

SUMMARY: SPRING ROOTING- POST INSTALLATION-PLASTIC GROWN VS TRADITIONALLY CUT

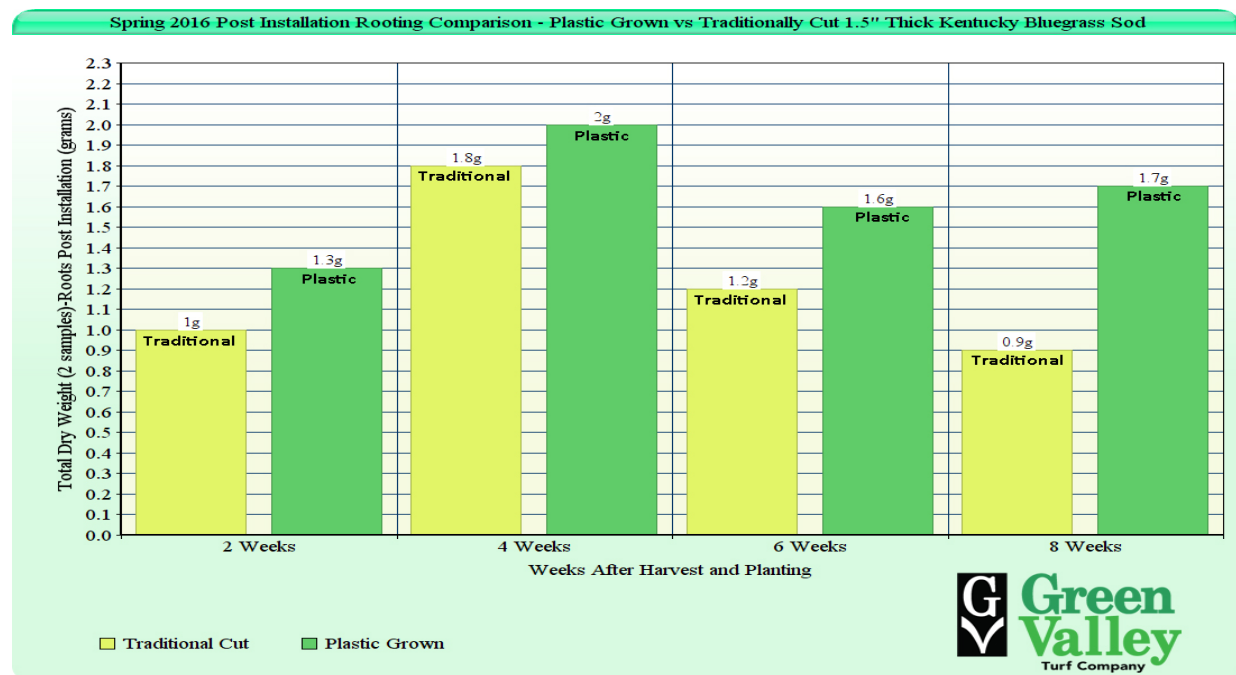
May 13, 2016



Post-Installation Sod Rooting Comparison Experiment-Spring 2016

Hypothesis: Because it comes to your field with intact, encapsulated roots and associated starch reserves, plastic grown sod will root as well or better than traditionally cut sod after it is harvested and installed.

Results: Hypothesis confirmed. Under the conditions and time of this experiment, plastic grown Kentucky bluegrass sod rooted significantly more than traditionally cut sod during the 8 weeks after planting, **35% more over the 8 week experiment.**

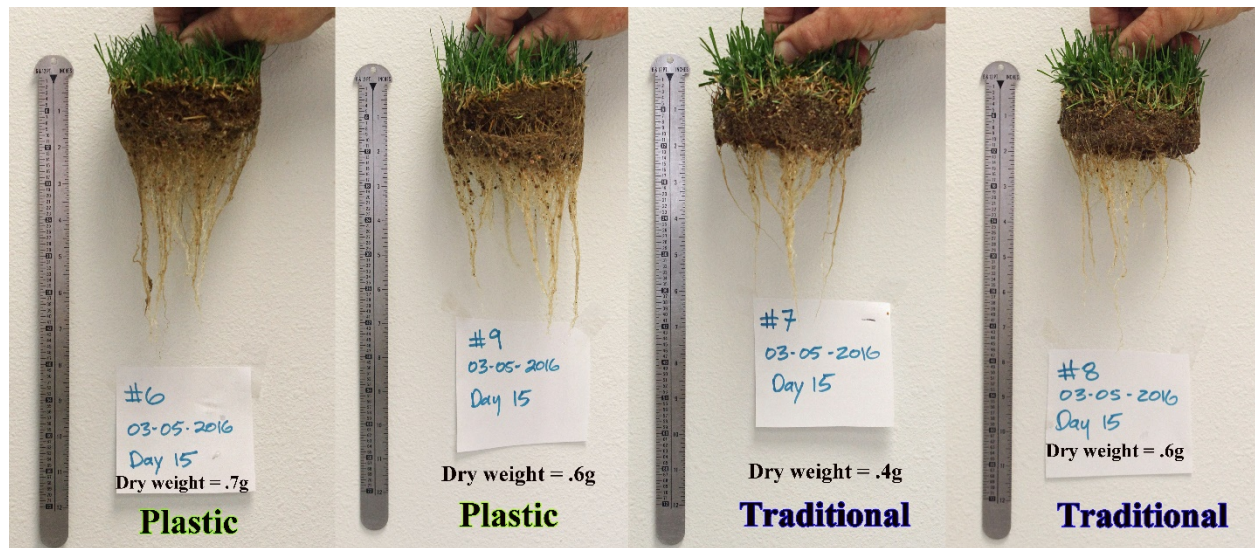


Week 2 March 5, 2016			Week 6 April 4, 2016		
Sample #	Dry wt. (grams)	Notes	Sample #	Dry wt. (grams)	Notes
#6	.7	Plastic	#3	.4	Traditional
#7	.4	Traditional	#13	.8	Traditional
#8	.6	Traditional	#14	.7	Plastic
#9	.6	Plastic	#16	.9	Plastic
Week 4 March 21, 2016			Week 8 April 18, 2016		
Sample #	Dry wt. (grams)	Notes	Sample #	Dry wt. (grams)	Notes
#5	.8	Traditional	#10	.8	Plastic
#18	1.0	Traditional	#11	.9	Plastic
#2	.8	Plastic	#12	.5	Traditional
#4	1.2	Plastic	#15	.4	Traditional

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Week 2



Week 4



Week 6



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Week 8



Samples growing indoors under plant growth light.

Materials and Methods: Two sods grown outdoors on identical clean sand meeting ASTM F2396. Both sods are 16 months old - seeded to the same blend of varieties: Hampton, Fullback, Noble and Midnight Kentucky bluegrasses under very similar maintenance regimes. Treatment #1 is a 1.5 inch thick sod grown on plastic in Littleton, CO. Treatment #2 is a 1.5 inch thick sod harvested with a traditional sod cutter and grown in Platteville, CO. (Approximately 60 miles north of Littleton). 18 clear-plastic sampling tubes are

constructed with identical drain holes in the bottom, a filter fabric and 10-inches of clean sand to ASTM 2396 particle size ranges (identical to sand sod is grown on for both treatments.). Before planting, sanded tubes each fertilized with identical amounts of a soluble 20-10-10 granular fertilizer equating to 1.0 lbs. N/1,000 ft. sq. 4-inch dia. samples were hand-cut for each treatment, 9 plastic grown (Plastic) and 9 traditionally cut (Traditional). Planted tube samples were topdressed lightly with rootzone sand and any side-gaps filled in with sand to prevent sod roots from drying. Planted Feb. 20, 2016 at the GVT offices in Littleton, tubes are placed in holding rack under sodium-vapor plant growth lamp set to 12-hours on and 12-hours off daily. Office maintained to 60-68 F temperature. As they were planted, each tube was numbered 1-18. A key was developed as to whether the sample was Plastic or Traditional and the tester was kept blind to this information.

All sample tubes were irrigated with identical amounts of water all together when needed so as to avoid any drought stress on the samples. Each sample was fertilized identically with a balanced liquid fertilizer every two weeks after planting. All samples mowed on each mowing with scissors to top of tube for 1-inch height of cut, and as needed to prevent scalping.

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Carefully washing sand off sample roots – Week 2 sampling

Root sampling dates are at 2, 4, 6, and 8 weeks after planting. 4 samples are collected at each sampling date, two Plastic and two Traditional, leaving two samples in case of error or accident. Total of 4 samples are drawn randomly from color-coded labels in hat to ensure two Plastic and two Traditional at each sampling date. Two cuts were carefully made on the sides of each tube with a Dremel saw. Top piece is removed and sand carefully washed from roots with clean water over a large 2.0mm sieve to capture any broken-off roots. Samples then gently washed further by dipping into

tub of clean water, but not washing original sod sample soil. Images are taken against a wall next to a ruler of each sod sample and dangling roots that have grown since planting for a visual comparison.

Any roots grown since planting are carefully cut off with a razor-knife and samples are dried using a typical food dehydrator set to 105 F for 48 hours. Dried samples are inspected and cleaned of any remaining sand particles large enough to see under a 5X magnifying glass. Any broken-off dried root bits also collected. Sample is weight to nearest .1 grams on a digital scale and recorded.



Cutting off post-planting roots. Week 2 sampling.



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Experiment is independently conducted by Ross Kurcab, CSFM Championship Sports Turf Systems, LLC.

