Statistics of Random Data Generated for “Fabricated_apiary_data”

| Rows = 2891 | Mode | Min | Max | Average |
|---|---|---|---|---|
| Varroa Mites Observed | 3 | 0 | 133 | 60.599 |
| Hours of Sun | 2676 | 509 | 3373 | 2149.633 |
| Wax Moths | 14 | 0 | 15 | 7.836 |
| Total Honey | 11728 | 1232 | 19997 | 10151.641 |
| Swarm Attempted | 0 | 0 | 1 | 0.495 |
| Queen Cells Produced | 2 | 0 | 6 | 1.943 |
| Survival | 0 | 0 | 1 | 0.486 |

**These are the stats for each column of the combined data from each of the individual spreadsheets**

| Range of Randomness | Statistics of Random Data Generated for "Survivor" Hives | | | | |
|---|---|---|---|---|---|
| | Rows = 1050 | Mode | Min | Max | Average |
| Varroa Mites observed<br>rand= 1-10 | Varroa Mites Observed | 7 | 0 | 10 | 4.94 |
| Hours of Sun<br>rand= 2300-3374 | Hours of Sun | 2624 | 2300 | 3373 | 2835.16 |
| Wax Moth Observed<br>rand= 1-15 | Wax Moths | 11 | 1 | 15 | 8.07 |
| Total Honey Collected (weight in kg)<br>rand= 10000-20000 | Total Honey | 15576 | 10015 | 19997 | 14920.89 |
| Swarm Attempt<br>(Yes = 1; 0 = No) | Swarm Attempted | 0 | 0 | 1 | 0.26 |
| Queen Cells produced<br>rand= 0-3 | Queen Cells Produced | 2 | 0 | 3 | 1 |
| Survival<br>(Yes = 1, 0 = No) | Survival | 1 | 0 | 1 | 0.71 |

**For the "Survivor" hives, my assumptions were that less parasites, more sunny days, more total honey harvested, less swarm attempts, less queen cells produced and higher rate of survival.**

| Range of Randomness |
|---|
| Varroa Mites observed<br>rand= 90-133 |
| Hours of Sun<br>rand= 509-2800 |
| Wax Moth Observed<br>rand= 1-15 |
| Total Honey Collected<br>(weight in kg)<br>rand= 2000-12000 |
| Swarm Attempt<br>(Yes = 1; 0 = No) |
| Queen Cells produced<br>rand= 2-6 |
| Survival<br>(Yes = 1, 0 = No) |

Statistics of Random Data Generated for "Collapsed" Hives

| Rows = 1050 | Mode | Min | Max | Average |
|---|---|---|---|---|
| Varroa Mites Observed | 95 | 90 | 133 | 111.99 |
| Hours of Sun | 2358 | 510 | 2800 | 1635.09 |
| Wax Moths | 1 | 1 | 15 | 7.86 |
| Total Honey | 5218 | 2004 | 11982 | 6901.35 |
| Swarm Attempted | 1 | 0 | 1 | 0.72 |
| Queen Cells Produced | 2 | 0 | 5 | 1.54 |
| Survival | 0 | 0 | 1 | 0.27 |

**For the "collapsed" hives (or the ones that did not survive the season, my assumptions were that more parasites, less sunny days, less total honey harvested, more swarm attempts, more queen cells produced and lower rate of survival.**

| Range of Randomness | Statistics of Random Data Generated for "Random" Hives | | | | |
|---|---|---|---|---|---|
| | Rows = 792 | Mode | Min | Max | Average |
| Varroa Mites observed<br>rand= 90-133 | Varroa Mites Observed | 83 | 1 | 133 | 66.24 |
| Hours of Sun<br>rand= 509-2800 | Hours of Sun | 967 | 509 | 3369 | 1923.45 |
| Wax Moth Observed<br>rand= 1-15 | Wax Moths | 6 | 0 | 15 | 7.50 |
| Total Honey Collected (weight in kg)<br>rand= 2000-12000 | Total Honey | 6991 | 1232 | 14956 | 8142.32 |
| Swarm Attempt<br>(Yes = 1; 0 = No) | Swarm Attempted | 1 | 0 | 1 | 0.50 |
| Queen Cells produced<br>rand= 2-6 | Queen Cells Produced | 6 | 0 | 6 | 3.09 |
| Survival<br>(Yes = 1, 0 = No) | Survival | 0 | 0 | 1 | 0.48 |

**For the "Random" hives, my assumptions were none. I allowed the software to randomly fill the sheet with values in the ranges listed.**