



AGRICULTURAL ECONOMICS SERIES

TIMELY INFORMATION

Agriculture & Natural Resources

AGRICULTURAL ECONOMICS AND RURAL SOCIOLOGY, AUBURN UNIVERSITY, AL 36849-5639

Estimating Cotton Yield in the Field

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As cotton bolls start to open and we begin to talk about late season crop management and defoliation, farmers often are interested in making an estimate or guess about what a particular field will yield. While there is a good bit of variation in any field, you can make a pretty good guess if you will take time to count and weigh a sample of bolls. The accuracy of your estimate depends on how much time you are willing to take. It also depends on some assumptions on picker efficiency and turnout. I used 38 percent turnout and 87 percent picker efficiency and I also assumed an average boll weighs between 3 and 4 grams.

I guess the easiest way estimate yield is to count the bolls in 10 feet of row. Pick a representative spot (or several) and count all the bolls in 10 feet. The rule of thumb is that it takes about 120 4-gram bolls per 10 feet of row to make a bale. In other words, each boll represents about 4 pounds of lint per acre on 38-inch rows. It takes about 160 3-gram bolls. If you are on 30-inch rows, each 4-gram boll means about 5 pounds of lint per acre, and it takes about 100 in 10 feet to represent a bale per acre. If your average boll weighs 3 grams, you need 120 of them for a bale. With UNRC, each 3-gram boll on a 7-inch drill spacing counts for about 15 pounds per acre and you will need about 30 in 10 feet to equal a bale per acre. If your average boll is small, you will need more. Ten feet of boll counting is a long way so you can do less, just adjust your count accordingly.

To get real scientific about this, you will have to weigh the bolls. You really can't make a better estimate without making an estimate of average boll weight, but if you are willing to take the time and go to the trouble, you can get pretty close on yield. Any systematic sampling of boll size and number will work fine. You might randomly select a sample of plants and weigh every boll on those plants to get the average or you might randomly select individual bolls from random plants. Probably not many people would want to go to that much trouble. However, if you just want to weigh a few bolls and count the number per foot of row, the tables on the next page will help you predict your yield. From the table for 38 inch rows, it takes 14 3.5 gram bolls per foot of row to represent 491 pounds of lint per acre.

Finally, you can just weigh the grams of cotton from the whole plant from one foot of row. For 38-inch rows, grams of seed cotton from one foot of row times 10 equals pounds lint per acre. For 30-inch rows, grams of seed cotton from one foot of row times 12.7 equals pounds of lint per acre. You probably need to harvest several feet to get a good estimate of grams per foot of row.

You've got to remember that this is just for fun. I wouldn't bet on the outcome. An old farmer once told me he had picked 60-something crops, and that you never know until you get it ginned what it will make. It might look bad and pick good, and it might look good and pick bad. I know we've all had the same experience.

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Estimated Lint Cotton Yield
38% Turnout, 87% Picker Efficiency
Pounds Lint per Acre

Bolls per foot of row, 38 inch rows								
Grams per boll	<u>8</u>	<u>10</u>	<u>12</u>	<u>14</u>	<u>16</u>	<u>18</u>	<u>20</u>	<u>22</u>
2	160	200	240	280	321	361	401	441
2.5	200	250	301	351	401	451	501	551
3	240	301	361	421	481	541	601	661
3.5	280	351	421	491	561	631	701	771
4	321	401	481	561	641	721	801	881
4.5	361	451	541	631	721	811	902	992
5	401	501	601	701	801	902	1002	1102
5.5	441	551	661	771	881	992	1102	1212
6	481	601	721	841	962	1082	1202	1322

Bolls per foot of row, 30 inch rows								
Grams per boll	<u>8</u>	<u>10</u>	<u>12</u>	<u>14</u>	<u>16</u>	<u>18</u>	<u>20</u>	<u>22</u>
2	203	254	305	355	406	457	508	558
2.5	254	317	381	444	508	571	634	698
3	305	381	457	533	609	685	761	837
3.5	355	444	533	622	711	799	888	977
4	406	508	609	711	812	914	1015	1117
4.5	457	571	685	799	914	1028	1142	1256
5	508	634	761	888	1015	1142	1269	1396
5.5	558	698	837	977	1117	1256	1396	1535
6	609	761	914	1066	1218	1370	1523	1675