The chick yield vs. moisture loss box

In hatchery management, achieving the right balance between chick yield and moisture loss is essential for optimising chick quality and hatchery performance.

The Chick Yield vs. Moisture Loss Box is a powerful tool for visualising this balance. It can be easily generated using the scatter plot function within Excel. Plotting one against the other will allow the hatchery manager to assess if adjustments are needed.

Interpreting the Chart

Vertical Axis (Y-axis): Represents chick yield percentage, which is the weight of the chick as a percentage of the initial egg weight. Horizontal Axis (X-axis): Represents the percentage of moisture loss during incubation, which is crucial for proper embryonic development.

In both cases, the value plotted should be the mean for the batch of eggs, rather than individual tray values. The chart features four quadrants separated by red lines, creating a central green box indicating the target zone. This zone signifies the optimal ranges for both chick yield and moisture loss. When points fall within this green box, it indicates that conditions are ideal, reflecting optimal hatchery performance and chick quality.

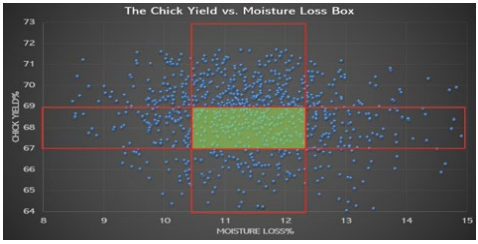

***Chart 1** shows moisture loss vs chick yield values from 12 months of data collection in a hatchery.*

Analysis of Data Points in the Chart

Some variability around the target is normal, and in this case, it is reasonably symmetrical.

Above the Target Box: Points above the target box indicate a higher chick yield, suggesting that chicks are being pulled too green. The data set plotted here suggests that chicks are pulled too early more often than they are pulled late.

Below the Target Box: Points below the target box indicate a lower chick yield, possibly due to chicks being left in the hatcher for too long after they emerge. Values below 65% are associated with poor broiler performance.

Left of the Target Box: Points to the left indicate low moisture loss, which could be due to high humidity or insufficient airflow within the setter.

Right of the Target Box: Points to the right suggest high moisture loss, due to low humidity or excessive ventilation.

Plotting chick yield against moisture loss regularly allows hatchery managers to see where their hatchery performs relative to the target and make necessary adjustments to incubation conditions. The goal is to bring as many data points as possible into the target zone, ensuring high chick quality and consistent hatchery performance.