



GENESIS

GERMINATION & SOIL CONDITIONER

Germination Enhancement Testing of Genesis

155%

**Seed
Germination
Rate**

1550%

**Day 7 Seed
Germination
Rate**

136%

**Average
Plant Height**

250%

**Greater Plant
Mass Area**

vs. control
plants in 21-Day
growth study

GENESIS GERMINATION & SOIL CONDITIONER is an all-natural turf solution that uses biologically active, organic carbon to increase upward green growth in lawns and turf grass. This product increases green-up by stimulating root growth, chelating soil nutrients to make them accessible to the plant, combating negative fungal growth, aerating and improving compacted soil, and working to unlock previous fertilizer applications. To evaluate the effectiveness of Genesis, Southland Organics consulted TRI Environmental for laboratory testing of the product in regard to germination and vegetation enhancement.

Methods of Testing

TRI Environmental, located in Greenville, South Carolina, is a "full-service independent laboratory" which conducts testing to ensure the quality of materials used in civil, geotechnical, and environmental settings. In the study, a control group of seeds planted in potting soil was germinated and grown alongside an identical group of seeds in potting soil which had Genesis applied to it. On Day 0 (the beginning of the trial), Day 7, Day 14, and Day 21 (the end of the trial), the seeds germinated per area and average plant height were measured. Plant mass per area was measured on Day 21. The measurements of the Genesis experimental group were compared against both the measurements of the concurrent control and the measurements of a 2015–2018 average control. The concurrent control is the control group of plants from this particular study.

The 2015–2018 average control is an average of measurements taken from control groups of the same grass over a three-year period from 2015–2018. We are excited to share some of the impactful comparisons between Genesis Germination & Soil Conditioner and the control groups.

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Genesis leads to faster germination rates in turf, resulting in rapid growth and green-up in lawns.



Germination Enhancement Testing of Genesis

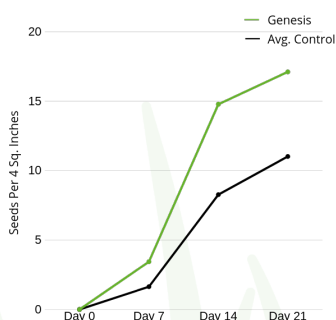
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Results from the Study

The results from our Germination/Vegetation Growth Summary sent to us by TRI Environmental showed that the use of Genesis resulted in higher seed germination rates, greater average plant height, and greater plant mass per area against the control plants at the end of the 21-Day growth period.

To easily see the Genesis difference, take a look at the following graphs displaying the results of the study. In each of the graphs, the Genesis experimental group is shown in green, and the control group is shown in black.

Seed Germination Rate

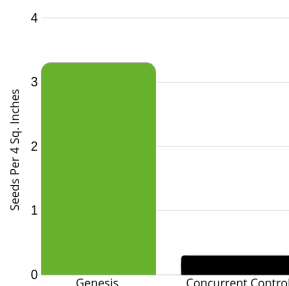


155 %

The seed germination rate per area, which was measured weekly, is shown to the left. We saw a consistent seed germination increase in each of the weekly measurements when we compared the Genesis-treated group to the 2015–2018 average control group. On Day 21, the Genesis group's seed germination rate was 155% higher than the 2015–2018 average control group's seed germination rate. In regard to the concurrent group's seed germination rate, on Day 21, the Genesis group's seed germination rate was 120% higher.

We took a closer look at the Day 7 germination measurements to further understand Genesis' impact. These measurements are represented in the graph to the right. When specifically studying and comparing germination rates from Day 7, the Genesis group was 1550% more successful in germinating than the concurrent control group. In addition, the Day 7 seed germination rate of the Genesis group was 210% higher than the 2015–2018 average control group.

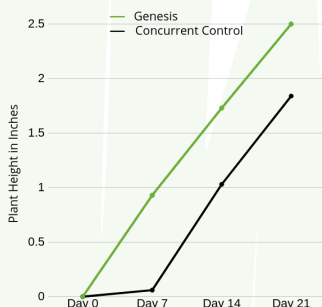
Day 7 Seed Germination Rate



1550 %

Average Plant Height

136 %



Like seed germination rate per area, average plant height was also measured weekly. The results from the Genesis group and the 2015–2018 average control group are graphed to the left. When comparing the plant height of the Genesis group against the plant height of the concurrent control group, the grass in the Genesis group was 136% taller on Day 21. Additionally, when measured on Day 21, the grass treated with Genesis had grown 122% taller than the grass without Genesis in the 2015–2018 average control group.

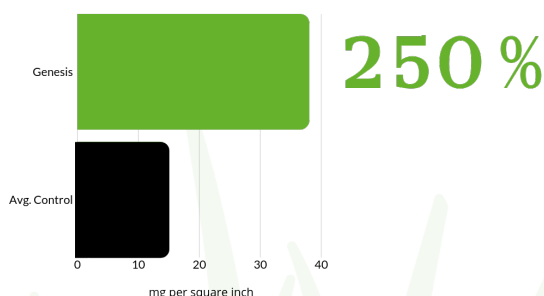


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Since plant mass can only be measured at the end of the trial post-harvesting, the mass was determined at the 21-day mark. The measurements are shown below. Compared to the 2015–2018 average control, the Genesis group's plant mass was 250% greater. Compared to the concurrent control, the Genesis group's plant mass was 210% greater.

Greater Plant Mass Area



Implications of Testing and Next Steps

To summarize the results above, the Genesis application resulted in greater germination rates, upward plant growth and height, and greater plant mass. The improvements were noticeable at each of the weekly measurement markers as well as at the end of the 21-day growth period. This proves that Genesis is highly effective in stimulating growth through improvements in soil and likely nutrient uptake by plants. Genesis Germination and Soil Conditioner is a powerful solution to target faster germination, green-up, and erosion control.



Use of Genesis resulted in higher seed germination rates, greater average plant height, and greater plant mass per area.

Key Points:

- Plant mass showed the most significant increase in any trait in comparisons against both the concurrent control AND the 2015–2018 average control. This shows that the increase is meaningful and not just an anomaly. Plant mass and root development create a better turf experience and quickly improve erosion concerns.
- Seed germination rates showed an increase in the Genesis group at the 7, 14, and 21-day marks across the board.
- Plant height showed an increase of 136% (concurrent average control) and 122% (2015–2018 average control).
- There was a Day 21 seed germination rate increase of 155% vs. the 2015–2018 average germination rate.
- Seeds germinated per area in the Genesis group showed dramatically faster germination than the germination of both control groups. Rapid germination is key in erosion control.

FOR MORE INFORMATION ABOUT GENESIS AND OTHER SOUTHLAND ORGANICS LAWN AND TURF PRODUCTS

as well as to order the product, please visit our website at <https://www.southlandorganics.com/products/genesis>. If you have any further questions about this study, Genesis, other products, or would like to place an order, feel free to contact Fred Munzenmaier (Fred@SouthlandOrganics.com) or Brad Broxton (Brad@SouthlandOrganics.com).