

Estimating Yield By Boll Counting

Estimating yield by counting bolls can often be **misleading**. Variation in boll size, lint percent, future weather conditions, harvest losses and ginning losses can all effect how boll counts relate to final yield. However variable, people associated with cotton will at some point try to use boll counts to estimate production or make comparisons.

The following Tables are designed to help you **estimate** yields using boll counts.

Following are some suggestions for using these tables:

- 1) Count all harvestable bolls on at least 10 feet of row selected at random in at least four representative locations in the field. Using this data calculate an average number of harvestable bolls per row foot.
- 2) Establish an estimate of boll size. Two suggestions – a) At random, pick all the seedcotton from 50 to 100 bolls representing all boll sizes on the plant. Weigh the composite sample on an accurate scale calibrated in grams. Divide the weight (in grams) by the number of bolls picked and this will give an approximate average boll weight for the field. This calculation should be made for several samples taken to represent the field. b) Pick all the seedcotton from all harvestable bolls on each of ten randomly selected plants. 50 to 100 bolls representing all boll sizes on the plant Weigh the composite sample on an accurate scale calibrated in grams. Divide the weight (in grams) by the number of bolls picked and this will give an approximate average boll weight for the field. This calculation should be made for several samples taken to represent the field.
- 3) Once average boll size and average number of bolls per row foot are established, go to the appropriate table based on expected turnout (33 to 35 % is a good average) and determine how many bolls are estimated to be required per row foot to make a 480 pound bale of cotton. To determine estimated yield in bales per acre, divide the number of bolls per row foot counted by the number required per bale from the table.

Example - 40 inch rows, average 16 bolls per row foot, average boll weight 3.5 grams (rounded off to the nearest one half gram) and an expected turnout of 35% - Go to Table 3 (for 35% turnout), go to the 40 inch row line, follow across to the 3.5 gram per boll column and you find that 12.5 bolls per row foot are required to press a 480 pound bale of lint per acre. 16 bolls per row foot divided by 12.5 is equal to an **estimated** yield of 1.3 bales per acre. Note the word estimated is in bold text – this is only an **estimate**.

| Table 1 | Calculated bolls per row foot needed to produce one bale (480# lint) per acre at various row spacings and boll weights. | | | | | | | |
|----------------|---|--|------------------|------------------|------------------|------------------|------------------|------------------|
| | Turn out is assumed to be 40% | | | | | | | |
| | | Boll Weight in Grams and Ounces (seedcotton) | | | | | | |
| Row Width (in) | Row-feet/ac | 5.0 gm / 0.18 oz | 4.5 gm / 0.16 oz | 4.0 gm / 0.14 oz | 3.5 gm / 0.12 oz | 3.0 gm / 0.11 oz | 2.5 gm / 0.09 oz | 2.0 gm / 0.07 oz |
| 50 | 10454 | 10.4 | 11.6 | 13.0 | 14.9 | 17.4 | 20.8 | 26.1 |
| 40 | 13068 | 8.3 | 9.3 | 10.4 | 11.9 | 13.9 | 16.7 | 20.8 |
| 38 | 13756 | 7.9 | 8.8 | 9.9 | 11.3 | 13.2 | 15.8 | 19.8 |
| 36 | 14520 | 7.5 | 8.3 | 9.4 | 10.7 | 12.5 | 15.0 | 18.8 |
| 32 | 16335 | 6.7 | 7.4 | 8.3 | 9.5 | 11.1 | 13.3 | 16.7 |
| 30 | 17424 | 6.3 | 6.9 | 7.8 | 8.9 | 10.4 | 12.5 | 15.6 |
| 20 | 26136 | 4.2 | 4.6 | 5.2 | 6.0 | 6.9 | 8.3 | 10.4 |
| 15 | 34848 | 3.1 | 3.5 | 3.9 | 4.5 | 5.2 | 6.3 | 7.8 |
| 10 | 52272 | 2.1 | 2.3 | 2.6 | 3.0 | 3.5 | 4.2 | 5.2 |

| Table 2 | Calculated bolls per row foot needed to produce one bale (480# lint) per acre at various row spacings and boll weights. | | | | | | | |
|----------------|---|--|------------------|------------------|------------------|------------------|------------------|------------------|
| | Turn out is assumed to be 38% | | | | | | | |
| | | Boll Weight in Grams and Ounces (seedcotton) | | | | | | |
| Row Width (in) | Row-feet/ac | 5.0 gm / 0.18 oz | 4.5 gm / 0.16 oz | 4.0 gm / 0.14 oz | 3.5 gm / 0.12 oz | 3.0 gm / 0.11 oz | 2.5 gm / 0.09 oz | 2.0 gm / 0.07 oz |
| 50 | 10454 | 11.0 | 12.2 | 13.7 | 15.7 | 18.3 | 21.9 | 27.4 |
| 40 | 13068 | 8.8 | 9.8 | 11.0 | 12.5 | 14.6 | 17.6 | 21.9 |
| 38 | 13756 | 8.3 | 9.3 | 10.4 | 11.9 | 13.9 | 16.7 | 20.8 |
| 36 | 14520 | 7.9 | 8.8 | 9.9 | 11.3 | 13.2 | 15.8 | 19.7 |
| 32 | 16335 | 7.0 | 7.8 | 8.8 | 10.0 | 11.7 | 14.0 | 17.6 |
| 30 | 17424 | 6.6 | 7.3 | 8.2 | 9.4 | 11.0 | 13.2 | 16.5 |
| 20 | 26136 | 4.4 | 4.9 | 5.5 | 6.3 | 7.3 | 8.8 | 11.0 |
| 15 | 34848 | 3.3 | 3.7 | 4.1 | 4.7 | 5.5 | 6.6 | 8.2 |
| 10 | 52272 | 2.2 | 2.4 | 2.7 | 3.1 | 3.7 | 4.4 | 5.5 |

| Table 3 | | Calculated bolls per row foot needed to produce one bale (480# lint) per acre at various row spacings and boll weights. | | | | | | |
|----------------|-------------|---|------------------|------------------|------------------|------------------|------------------|------------------|
| | | Turn out is assumed to be 35% | | | | | | |
| | | Boll Weight in Grams and Ounces (seedcotton) | | | | | | |
| Row Width (in) | Row-feet/ac | 5.0 gm / 0.18 oz | 4.5 gm / 0.16 oz | 4.0 gm / 0.14 oz | 3.5 gm / 0.12 oz | 3.0 gm / 0.11 oz | 2.5 gm / 0.09 oz | 2.0 gm / 0.07 oz |
| 50 | 10454 | 11.9 | 13.2 | 14.9 | 17.0 | 19.9 | 23.8 | 29.8 |
| 40 | 13068 | 9.5 | 10.6 | 11.9 | 12.5 | 15.9 | 17.6 | 23.8 |
| 38 | 13756 | 9.1 | 10.1 | 11.3 | 11.9 | 15.1 | 16.7 | 22.6 |
| 36 | 14520 | 8.6 | 9.5 | 10.7 | 11.3 | 14.3 | 15.8 | 21.4 |
| 32 | 16335 | 7.6 | 8.5 | 9.5 | 10.0 | 12.7 | 14.0 | 19.1 |
| 30 | 17424 | 7.1 | 7.9 | 8.9 | 9.4 | 11.9 | 13.2 | 17.9 |
| 20 | 26136 | 4.8 | 5.3 | 6.0 | 6.3 | 7.9 | 8.8 | 11.9 |
| 15 | 34848 | 3.6 | 4.0 | 4.5 | 4.7 | 6.0 | 6.6 | 8.9 |
| 10 | 52272 | 2.4 | 2.6 | 3.0 | 3.1 | 4.0 | 4.4 | 6.0 |

| Table 4 | | Calculated bolls per row foot needed to produce one bale (480# lint) per acre at various row spacings and boll weights. | | | | | | |
|----------------|-------------|---|------------------|------------------|------------------|------------------|------------------|------------------|
| | | Turn out is assumed to be 33% | | | | | | |
| | | Boll Weight in Grams and Ounces (seedcotton) | | | | | | |
| Row Width (in) | Row-feet/ac | 5.0 gm / 0.18 oz | 4.5 gm / 0.16 oz | 4.0 gm / 0.14 oz | 3.5 gm / 0.12 oz | 3.0 gm / 0.11 oz | 2.5 gm / 0.09 oz | 2.0 gm / 0.07 oz |
| 50 | 10454 | 12.6 | 14.0 | 15.8 | 18.0 | 21.1 | 25.3 | 31.6 |
| 40 | 13068 | 10.1 | 11.2 | 12.6 | 14.4 | 16.8 | 20.2 | 25.3 |
| 38 | 13756 | 9.6 | 10.7 | 12.0 | 13.7 | 16.0 | 19.2 | 24.0 |
| 36 | 14520 | 9.1 | 10.1 | 11.4 | 13.0 | 15.2 | 18.2 | 22.7 |
| 32 | 16335 | 8.1 | 9.0 | 10.1 | 11.6 | 13.5 | 16.2 | 20.2 |
| 30 | 17424 | 7.6 | 8.4 | 9.5 | 10.8 | 12.6 | 15.2 | 18.9 |
| 20 | 26136 | 5.1 | 5.6 | 6.3 | 7.2 | 8.4 | 10.1 | 12.6 |
| 15 | 34848 | 3.8 | 4.2 | 4.7 | 5.4 | 6.3 | 7.6 | 9.5 |
| 10 | 52272 | 2.5 | 2.8 | 3.2 | 3.6 | 4.2 | 5.1 | 6.3 |

| Table 5 | Calculated bolls per row foot needed to produce one bale (480# lint) per acre at various row spacings and boll weights. | | | | | | | |
|----------------|---|--|------------------|------------------|------------------|------------------|------------------|------------------|
| | Turn out is assumed to be 30% | | | | | | | |
| | | Boll Weight in Grams and Ounces (seedcotton) | | | | | | |
| Row Width (in) | Row-feet/ac | 5.0 gm / 0.18 oz | 4.5 gm / 0.16 oz | 4.0 gm / 0.14 oz | 3.5 gm / 0.12 oz | 3.0 gm / 0.11 oz | 2.5 gm / 0.09 oz | 2.0 gm / 0.07 oz |
| 50 | 10454 | 13.9 | 15.4 | 17.4 | 19.9 | 23.2 | 27.8 | 34.7 |
| 40 | 13068 | 11.1 | 12.4 | 13.9 | 15.9 | 18.5 | 22.2 | 27.8 |
| 38 | 13756 | 10.6 | 11.7 | 13.2 | 15.1 | 17.6 | 21.1 | 26.4 |
| 36 | 14520 | 10.0 | 11.1 | 12.5 | 14.3 | 16.7 | 20.0 | 25.0 |
| 32 | 16335 | 8.9 | 9.9 | 11.1 | 12.7 | 14.8 | 17.8 | 22.2 |
| 30 | 17424 | 8.3 | 9.3 | 10.4 | 11.9 | 13.9 | 16.7 | 20.8 |
| 20 | 26136 | 5.6 | 6.2 | 6.9 | 7.9 | 9.3 | 11.1 | 13.9 |
| 15 | 34848 | 4.2 | 4.6 | 5.2 | 6.0 | 6.9 | 8.3 | 10.4 |
| 10 | 52272 | 2.8 | 3.1 | 3.5 | 4.0 | 4.6 | 5.6 | 6.9 |