SOIL COMPACTION TEST

By GrassRoots Lawn Care of Oklahoma

QUESTION

Does one standard application of Turf2Max reduce soil compaction on a wide scale, enough to justify a large lawn applicator (over 20,000 customers) to apply as a standard application each year for every customer?

PURPOSE

This test will help determine if it is feasible for the largest lawn applicator in Oklahoma to apply Turf2Max on every customer, over a wide range of soil conditions. Jerry Mosley, the owner of Grassroots Lawn Care has seven locations throughout Oklahoma, and he wanted to be sure that Turf2Max would be effective on a broad scale.

TEST SITES

Two hundred twenty two (222) test sites were selected at random from the customer list.

CONTROL

One standard application of Turf2Max was applied at the label rate on each of the test sites. Two measurements for soil compaction were taken, one at the time of application and the other 8 weeks after application. Each site was marked and recorded in the applicators journal.

APPLICATION

On July 16, 2002 each site was treated with the standard application of Turf2Max. The standard rate is 4oz Turf2Max diluted 60:1 per 1000 square feet. Only certified lawn applicators from Grassroots applied the product.

TESTS PERFORMED

On July 16, 2002 a soil compaction test was performed on each site. Two measurements were taken at each site, the first one at the 3" depth and the second at the 6" depth. The method used was a soil compaction gauge that measures penetration resistance in pounds per square inch. Each test was performed by a Grassroots lawn applicator.

On September 16, 2002 a second soil compaction test was performed on each site at the 3" depth and at the 6" depth.

TEST RESULTS

Two hundred twenty two tests were performed at both the 3 and 6" depth.

- Average soil compaction at the 3" depth was 187 pounds per square inch before application.
- Average soil compaction at the 3" depth was 107 pounds per square inch 8 weeks after application.
- Average soil compaction reduction was 80 pounds per square inch.
- **Average reduction in soil compaction was 43%.**

- Average soil compaction at the 6” depth was 239 pounds per square inch before application.

- Average soil compaction at the 6’ depth was 170 pounds per square inch 8 weeks after application.

- Average soil compaction reduction was 68 pounds per square inch.

- **Average reduction in soil compaction was 29%.**

SUMMARY OF TEST RESULTS

3” Soil Depth **6” Soil Depth**

Penetration Resistance lbs/sq.in.	**Number of Tests**	**Average Decrease lbs/sq.in.**	**Average Decrease %**	**Penetration Resistance lbs/sq.in.**	**Number of Tests**	**Average Decrease lbs/sq.in.**	**Average Decrease %**
1-50	13	2	**4**	1-50	1	0	**0**
51-100	42	19	**23**	51-100	21	14	**15**
101-150	59	58	**34**	101-150	31	34	**24**
151-200	29	90	**46**	151-200	27	56	**28**
201-250	23	116	**47**	201-250	31	67	**28**
251-300	56	177	**59**	251-300	111	112	**38**

INTERPRETATION

The data suggests that in highly compacted soils Turf2Max becomes more effective. In both the 3 and 6” depth, these tests demonstrate a direct relationship between severity of compaction and the result after treatment.

The soil compaction tests performed by Grassroots Lawn Care of Oklahoma support the effectiveness of Turf2Max on a wide range of soil conditions. The high number of repetitions and using two depths substantiate the usefulness of Turf2Max on a broad scale. Grassroots performed the tests to justify the expense of applying the product as a routine application for every customer each year.

CONCLUSION

The application of Turf2Max on a wide range of soil conditions has substantially reduced soil compaction enough to justify the largest lawn applicator in Oklahoma to apply the product on every customer each year as a routine application.