

Systematic improvement of golf course conditions

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Asian Turfgrass Center
www.asianturfgrass.com

PACE Turf
www.paceturf.org



RIZAP KBC オガスタ ゴルフトーナメント 2017

MUFG
三菱UFJ信託銀行

日本生命
NIPPON LIFE

KIRIN

RIZAP

大会誌誌誌
二階堂

サロバ

TOYOTA

DAICHI
第一交通産業

RIZAP
KBC
オガスタ
ゴルフ
トーナメント
2017



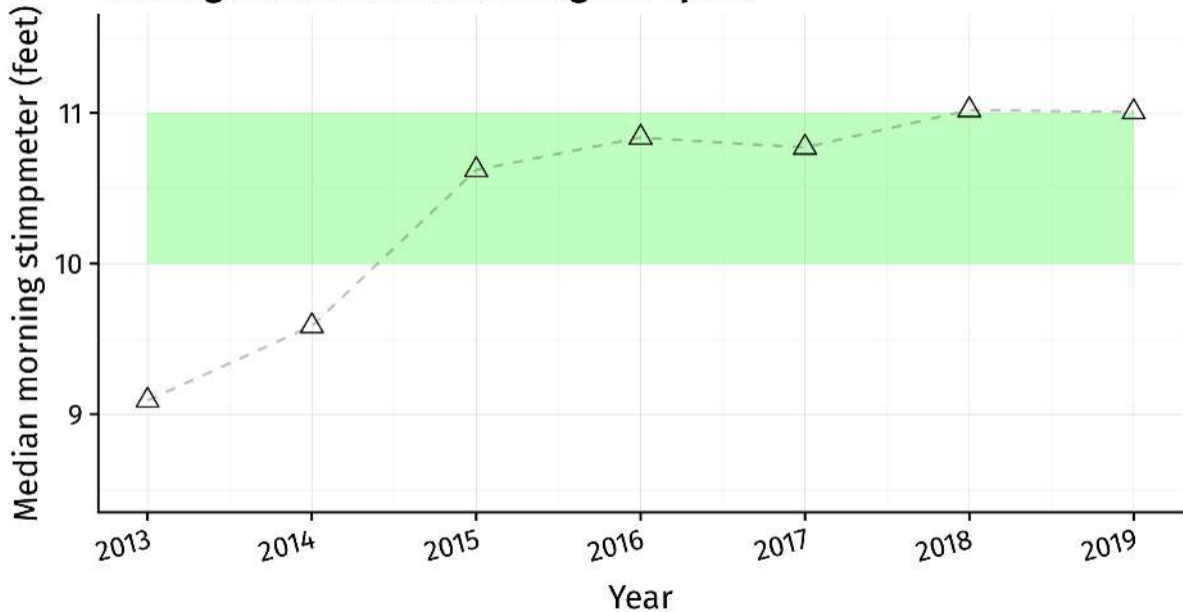
Measure playing conditions

What to measure?

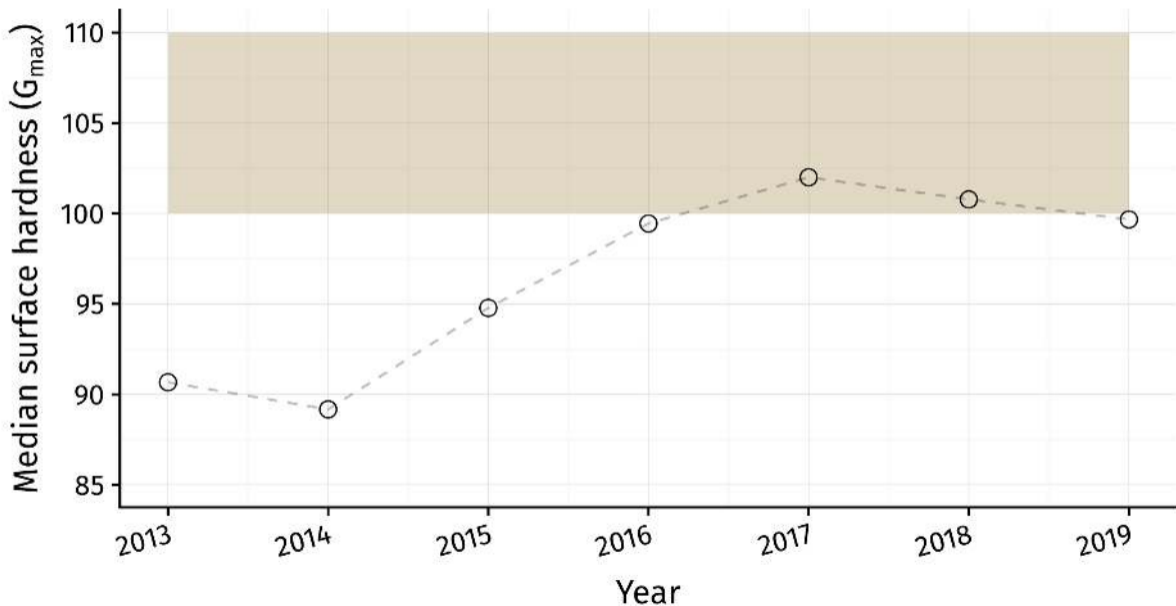
- Stimpmeter
- Bobble test (smoothness, trueness)
- Surface hardness (firmness)



KBC Augusta tournament week green speed



KBC Augusta tournament week surface hardness



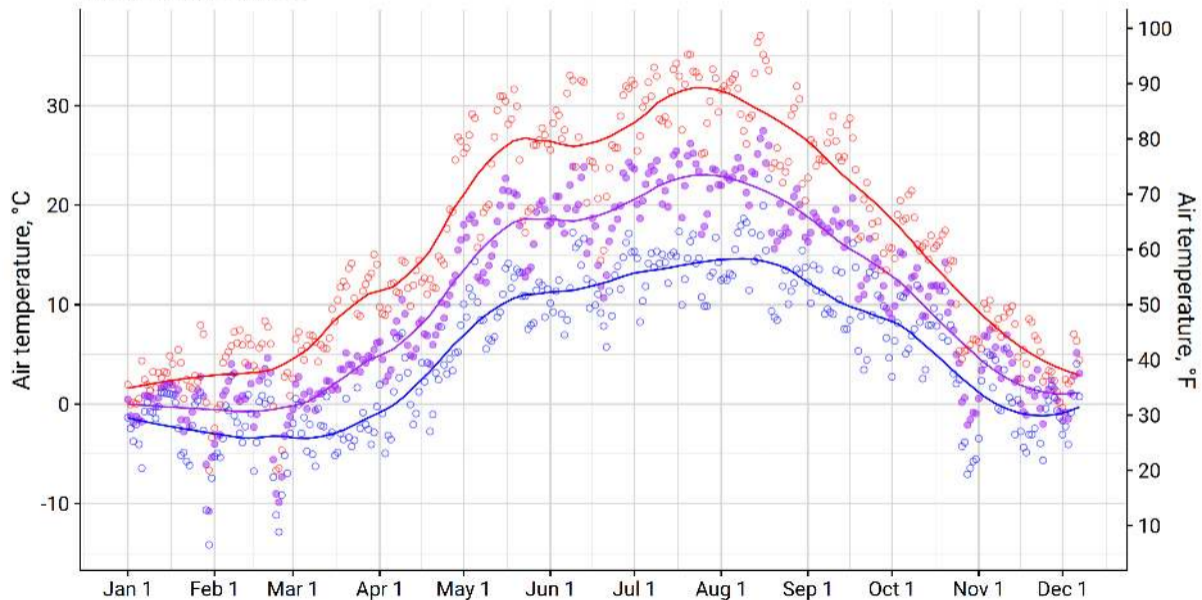
Know (and question) the N rate



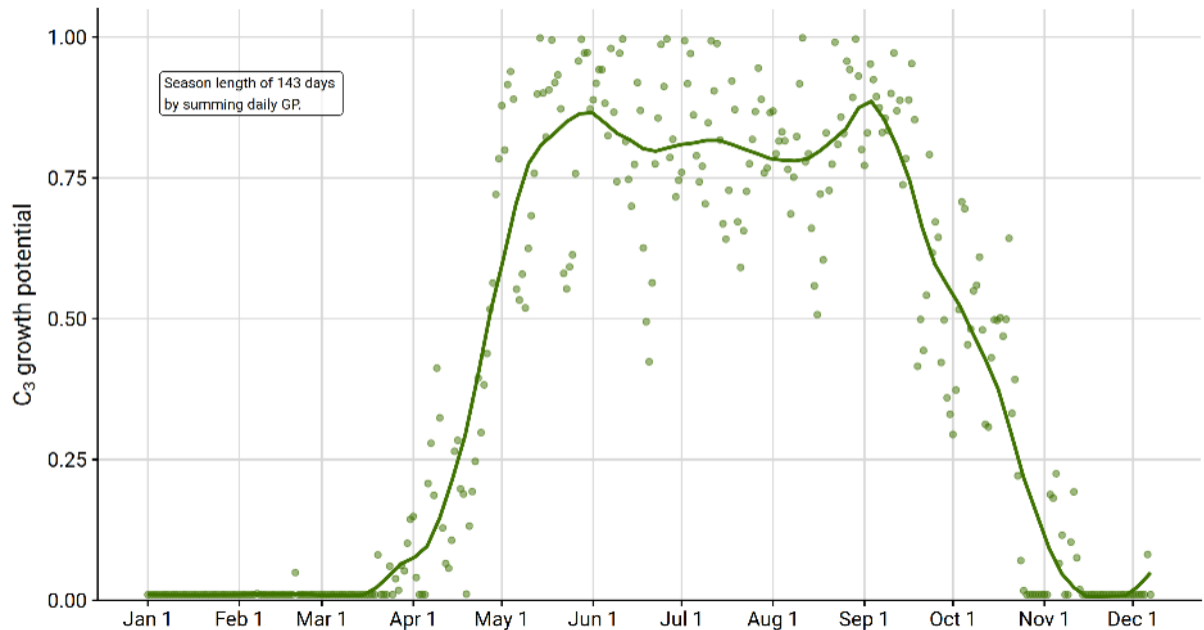


Daily temperature summary in 2023

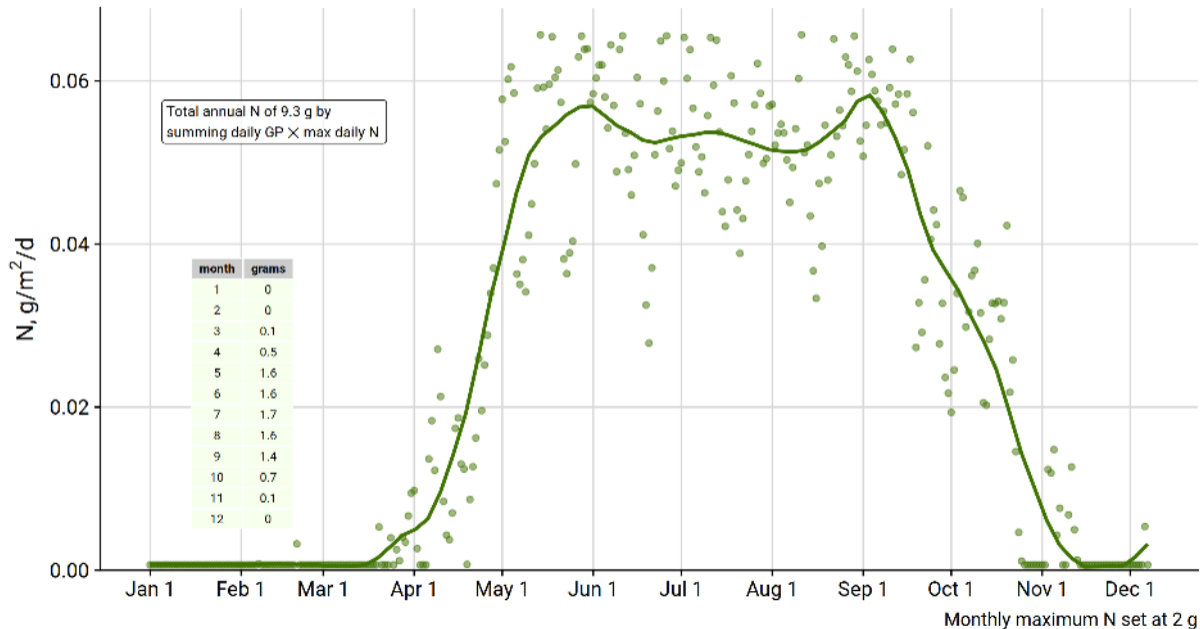
The Okanagan Golf Club




Growth potential at The Okanagan Golf Club in 2023



Predicted daily N by GP at The Okanagan Golf Club in 2023



Use PGRs with purpose



Getting
answers to
all my PGR
questions

Bill Kreuser, Ph.D.

Golf Course Superintendent at Ager Jr. GC



Measure the clipping volume





Christofer Andersson

@ChristoferAnde1



Easy way of measuring clippings. Picture uploaded to Slack. 3 man operation, 4 greens every time the mow.

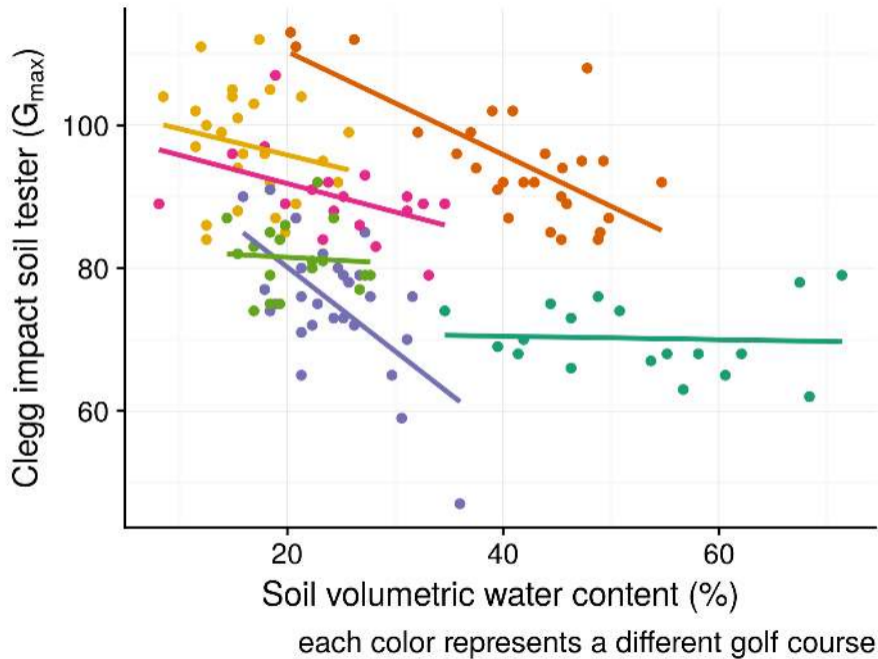


Example uses for the data

- Fine tune nutrient supply based on harvest
- When to mow again based on growth
- Growth regulator effect
- Topdressing requirement

Measure the soil water content





Measure soil nutrients

Results of effective soil testing

1. You apply the correct fertilizer.
2. The grass is supplied with all the nutrients it can use.
3. Unnecessary fertilizer applications are eliminated.
4. Reduced risk of N & P pollution.

Potassium (K)

mg/kg

100

75

50

25

0

2013-05-13

2014-07-08

2015-06-10

2016-05-13

2017-08-09

2018-06-06

2019-05-16

2020-04-22

2021-04-01

2022-02-21

65

50

44

54

62

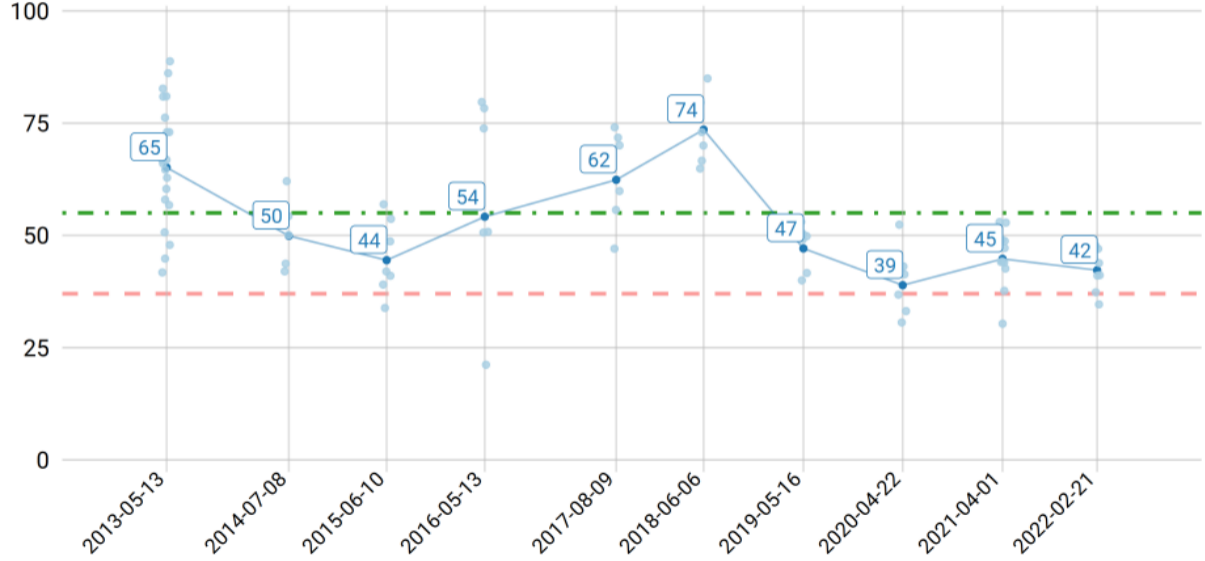
74

47

39

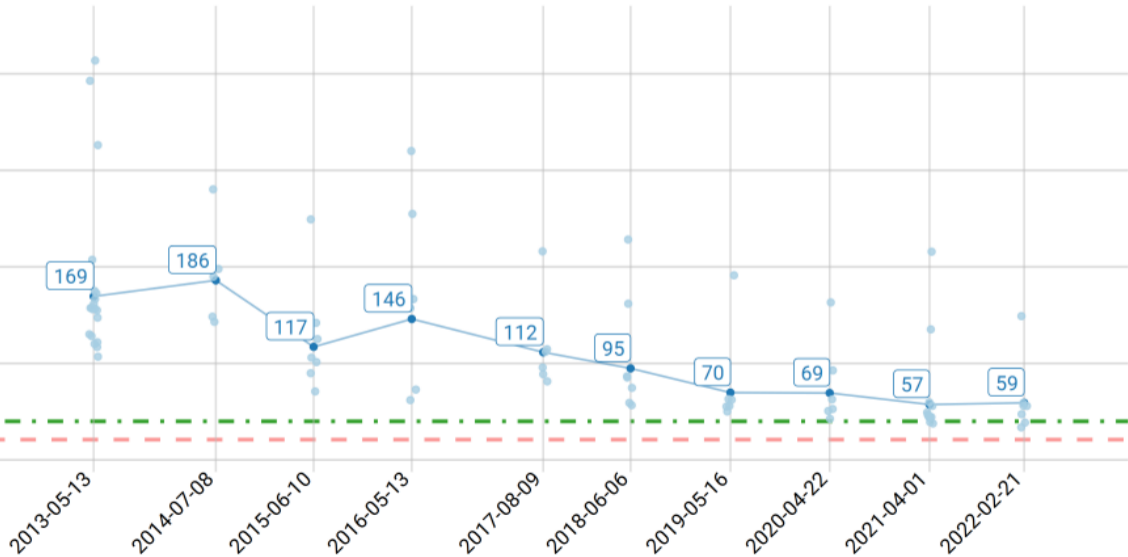
45

42



Phosphorus (P)

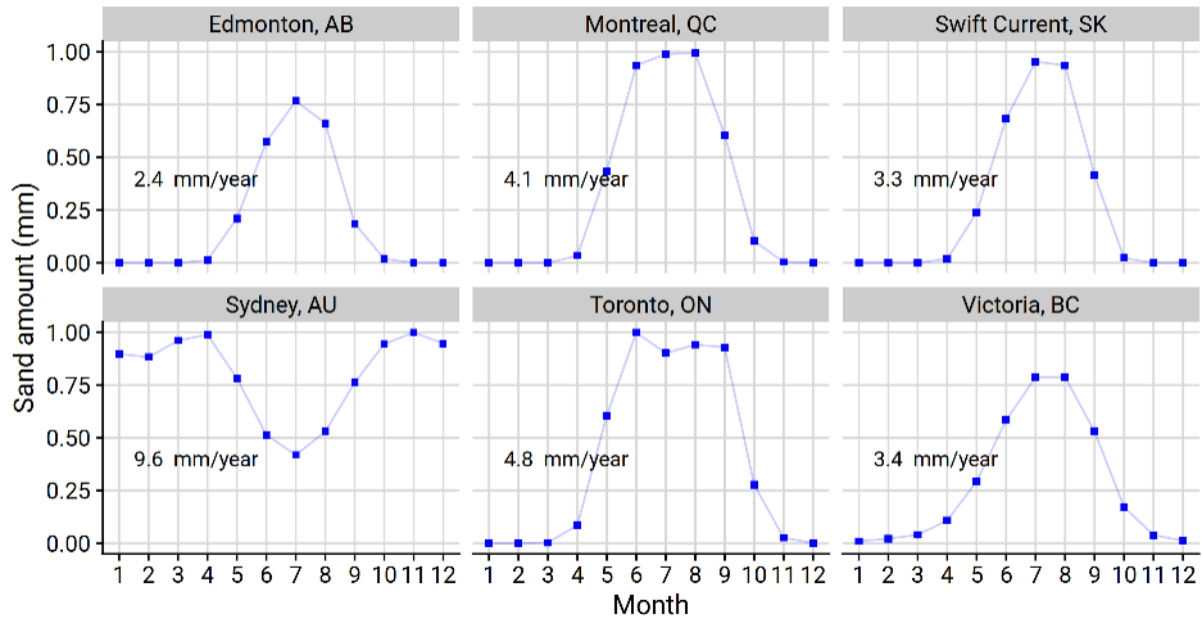
mg/kg




Know the sand application rate



Temperature-based growth potential prediction of sand topdressing



Measure total organic material
(OM246)



0 to 0.8
inches

0 to 2 cm
OM2

0.8 to 1.6
inches

2 to 4 cm
OM4

1.6 to 2.4
inches

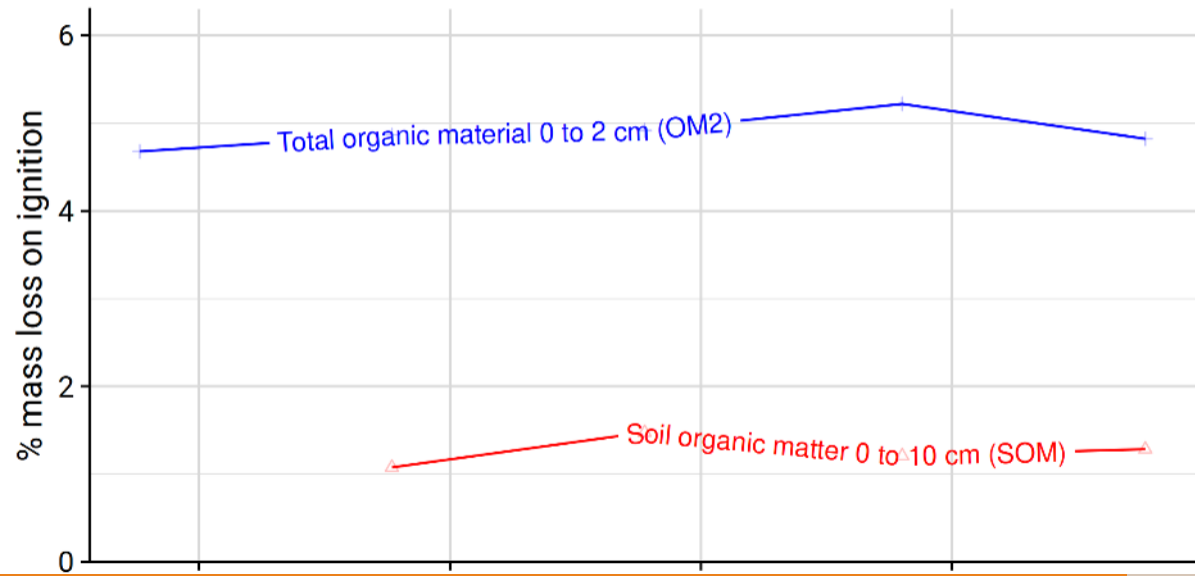
4 to 6 cm
OM6





Creeping bentgrass putting greens

samples from Hazeltine National GC



Continuous improvement system components

- Measure playing conditions
- Know (and question) the N rate
- Use PGRs with purpose
- Measure the clipping volume
- Measure the soil water content
- Measure soil nutrients
- Know the sand application rate
- Measure total organic material (OM246)

Online handout with slides & more info



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