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## Nutrient Management Choices

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# Nutrient Management Choices

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## Chart Book Recommendations

- These are the standard that MDAR will compare against
  - Recommendations should support crops as large as 500 bbl/acre
- Choices of how to deliver the nutrients
  - Industry standard has been fast-acting granulars
  - Some growers have incorporated some slow-acting granular
  - Controlled Release (granular) - some forms can be used in a single application
  - Recent uptick in use of liquids (designed to feed the roots)
    - Mineral-based
    - Organic (mainly fish)

## Comparing Common Choices

- Cranberry Station Bogs
  - We have been using 2 granular applications
    - 10.12.24 part slow SCU (~50%) at roughneck (100 lbs/a)
    - 18.8.18 soluble granular at 75% bloom (early set)
- 2016 Comparisons
  - Our program
  - All controlled release 16.7.16, applied in May
  - All liquid (Loveland products), 5 applications
  - Spring and post-set fish with 18.8.18 at bloom/set

# Fish fertilizer plot work

	Yield (bbl/a)			% Rot			ratio new:old growth		
	2014	2015	2016	2014	2015	2016	2014	2015	2016
T1 - std. gran.	<b>274</b>	<b>469</b>	<b>465</b>	<b>1.6</b>	<b>14.5</b>	<b>41.6</b>	0.34	<b>0.48</b>	0.39
T2 - low rate fish	209	<b>239</b>	<b>231</b>	0.5	<b>1</b>	<b>11.6</b>	0.25	<b>0.29</b>	0.29
T3 - higher rate fish	<b>204</b>	<b>256</b>	<b>257</b>	<b>0.2</b>	<b>1.4</b>	<b>17.1</b>	0.22	<b>0.3</b>	0.38
T4 - hybrid fish	245	403	<b>339</b>	0.9	<b>4</b>	<b>26.5</b>	0.28	<b>0.34</b>	0.33

	No. apps	lbs/acre N		
		2014	2015	2016
T1 - std. gran.	2	32.5	37	37
T2 - low rate fish	5	3	4.2	13.6
T3 - higher rate fish	4	4.6	4.6	14.6
T4 - hybrid fish	3/1	15.9	20.4	25.9

Key – black bold, largest  
 black not bold, not stat. diff.  
 red bold – stat. lower

2016 all got 100 lbs/a 10.12.24

# Fish fertilizer compare at Rocky

Location	Actual yield of section (bbl/a)	Yield from samples (bbl/a)	% Rot	ratio new:old growth
North	285	359	3.4	0.32
South	189	391	3.9	0.33

Location	Fertilizer	No. apps	lbs/acre		
			N rate	P rate	K rate
North	Std. granular	2	32.5	9.7	38.6
South	Fish/gran.	3	29	6.1	23

## What did we learn?

- Early and late fish may be able to replace spring granular
  - 5 gal per acre at roughneck and post set
  - 18-18-18 at late bloom/early set
  - Rate adjustment may be needed
- Fish *may* suppress rot
  - Plot work in 2015 and 2016
  - Can't see a difference if pressure is low
    - Plots in 2014
    - Rocky in 2016

## Howes fertilizer compare at SB

Location	Yield (bbl/a)	% Rot	ratio new:old growth
Section 1	190	0.8	0.55
Checkerboard	191	0.7	0.58

Location	Fertilizer	No. apps	lbs/acre		
			N rate	P rate	K rate
Section 1	Liquid	5	31.2	4.4	17.3
Checkboard	CRF	1	32	6.2	26.6

# Stevens fertilizer compare at SB

Key – black bold, largest  
red bold – stat. lower

Location	Yield (bbl/a)	% Rot	ratio new:old growth	Tissue %N
Section 3	<b>187</b>	4.4	<b>0.27</b>	<b>0.87</b>
Checkerboard	226	1.9	0.57	0.92
Section 4	<b>281</b>	4.1	0.42	0.99

Location	Fertilizer	No. apps	lbs/acre		
			N rate	P rate	K rate
Section 3	Liquid	5	<b>31.2</b>	4.4	17.3
Checkboard	CRF	1	32	6.2	26.6
Section 4	Std. granular	2	37	10.6	42.3

## What did we learn?

- When changing to CRF from fast-acting materials N rate should be reduced with caution
  - State Bog Stevens in 2016; 5 lb less N had lower yield
- Liquid programs can work as well as granular CRF
  - State Bog Howes in 2016
  - Loveland liquid vs. 16-7-16 CRF; yield was similar at similar N rate

## What did we learn?

- We still have more to learn regarding liquids
  - On Stevens at State Bog; liquid had reduced yield compared to CRF with similar N rate and much lower yield than granular applied at 5 lb/a more N
  - Upright growth was stunted

## Next steps for liquids?

- Use liquid like fish?
  - Supplement in spring and late summer with granular at set
- Gather more information from grower experiences
  - Essential for going all liquid