Sports Field Management on a Shoestring Budget

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Soil testing

- All extension specialists take an oath on the day they complete their degrees that they MUST say something in a presentation about soil testing…

"… and will to the best of my ability, which is terrific ability, by the way. Everyone agrees, I have fantastic ability. So there's no problem with my ability, believe me. …"

Our goals today

- Review some of the most basic ways to stretch your dollar from the perspective of an academic AND somebody who actually knows what they are talking about
- Think outside the box
- Two sections, different strategies
- Solicit YOUR tips to share with the group

Great comment from Dr. Adam Thoms, Iowa State Univ. at the 2017 Iowa Turfgrass Conference: "78% of the traffic occurs on 7% of a football field".

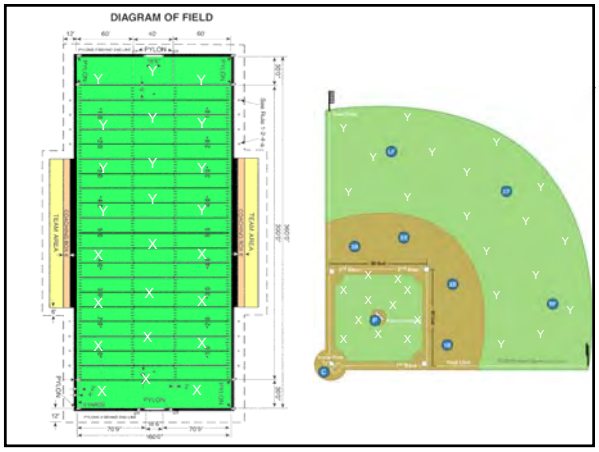
If that is the case, is it always necessary to manage the entire field the same way, especially when it comes to fertility, aeration, and pest management?

Don't underestimate the power of a soil test!

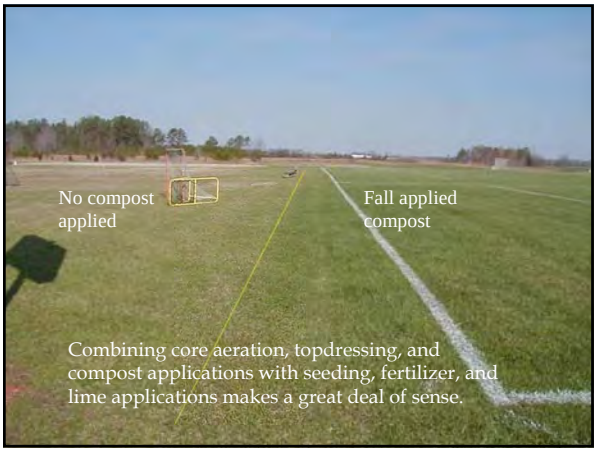
- A basic soil test is typically in the $15 per sample range and provides you with the following:
  - Levels of pH, P, K, Ca, Mg, Mn, Cu, Fe, Zn, B
  - Recommendations on rates and timing for lime or nutrient applications for the particular crop
  - total soluble salts or % organic matter levels can be analyzed for a small additional cost

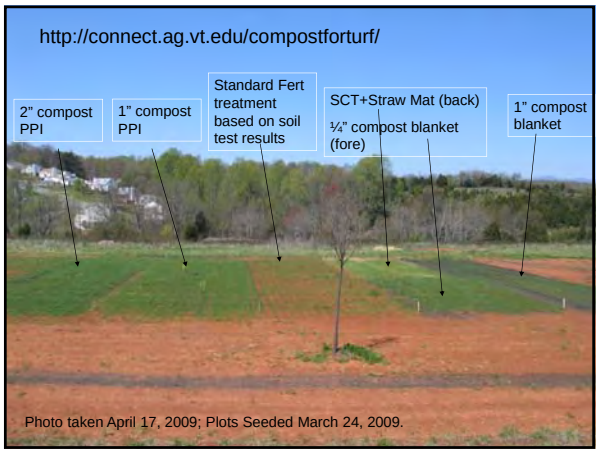
And after you get the test back…

- Put the information to work!
- Is there opportunity to put soil test data to work even in the dead of winter? Depending on locale, the answer for some of us is YES, especially regarding lime applications.



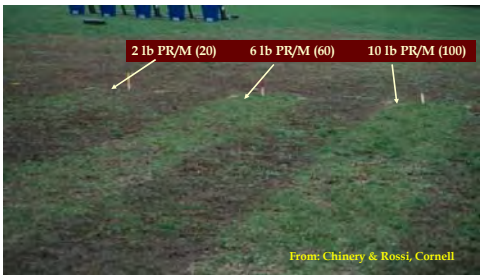
Jim Henderson's (City of Danville, VA Parks and Rec Dept) 'homemade soil sampler'… a great tool.





Seed Banking Works with PR or TF

Picture: This area is overseeded weekly with PR during fall season (Aug 15 to Oct 15, a total of 10 weeks of seeding) at rates indicated in the slide.



Cover began at 0 to 15%

Final cover

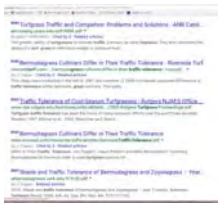
2 lb = 60%

6 lb = 78%

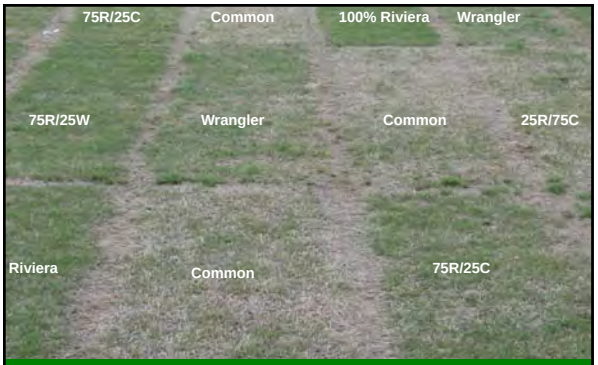
10 lb = 75%

Fast germinating grasses like perennial ryegrass or tall fescue allow for 'seed banking' to be employed. Ignore the calendar and just keep putting out small amounts of seed on trafficked turf throughout the periods of play.

Use High Quality Seed & Do Your Homework on Best Varieties



BEST BUY



Spring greening of Riviera (R), Common (C), Wrangler (W) and various % seeded bermudagrass blends in late April in Blacksburg, VA.

Pure Live Seed Calculations

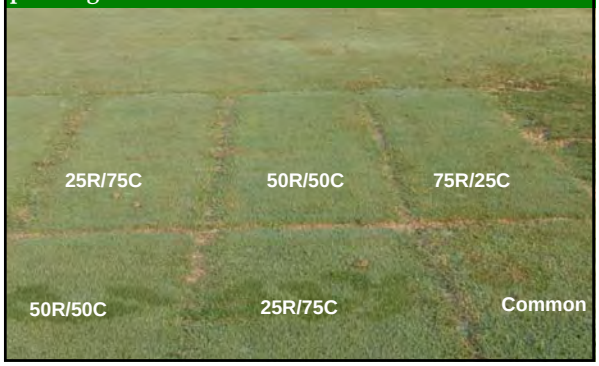
Cavalier Special Blend
Landscape Supply Inc.
Charlottesville, VA — Lot # 325
Test Date: 8/16

Grasses	Germination	
34.62% Cantrun perennial ryegrass	80%	= 27.7
37.33% Cantkick perennial ryegrass	80%	= 29.9
21.97% Cantpass perennial ryegrass	75%	= 16.5
		74.1%

Other ingredients
1.19% Other Crop Seed
4.89% Inert Matter

So, if your recommended rate for seeding is 6 lbs PLS/1000 sq ft, you need 6 ÷ 0.74 = 8.1 lbs of Cavalier Special for every 1000 sq ft. No consideration of PLS? Actually will apply only 4.4 lbs/1000 sq ft with every 6 pounds of this seed... only about 75% of your target rate!

Visual turf quality of Common (C), and Riviera/Common (R/C) blends in August, 2 years after planting .



Procedures used: Northbridge Sprigs

- *Prepared area*
  - *Plowed/Graded*
  - *Soil Test*
  - *Added Lime per soil test*
- *29 March 2016*
  - *Identified test plots 10′ X 10′, 12 each*
  - *Applied Quinclorac, rate 1 Lbs. per acre*

Bermuda Test 2016 Year 1

Sprigs and Seed

Establishment <u>Without</u> Irrigation

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Procedures used: Northbridge Sprigs

30 March 2016

- *Ran sprigs through chipper*
- *Hand spread sprigs: 12 blocks*
  - *Rate 1 to 10 (10 sq. ft. sod to 100 sq. ft. area)*
- *Ran Slicer over all blocks (two times)*
- *Tracked sprigs in with tractor tires*
- *Covered 6 blocks with ¼ inch compost*
- *Covered 6 blocks with growth blankets*

Can you establish Bermuda grass without Irrigation?

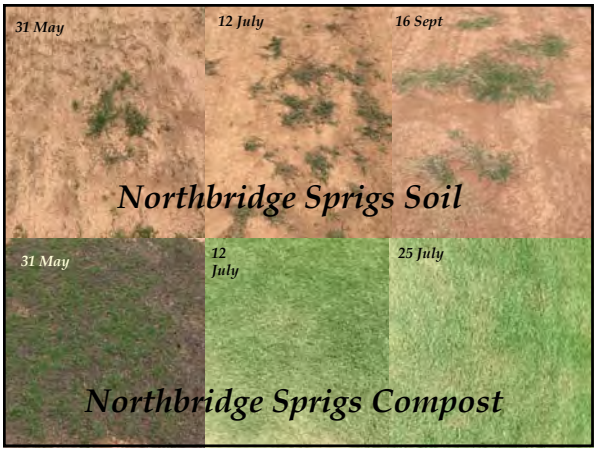
- *Test scenario: Replicate 4 options with 3 test areas per option.*
  - *Sprigs*
    - *Soil only*
    - *Soil with growth blankets*
    - *Cover sprigs with ¼ inch compost*
    - *Cover with ¼ inch compost and cover with growth blankets*
  - *Seed*
    - *Soil only*
    - *Soil with growth blankets*
    - *Cover seeds with ¼ inch compost*
    - *Cover with ¼ inch compost and cover with growth blankets*

Dormant Northbridge Bermuda Making Sprigs

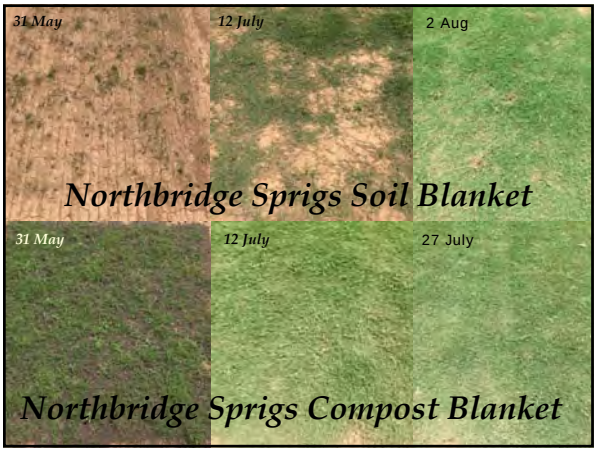
Applying Northbridge sprigs to test blocks
Rate 1-10

Install Growth Blankets

Slicing in and tracking in sprigs



Applying ¼ inch Compost to 6 blocks



Northbridge Bermuda Grass Sprig Test % Coverage

Date	S-1	CB-2	C-3	SB-4	C-5	CB-6	S-7	SB-8	S-9	C-10	CB-11	SB-12
13-May	0.31	28.52	9.16	1.6	12.08	29.62	0.3	1.2	0.17	7.65	28.19	3.29
20-May	0.33	15.25	6.26	0.05	7.04	25.15	0.18	0.04	0.02	8.28	31.85	0.45
31-May	1.14	49.62	28.8	0.16	38.02	61.45	0.23	0.36	0.11	23.53	61.41	5.58
3-Jun	1.95	62.36	25.46	2.44	60.75	63.2	0.85	3.67	0.06	27.69	56.64	5.94
10-Jun	1.35	67.71	50.6	1.74	57.43	60.72	3.5	3.87	0.45	35.36	68.05	7
17-Jun	4.57	71.97	48.7	3.72	70.36	60.54	3.92	18.4	4.36	51.62	64.03	8.71
24-Jun	12.64	92	86.2	20.03	95.7	94.19	16.88	24.47	7.71	88.64	90.7	33.18
1-Jul	0.29	93.79	93.66	15.75	99.51	98.77	0.21	38.42	4.46	98.27	96.84	53.18
12-Jul	4.57	99.77	97.78	52.14	99.43	97.93	4.93	86.68	10.85	99.45	99.82	87.82
18-Jul	8.61	99.99	99.94	60.85	99.93	99.33	3.12	88.15	11.24	98.83	99.55	94.12
22-Jul	1.49	97.33	97.67	43.86	98.09	96.43	4.52	85.6	13.79	96.43	97.75	85.89
27-Jul	3.91	99.73	99.63	58.15	99.8	99.22	5.88	81.65	15.96	99.19	99.65	90.63
2-Aug	4.96	100	100	95.97	100	100	7.63	98.27	23.51	100	100	99.5
9-Aug	7.26	100	100	100	100	100	6.56	100	40.27	100	100	100
17-Aug	4.98	100	100	100	100	100	4.38	100	40.77	100	100	100
23-Aug	10.93	100	100	100	100	100	7.88	100	54.16	100	100	100
31-Aug	10.56	100	100	100	100	100	11.03	100	45.21	100	100	100
16-Sep	7.13	100	100	100	100	100	11.58	100	60.1	100	100	100
14-Oct	14.23	100	100	100	100	100	11.58	100	59.8	100	100	100

100% Coverage

24 June: Common Bermuda and weeds very high

1 July: Weeds removed

S - Soil

C - Compost

SB - Soil Blanket

CB - Compost Blanket

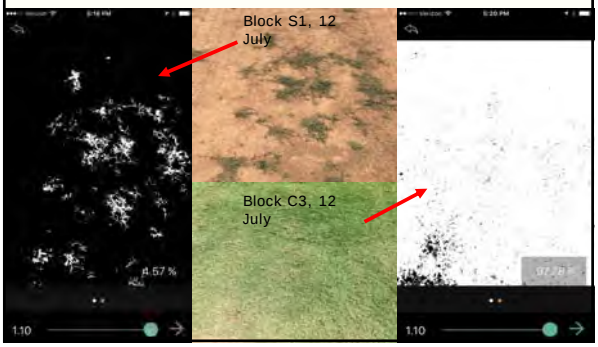
Procedures used: Riviera Seed

30 March 2016

- *Seed all blocks*
  - *Rate: 1.06 Lbs. per 1000 sq. ft. = 1.75 oz. per test plot*
  - *1.49 oz. pure live seed*
- *Tracked seed in with tractor tires*
- *Covered 6 blocks with ¼ inch compost*
- *Covered 6 blocks with growth blankets*

How do you determine the Percentage of Coverage? There is an App for that….Canopeo

Oklahoma State University



Seeding at 1.06 Lbs. per 1000 Sq. Ft.

Covering Blocks with ¼ inch Compost

Procedures used: Riviera Seed

- *Prepared area*
  - *Plowed/Graded*
  - *Soil Test*
  - *Added Lime per soil test*
- *29 March 2016*
  - *Identified test plots 10′ X 10′, 12 each*
  - *Applied Quinclorac, rate 1 Lbs. per acre*

Installing Blankets

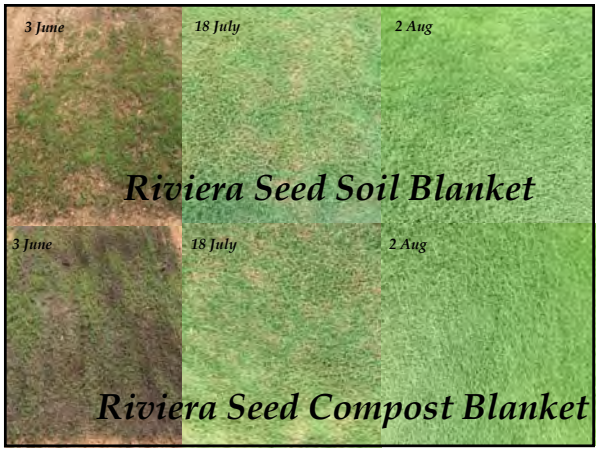
YEARLY CLIMATOLOGICAL SUMMARY FOR 2016

Total Rain

MON	MEAN TEMP	HIGH	DATE	LOW	DATE	HEAT DEG DAYS	COOL DEG DAYS	RAIN	WIND SPEED AVG	HI	DATE	DOM DIR	MEAN BAROM	MEAN HUM
1	34.4	62.0	1/31/16	12.8	1/25/16	922	0	2.04	2	33	1/12/16	SSW	30.00	47
2	39.3	66.6	2/28/16	8.8	2/14/16	717	0	1.96	2	37	2/13/16	SSW	29.98	47
3	52.8	81.8	3/9/16	21.8	3/3/16	411	32	1.19	3	35	3/31/16	SSW	29.97	59
4	56.0	85.7	4/18/16	24.4	4/6/16	319	49	1.49	3	41	4/2/16	SSW	29.97	56
5	62.7	88.0	5/28/16	39.1	5/16/16	162	96	5.25	1	33	5/15/16	SSW	29.91	75
6	74.1	94.3	6/11/16	52.2	6/9/16	8	281	3.58	1	29	6/8/16	SSW	29.87	67
7	78.4	96.8	7/25/16	63.4	7/21/16	0	415	6.28	1	35	7/18/16	SSW	29.89	74
8	78.0	94.9	8/26/16	63.1	8/8/16	1	404	4.48	1	31	8/15/16	SSW	29.96	77
9	72.4	93.2	9/9/16	55.7	9/5/16	12	235	3.93	2	29	9/7/16	NNE	29.99	76
10	59.9	87.8	10/19/16	34.7	10/26/16	214	56	0.76	2	38	10/9/16	NNW	30.06	73
11	51.4	80.9	11/2/16	21.4	11/22/16	379	12	0.70	1	33	11/20/16	NNW	30.04	44
12	43.6	62.6	12/1/16	11.2	12/16/16	325	0	0.00	1	28	12/15/16	NW	30.06	19
TOT	59.5	96.8	7/25/16	8.8	1/1/16	3468	1581	31.66	2	41	4/2/16	SSW	29.97	62

HEAT BASE: 65.0
COOL BASE: 65.0

Average Rain
March: 3.45″
April: 3.31″



Can you establish Bermuda grass without irrigation?

Yes……But

First year trials very positive…. will run them again in 2017. Trial showed that results with compost alone almost identical with blankets and compost.

Riviera Bermuda Grass Seed Test % Coverage

Date	CB-1	S-2	SB-3	C-4	SB-5	C-6	S-7	C-8	CB-9	CB-10	SB-11	S-12
16-May	2.53	0	0.63	0.09	0.4	0.11	0	0.13	5.49	9.67	1.23	0
3-Jun	2.94	0	1.97	1.27	24.88	1.59	0.53	3.51	9.21	25.94	17.55	0.04
10-Jun	12.26	0.02	1.48	4.02	48.3	14.34	2.53	16.33	25.12	42.42	27.5	0.14
17-Jun	38.02	2.2	49.85	11.78	54.42	29.9	4.46	38.1	55.13	81.2	62.9	2.48
24-Jun	60.59	6.41	77.11	56.16	85.94	66.17	14.33	82.84	90.15	96.28	95.74	12.55
1-Jul	77.4	26.83	95.82	55.51	98.47	89.19	36.48	98.92	96.99	99.75	99.73	34.83
12-Jul	94.89	84.36	99.38	85.51	99.34	99.48	68.98	99.6	98.46	99.55	97.47	74.14
18-Jul	96.03	94.04	98.57	99.08	98.71	99.56	88.62	99.53	98.5	97.83	92.89	81.6
22-Jul	99.05	94.84	99.65	99.34	99.64	99.78	97.5	99.44	99.53	99.73	97.05	84.81
27-Jul	99.83	99.73	99.03	99.86	99.81	99.54	99.36	99.77	99.76	99.94	99.67	89.62
2-Aug	100	100	100	100	100	100	100	100	100	100	100	96.92
9-Aug	100	100	100	100	100	100	100	100	100	100	100	99.92

100% Coverage

S - Soil
C - Compost
SB - Soil Blanket
CB - Compost Blanket