

2009-2010 No-till Winter Canola Row Spacing Study

Chad Godsey and Randy Taylor

Plots were established and planted on Sept. 17 to DKW 46-15. Both locations were planted following an average yielding wheat crop harvested in 2009. Plots were 10 ft by 30 ft in length. A Great Plains NT drill was used for the 15 in row spacing treatments. The coulter used was a turbo-till fluted coulter. All 30 in treatments were planted with a Monosem vacuum planter equipped with Yetter row cleaners. All treatments were planted at 5 mph.

| Treatment No. | Seeder | Spacing (in) | Residue Management | Tillage | Seeding Rate (lb/ac) |
|---------------|---------|--------------|--------------------|------------|----------------------|
| 1 | Planter | 30 | Yes | no till | 2 |
| 2 | Planter | 30 | Yes | no till | 3 |
| 3 | Planter | 30 | Yes | no till | 4 |
| 4 | Planter | 30 | Yes | no till | 5 |
| 5 | Drill | 15 | No | no till | 5 |
| 6 | Drill | 15 | No | Conv.-till | 5 |
| 7 | Drill | 15 | Coulter | no till | 5 |

Stand counts were taken in three separate three ft segments in each plot 5, 7, 9, 13, and 55 days after planting to get a rate of emergence and final fall stand count. A winter survival stand count was taken on March 16, 2010.

Results

Emergence

- Overall, the planter trt's emerged quicker and more evenly.
- A greater percent emergence was observed with planted plots when compared to drilled plots. This was especially true at the lower seeding rates (2 and 3 lb/ac).
- Two to three lb/ac seems to be adequate for 30 in row spacing.

Winter Survival

- A greater percent of plants died in the 30 in row spacing. All 30 in treatments ended up having a stand count in the 2.5 to 3 plants/ft² regardless of seeding rate.
- The 15 in row spacing had more plants per square foot than the 30 in row spacing.

Yield

- No differences were observed between treatments. Overall, yields were lower than expected. At Covington, soil pH ranged from 4.5 to 5.1 between reps so this limited yield. At Red Rock insect and weed pressure limited yield.

- Under high yielding environments I think we may see a 10% reduction in yield when planting on 30 in rows. Choosing a cultivar that branches profusely appears to be important as we did not observe complete row closure on the 30 in row spacing.

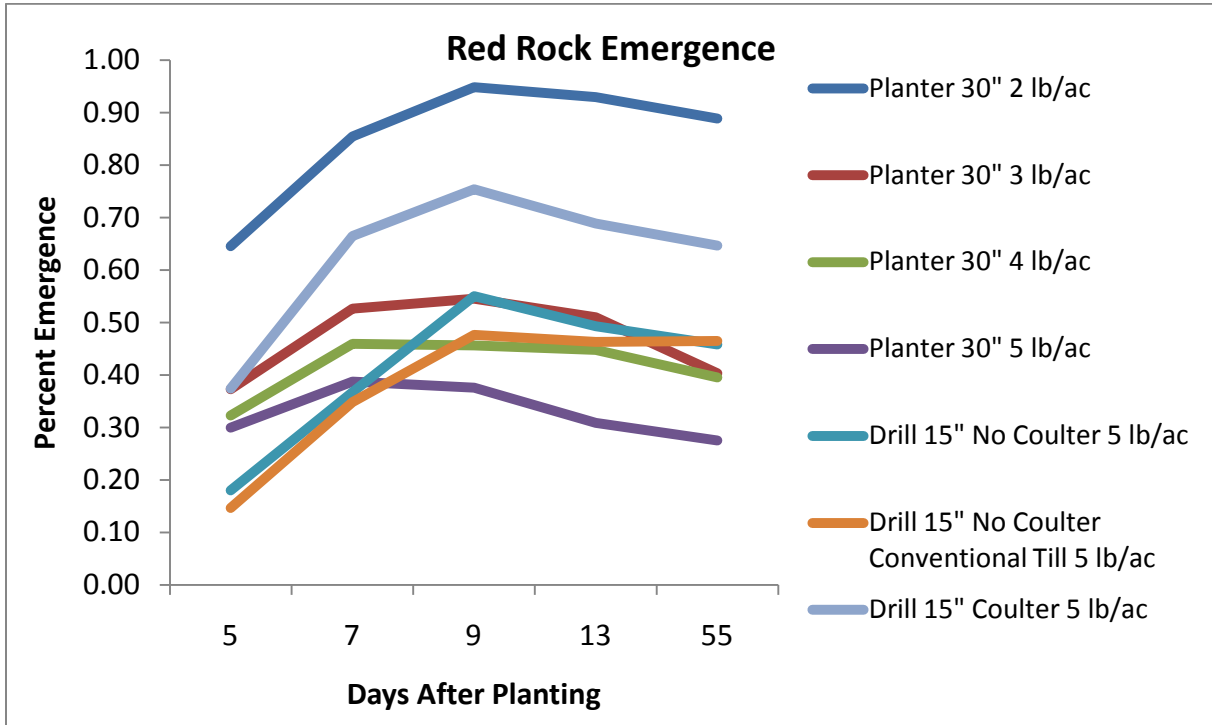
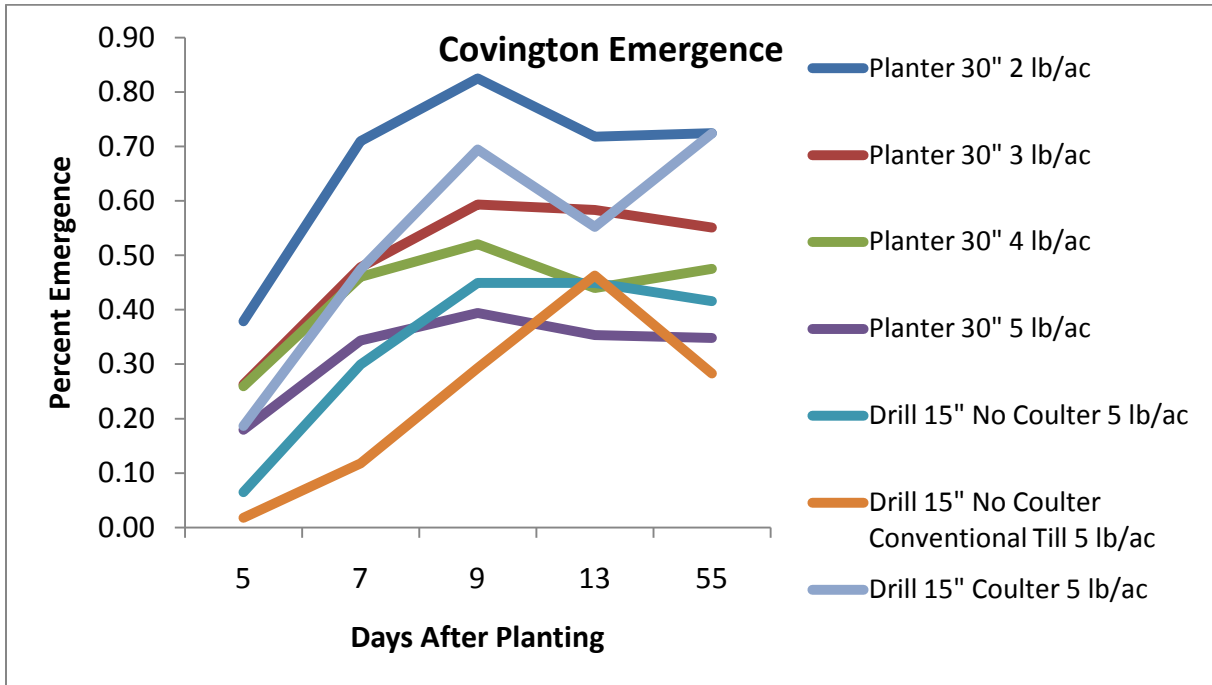


Table 2. Final fall stands and winter survival for Covington, OK location.

| Treatment No. | Seeder | Spacing | Residue Management | Tillage | Final | Winter | Decrease |
|---------------|---------|---------|--------------------|------------|--------------------------------|----------|-----------|
| | | | | | Fall Stands | Survival | |
| | | | | | --- plants/ft ² --- | --- | --- % --- |
| 1 | Planter | 30 | Yes | no till | 3.8 | 2.3 | 40% |
| 2 | Planter | 30 | Yes | no till | 16.8 | 2.6 | 85% |
| 3 | Planter | 30 | Yes | no till | 19.8 | 3.0 | 85% |
| 4 | Planter | 30 | Yes | no till | 17.8 | 2.7 | 85% |
| 5 | Drill | 15 | No | no till | 5.5 | 4.2 | 24% |
| 6 | Drill | 15 | No | Conv.-till | 3.7 | 2.6 | 30% |
| 7 | Drill | 15 | Coulter | no till | 9.6 | 3.8 | 61% |

Table 3. Final fall stands and winter survival for Red Rock, OK location.

| Treatment No. | Seeder | Spacing | Residue Management | Tillage | Final | Winter | Decrease |
|---------------|---------|---------|--------------------|------------|--------------------------------|----------|-----------|
| | | | | | Fall Stands | Survival | |
| | | | | | --- plants/ft ² --- | --- | --- % --- |
| 1 | Planter | 30 | Yes | no till | 4.6 | 3.1 | 33% |
| 2 | Planter | 30 | Yes | no till | 12.3 | 2.4 | 80% |
| 3 | Planter | 30 | Yes | no till | 16.4 | 3.0 | 82% |
| 4 | Planter | 30 | Yes | no till | 14.1 | 2.5 | 82% |
| 5 | Drill | 15 | No | no till | 6.0 | 4.5 | 26% |
| 6 | Drill | 15 | No | Conv.-till | 6.1 | 5.2 | 15% |
| 7 | Drill | 15 | Coulter | no till | 8.5 | 5.9 | 31% |

Table 4. Seed yields at the two locations.

| Row Spacing | Location | |
|-------------|-------------|----------|
| | Covington | Red Rock |
| --- in --- | -- lb/ac -- | |
| 15 | 1396 | 1043 |
| 30 | 1360 | 921 |

Table 5. Seed yields at Covington, OK.

| Treatment No. | Row Spacing | Seed Rate | Row cleaner/coulter | Tillage | Yield |
|---------------|-------------|-----------|---------------------|---------|-------------|
| | - in - | - lb/ac- | | | -- lb/ac -- |
| 1 | 30 | 2 | Yes | No | 1374 |
| 2 | 30 | 3 | Yes | No | 1412 |
| 3 | 30 | 4 | Yes | No | 1242 |
| 4 | 30 | 5 | Yes | No | 1431 |
| 5 | 15 | 5 | No | No | 1221 |
| 6 | 15 | 5 | No | Yes | 1441 |
| 7 | 15 | 5 | Yes | No | 1425 |

Table 6. Seed yields at Covington, OK.

| Treatment No. | Row Spacing | Seed Rate | Row cleaner/coulter | Tillage | Yield |
|---------------|-------------|-----------|---------------------|---------|-------------|
| | - in - | - lb/ac- | | | -- lb/ac -- |
| 1 | 30 | 2 | Yes | No | 1032 |
| 2 | 30 | 3 | Yes | No | 824 |
| 3 | 30 | 4 | Yes | No | 944 |
| 4 | 30 | 5 | Yes | No | 885 |
| 5 | 15 | 5 | No | No | 939 |
| 6 | 15 | 5 | No | Yes | 1264 |
| 7 | 15 | 5 | Yes | No | 929 |