

Sustainability and Turfgrass Selection

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Turf Territory Manager - East



■ Introduction

Charlie Pisano

- 35 years in the Turf Industry



Barenbrug

- Founded by Joseph Barenbrug in 1904
- 4 generations of family leadership spanning over 120 years.
- Global reach with local solutions



Barenbrug and Sustainability

Barenbrug was founded around the concept of sustainability. By introducing the concept of blends, mixes, and improved genetics over 120 years ago, Barenbrug is a leader in sustainable concepts and environmental stewardship.

■ What is Sustainability in Turfgrass?

The management of turfgrass while balancing environmental responsibility, economic viability, and functional utility.

What are some ways to be more Sustainable?

- Proper turfgrass selection
- Reducing inputs (water, fertilizer, pesticides...)
- Support biodiversity in the soil and your environment

What is the economical impact of Sustainability?

- Reduced input costs
- Reduced equipment use
- Reduced labor

How do we get there through Turfgrass Selection?



■ Monostand

Pros

- Can meet site specific need utilizing one or more attribute.
- With knowledge of trait performance, can anticipate future responses to abiotic/biotic stresses.

Cons

- If the stand begins to show signs of stress or damage, there is no support to assist through recovery.
- Could have limited range of use and attributes



Polystand

Pros

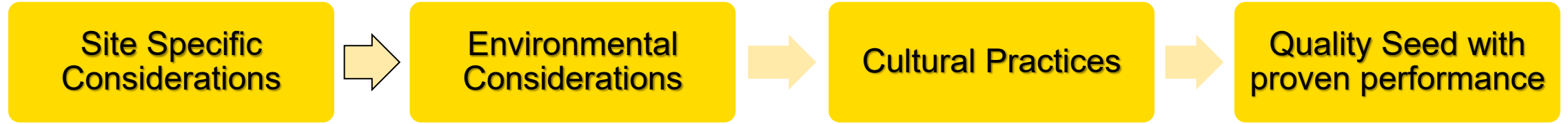
- Multiple species/varieties working together for better plant health and aesthetics.
- Wider range of use and performance.
- Ability to continually add newest, best genetics and be tailored to the best adapted varieties for an area.

Cons

- Produced on a large scale targeting larger regions and uses.
- May not be the best fit for a very specific site need.



. Turfgrass Selection Considerations



Modern Genetics and Attributes



Stress reduction improves
disease and pest
resistance/tolerance



Expanded disease & pest
resistance/tolerance
decrease need for
inputs/maintenance

Combined attributes reduce
overall stress allowing for
quicker recovery with less
inputs/maintenance.
Especially with improved
spreading types

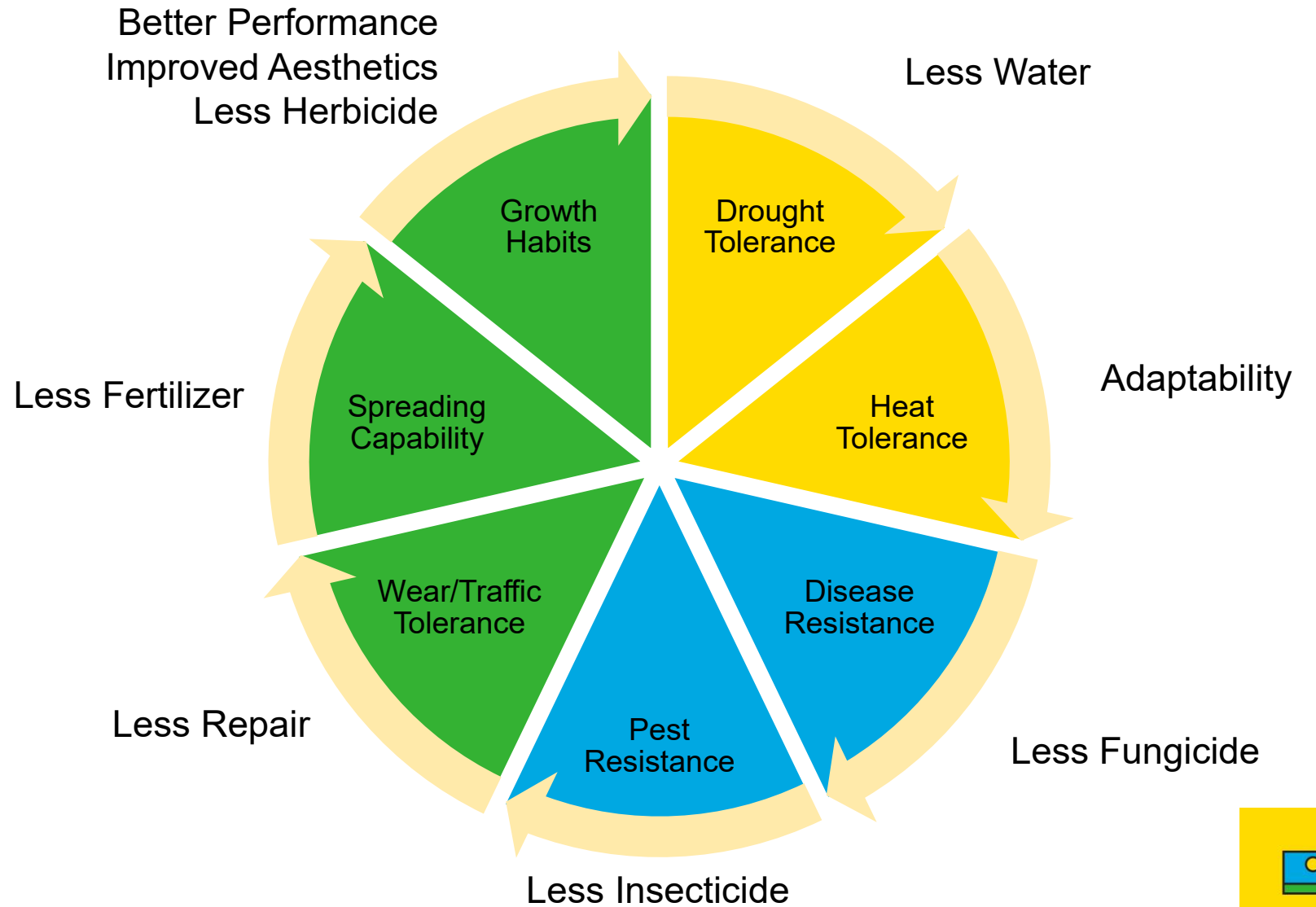


Barenbrug's Approach through Turfgrass Technologies

Barenbrug has developed a line of special turfgrasses with unique traits and performance referred to as Technologies.

This has allowed Barenbrug to continue leading the drive in Sustainability .

Advancements in Turfgrass Genetics



Barenbrug Technologies



Technology in Turfgrasses?

What are Technologies?

- A significant advancement in how a turfgrass grows, spreads, or performs in comparison to other varieties within its species.

What makes Technologies Special?

- Deliver proven, science-driven advancements
- Developed through rigorous breeding and proven through decades of testing and real-world use
- Advances are so unique they justify the granting a patent

Why are Technologies Important?

- Technologies are Sustainable Solutions
- Technologies continue to perform, even under extreme stress
- Technologies enhance overall turfgrass performance



Attributes

- Excellent Drought Tolerance
- Low Demand, Low Maintenance, Self-Repairing
- Patent issued for Rhizomatous Spreading Technology
- Disease Resistance
- Great for municipal/youth athletic fields
- Sun/Shade
- Seed rate: 8 to 10 lbs/M
- **Products**
 - Turf Saver | RTF
 - Turf Saver | RTF | HGT
 - RTF Sod
 - RTF with HGT Sod



"The RTF® Sod rooted quickly and the field looks lush. Our players, coaches, and fans all notice the difference—greener, healthier grass drains well and plays fast."

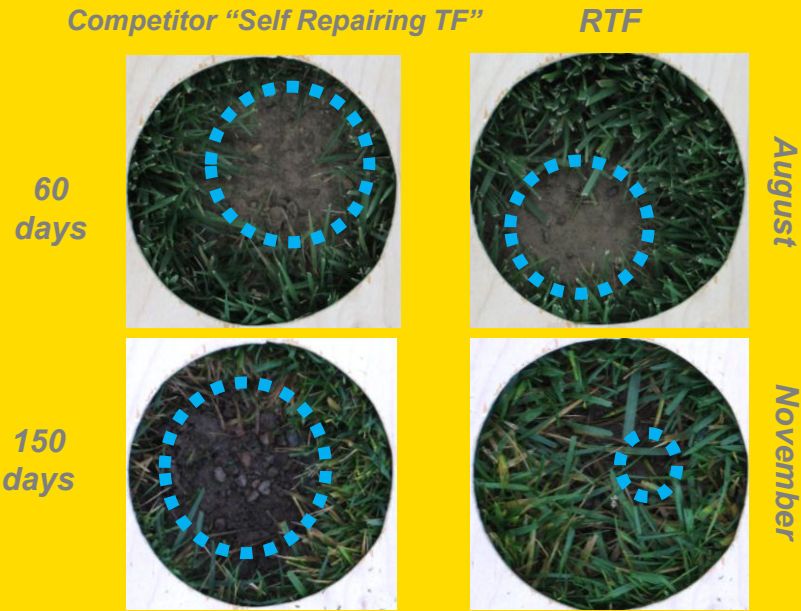
Dan Tesar, Centennial Public Schools



Rhizomes and Beyond

- Ability to be used in sports, takes lower heights, bounces back from a beating
- Exceptional heat, drought, traffic tolerance

Spreading Recovery Trial:
 Removed Plug 6" wide x 4" deep

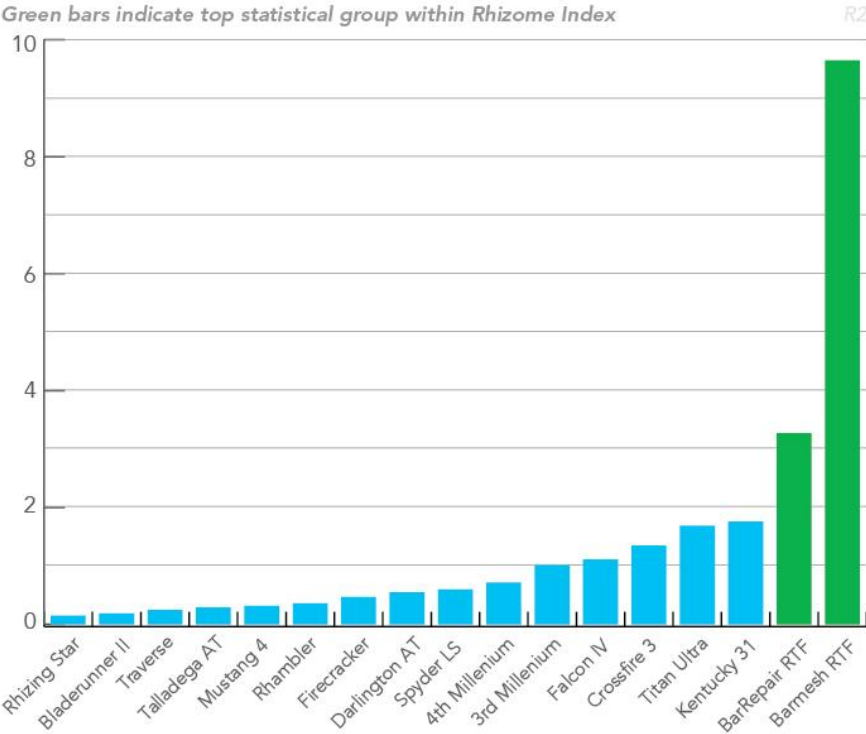


RTF Rhizomes



Rhizomatous Index*

*percent of plants with rhizomes x number of rhizomes/plant x rhizome length



Attributes

- **Excellent Traffic Tolerance and Recovery**
- **Superior Disease Resistance**
- **Wide range of applications and uses**
- High-end athletic fields
- Mostly Sun
- Seed rate: 2 to 3lbs/M
- **Products**
 - Turf Blue | HGT
 - Turf Blue | HGT | RPR
 - HGT Sod



HGT Sod at LMCU Ballpark, Grand Rapids Michigan



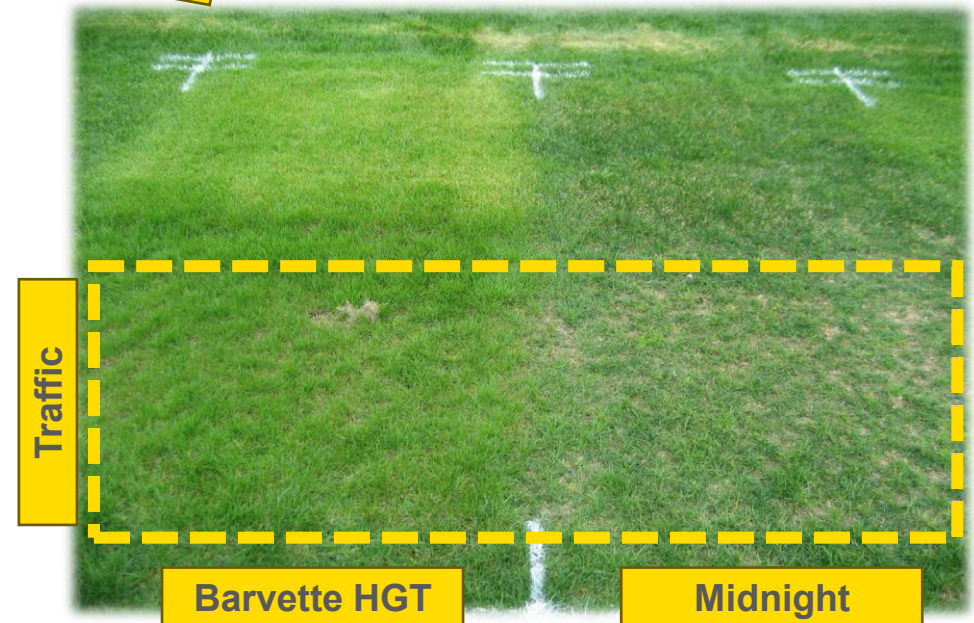
The HGT Experience

- Compared to other bluegrasses, HGT has "higher highs and higher lows."
- With impeccable recovery after traffic, and rapid spring green-up, HGT doesn't stop fighting back.
- HGT is synonymous with summer patch resistance, able to save its energy and handle further stressful conditions.
- **Disease resistance + persistence + aggressiveness =**



Plot of encroaching Barvette HGT at North Carolina KBG NTEP site decimated by summer patch and other stress.

2010 NTEP study at Michigan State University under traffic stress



Attributes

- **Superior Traffic Tolerance and Recovery**
- **Self Repairing with Stolons spreading 6-8"**
- **Patent issued for stoloniferous spreading technology**
- A great choice for high traffic fields (football, soccer).
- Full Sun
- Seed rate: 8 to 10lbs/M
 - Cool Overseed: 4 to 15lbs/M
 - Warm Overseed: 10 to 15lbs/M



"Repeated seedings over the entire surface with RPR produced a steady improvement in overall turf quality. RPR has literally been a life saver"

Don Moody - SUNY Cortland



Traffic Tolerance, Recovery, and Spreading Technology

- A ryegrass that can actually spread. Once displayed at Smithsonian Institute
- Handles more games, reduces overseeding rates & frequency
- Less downtime, Less maintenance, Less inputs

Spreading Recovery Trial:

Removed Plug 6" wide x 4" deep

Competitor "Spreading PRG"

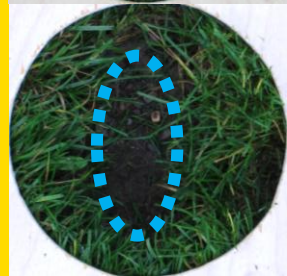
RPR

60 days

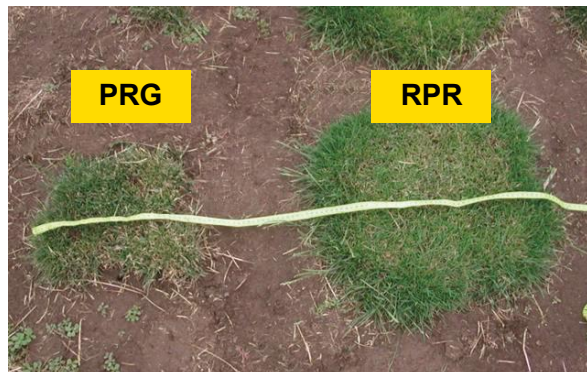


August

150 days



November



Traditional PRG vs RPR after one year (started as 1 seed).



RPR stolon production after one year.



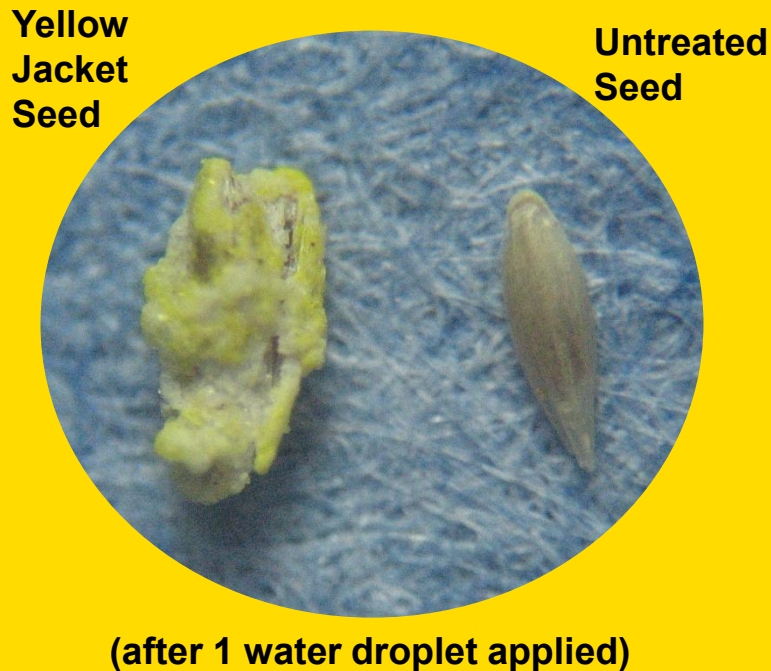


Seed Enhancement



Seed Enhancement Benefits

- Starch based
- Biodegradable



■ Superabsorbent

- Absorption
 - Polymer: holds up to 600 times its own weight in water
 - Seed: up to 4-6 times
- Permeable
 - Releases 97% of water absorbed
- Benefits
 - Allows longer time between watering and reduces water needs
 - Increase Seedling Survival
 - Increase emergence and establishment speed



Seed Enhancement Benefits

Strong early root development is key to faster, healthier turf plant development and establishment



Various microbe benefits

- Nitrogen fixing and nutrient cycling
- Antifungal properties
- Increased root biomass
- Improved soil characteristics
- Drought stress resilience

. Nutrient Pack



- Amino acids
 - Buffer, access hard to reach nutrients, lessen nutrient loss and improve transfer to seedlings



- Starter Fertilizer
 - Designed for turf seedlings



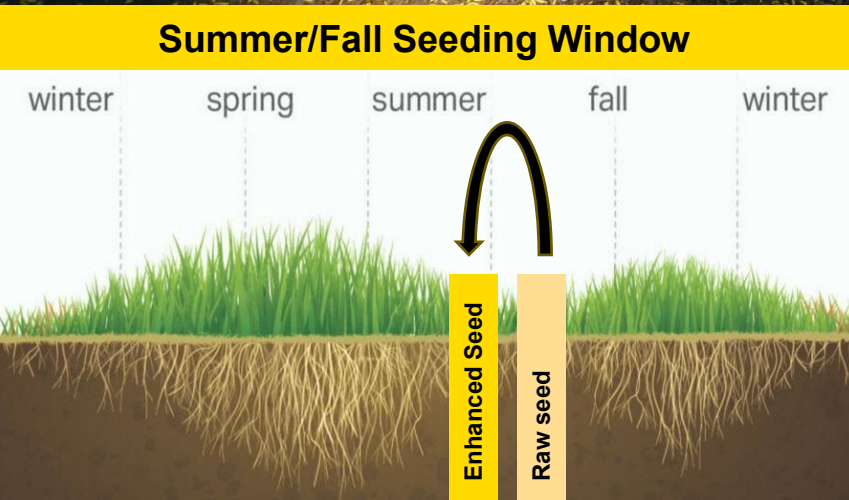
- PGPB
 - (Plant Growth Promoting Bacteria)



Seed Enhancement Benefits

■ Mefenoxam (E.g. Apron XL) + Colorant

- Systemic fungicide
 - Developed specifically for the coating and protection of seeds of all types
 - Pythium & Phytophthora
 - At least 3 weeks fungicidal protection
- Benefits
 - Protects from the devastating effects of seedling diseases
 - Extend summer seeding window
 - Allows for planting during 'less than optimum' weather
 - Outcompete weed seeds like poa annua



Powered by:



What is it?

- Seed & soil mixtures designed to repair turf areas in all climates and all applications
- Soil type options
 - Sand/peat (USGA spec)
 - Compost
 - Sand/micro-compost



Available With:

- HGT
- HGT/RPR
- RTF
- RPR
- PanAm

PRO REPAIR BENEFITS

- Repair all types of turf areas
- Rapid establishment
- Works in low moisture scenarios
- Premixed divot mixes
 - Uniform
 - Consistent
 - Stable





Grow with Confidence