidence Interval: 0.5604615E+02
- Upper Limit for 95% Confidence Interval: 0.6114495E+02
Method: BOB (Type B on Bias)

Estimate of Consensus Mean: 0.5859555E+02
Within Lab Uncertainty: 0.2173445E+00
Between Lab Uncertainty: 0.1356772E+01
Expanded Uncertainty: 0.2748141E+01
Lower Limit for 95% Confidence Interval: 0.5584741E+02
Upper Limit for 95% Confidence Interval: 0.6134370E+02

Method: Schiller-Eberhardt

Estimate of Consensus Mean: 0.5859083E+02
Estimate of Variance of Mean: 0.1691788E-01
Bias Allowance: 0.2609169E+01
Sigmah (Heterogeneity): 0.0000000E+00
Degrees of Freedom: 7
T Percent Point Value (alpha = 0.05): 0.2364576E+01
Expanded Uncertainty (Unscaled): 0.2916726E+01
Lower Limit for 95% Confidence Interval: 0.5567410E+02
Upper Limit for 95% Confidence Interval: 0.6150755E+02

THE FOLLOWING METHODS ARE INCLUDED FOR COMPARISON OR HISTORICAL INTEREST ONLY.

Method: Graybill-Deal

Estimate of Consensus Mean: 0.5867329E+02
Estimate of Variance of Mean: 0.1046008E-01

Method: Grand Mean (T, No Lab Effect)

Mean of All Data: 0.5722609E+02
Standard Uncertainty (SD/SQRT(N)): NaN
Degrees of Freedom: 4
T Percent Point Value (alpha = 0.05): 0.2014104E+01
Lower Limit for 95% Confidence Interval: 0.5680219E+02
Upper Limit for 95% Confidence Interval: 0.5764998E+02
Summary of Consensus Means Analysis

<table>
<thead>
<tr>
<th>Method</th>
<th>Consensus Mean</th>
<th>Lower Interval</th>
<th>Upper Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean of Means (T)</td>
<td>58.59555</td>
<td>56.04615</td>
<td>61.14495</td>
</tr>
<tr>
<td>BOB</td>
<td>58.59555</td>
<td>55.84741</td>
<td>61.34370</td>
</tr>
<tr>
<td>Schiller-Eberhardt</td>
<td>58.59083</td>
<td>55.67410</td>
<td>61.50755</td>
</tr>
<tr>
<td>Modified Mandel-Paule</td>
<td>58.55906</td>
<td>56.92470</td>
<td>60.19343</td>
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<tr>
<td>Mandel-Paule</td>
<td>58.56632</td>
<td>56.93617</td>
<td>60.19648</td>
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<tr>
<td>Maximum Likelihood</td>
<td>58.55346</td>
<td>56.92544</td>
<td>60.18148</td>
</tr>
<tr>
<td>Grand Mean (T)</td>
<td>57.22609</td>
<td>56.80219</td>
<td>57.64998</td>
</tr>
</tbody>
</table>

![Mean Plot Y1 X](image1)

![SD Plot Y1 X](image2)

![Box Plot Y1 X](image3)