

Nitrogen Management for Organic Strawberry Production

Update

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Overview

- *Nitrogen is critical limiting factor*
- *Certified organic N more costly, uncertain*
- *N mineralization determines nitrate availability*
- *Different materials with varying availability*
- *Field management also critical*
 - *nitrate moves with water*



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National Organic Program

Welcome to the National Organic Program



What is organic?

Organic production is a system that is managed in accordance with the [Organic Foods Production Act \(OFPA\) of 1990 \(PDF\)](#) and regulations in Title 7, Part 205 of the Code of Federal Regulations to respond to site-specific conditions by integrating cultural, biological, and mechanical practices that foster cycling of resources, promote ecological balance, and conserve biodiversity. The National Organic Program (NOP) develops, implements, and administers national production, handling, and labeling standards.



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National Organic Program

Welcome to NOP-AQSS ("Access")

What is NOP-AQSS? – **A**nswers to **Q**uestions on [NOP] **S**tandards by NOP **S**taff

Using the list below, select a topic related to your question(s).

When NOP modifies a response or issues new guidance concerning the NOP regulations, an alert will be posted in NOP News.

Please select a topic:

- [Accreditation](#)
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See Also

- [NOP Reading Room](#)
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Additional Information

- [List of USDA Accredited Certifying Agents](#)
- [NOP Document Control Master List](#)
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Welcome to the Organic Materials Review Institute

Founded in 1997, the Organic Materials Review Institute (OMRI) provides organic certifiers, growers, manufacturers, and suppliers an independent review of products intended for use in certified organic production, handling, and processing. OMRI is a 501(c)3 nonprofit organization. When companies apply, OMRI reviews their products against the National Organic Standards. Acceptable products are OMRI Listed® and appear on the *OMRI Products List*. OMRI also provides subscribers and certifiers guidance on the acceptability of various material inputs in general under the National Organic Program.

How Can We Help You?

Find Products

OMRI® Listed products undergo a rigorous review to ensure that they comply with USDA organic standards. The online list of products is updated regularly to contain the most current information. Search our Products List to [find products](#) or [subscribe for advanced features](#).

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The OMRI review service verifies your credibility and allows customers to confidently choose your product for organic production. Application forms are available for download when you submit your application kit order. Apply to [become OMRI listed!](#)

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OMRI was founded by organic certifiers and continues to serve certifiers and their clients with crucial information to ensure organic integrity. The OMRI Certifier Subscription provides you access to our materials review expertise and many advanced online features. [Subscribe today as a certifier.](#)

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News

OMRI is Hiring for Two Review Program Positions

(July 8, 2010) Our growing list of products means a growing staff. OMRI is seeking to fill two key positions on our team. Please see the...

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OMRI Welcomes Our New Executive Director

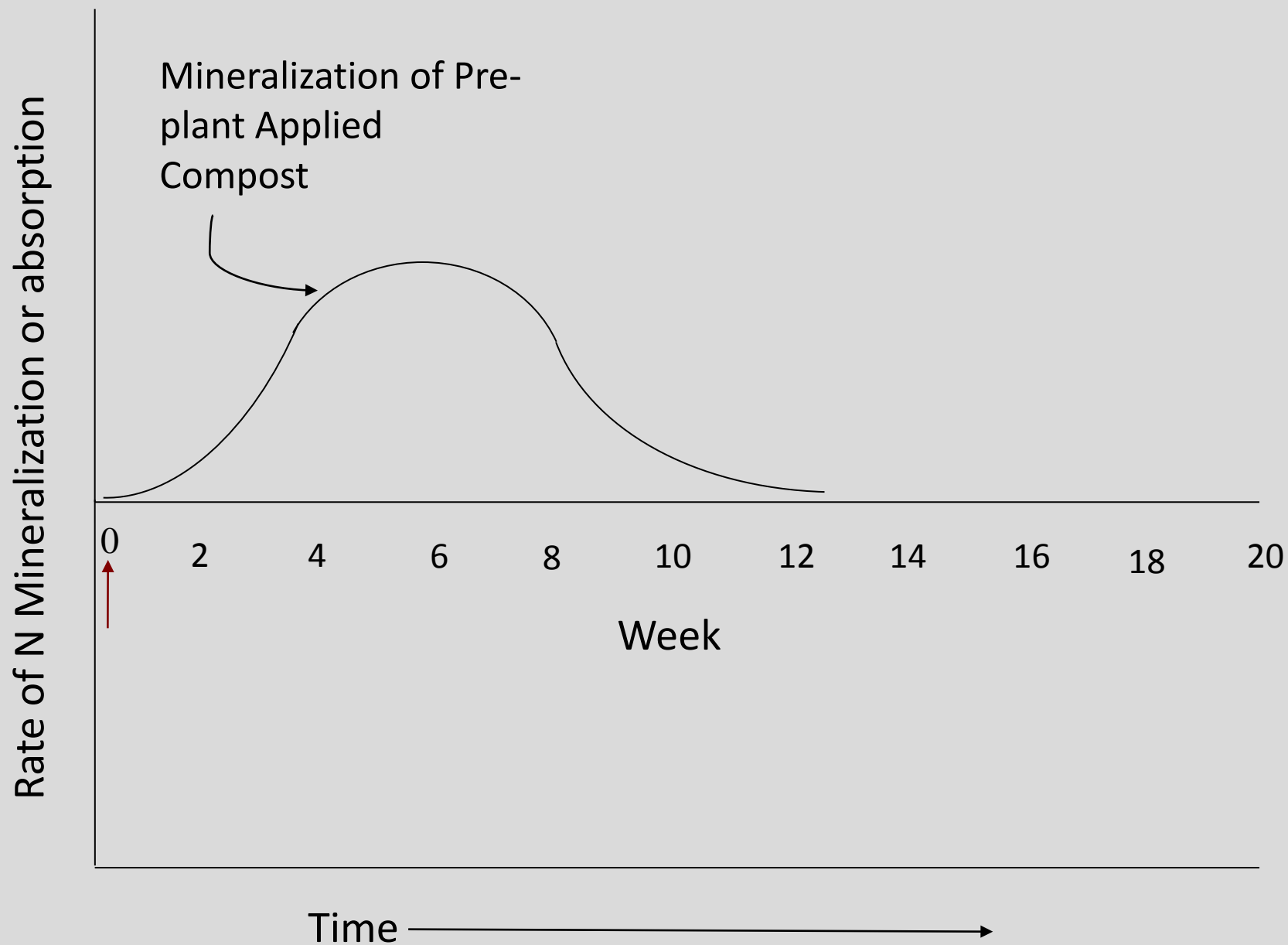
(July 6, 2010) We, the OMRI Board of Directors, are excited to share with you this important news as a supplement to our recently released...

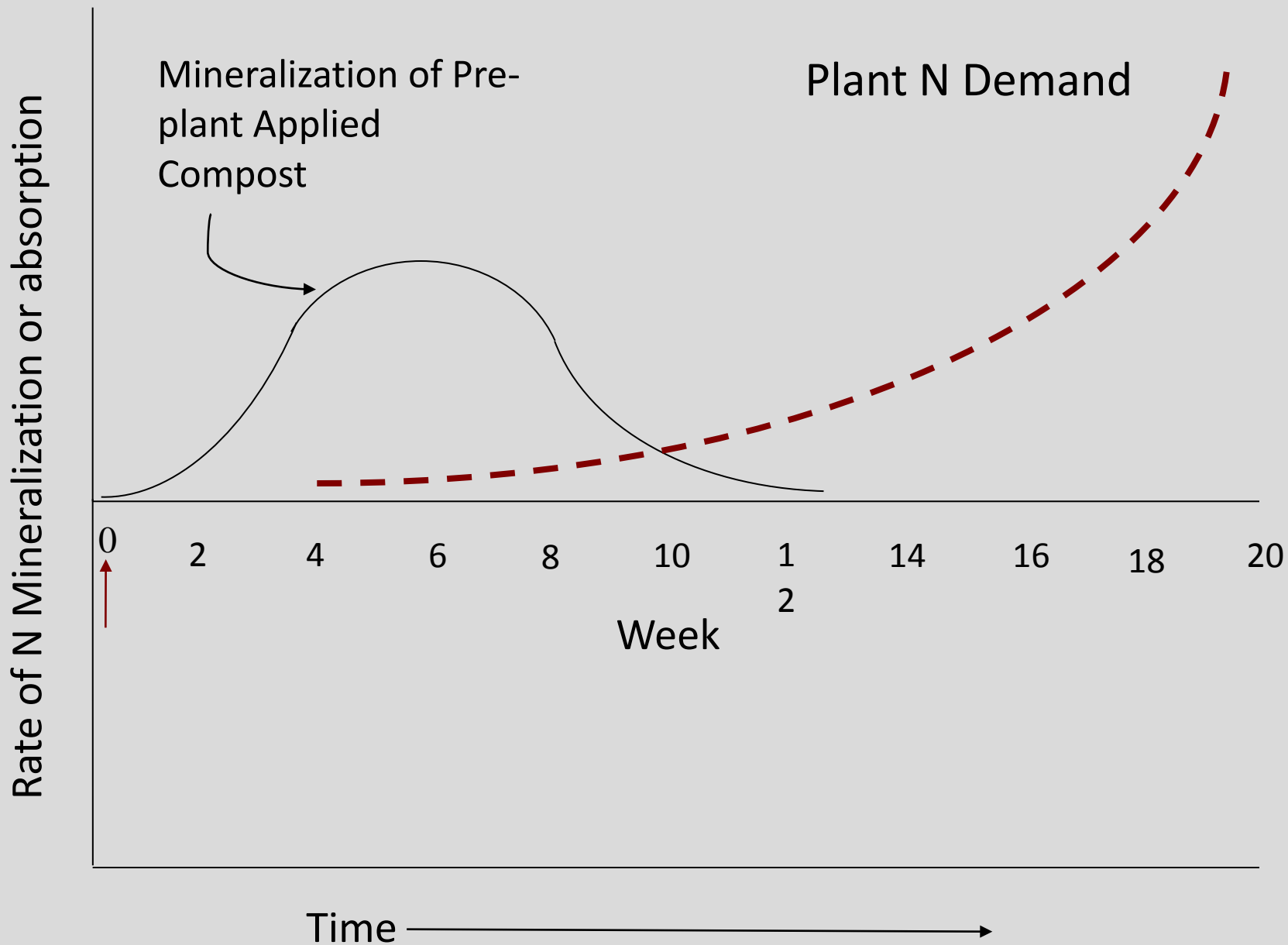
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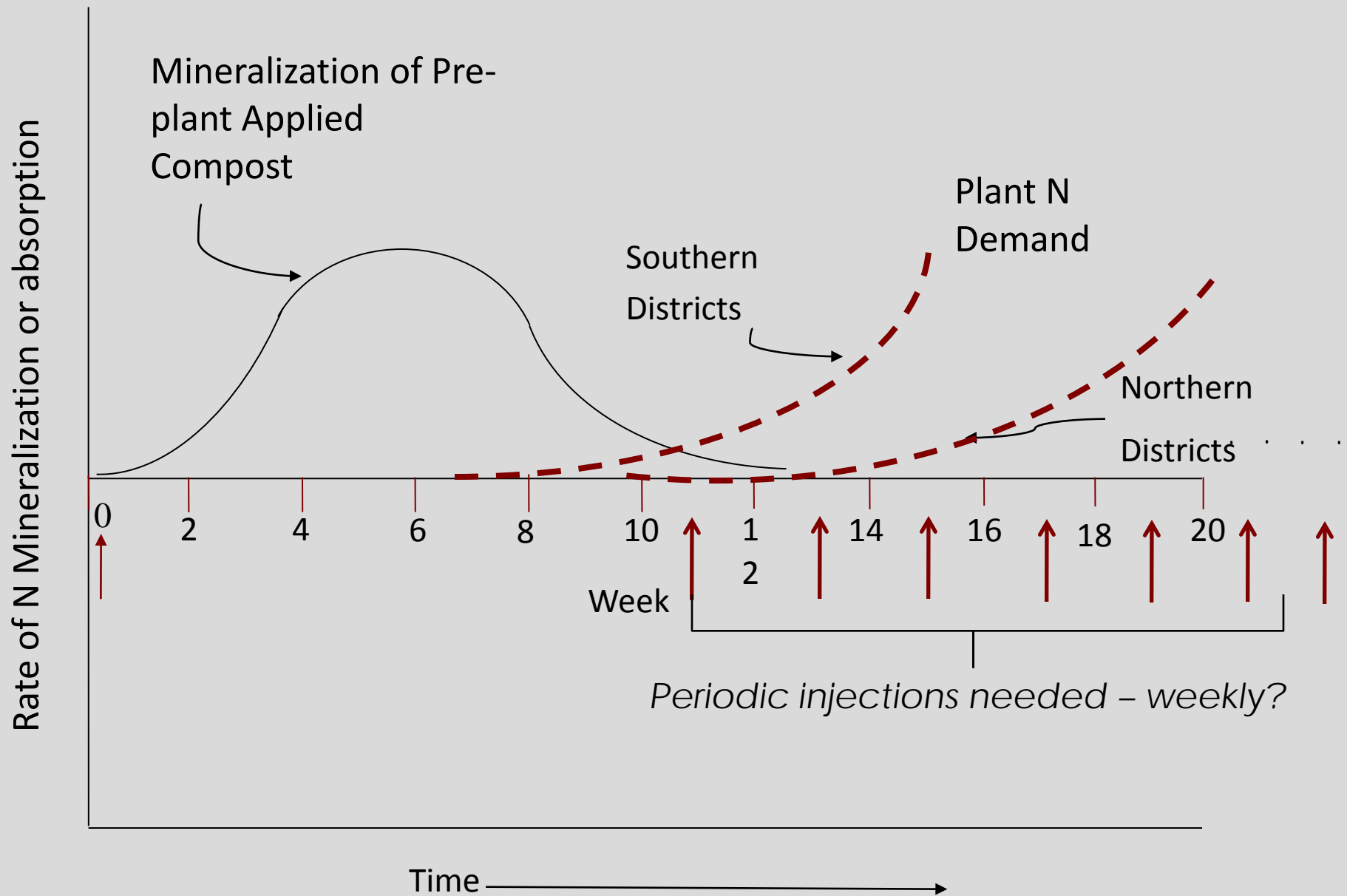
NOP Allowance of Green Waste

(April 23, 2010) OMRI has previously announced that three composts had been prohibited by









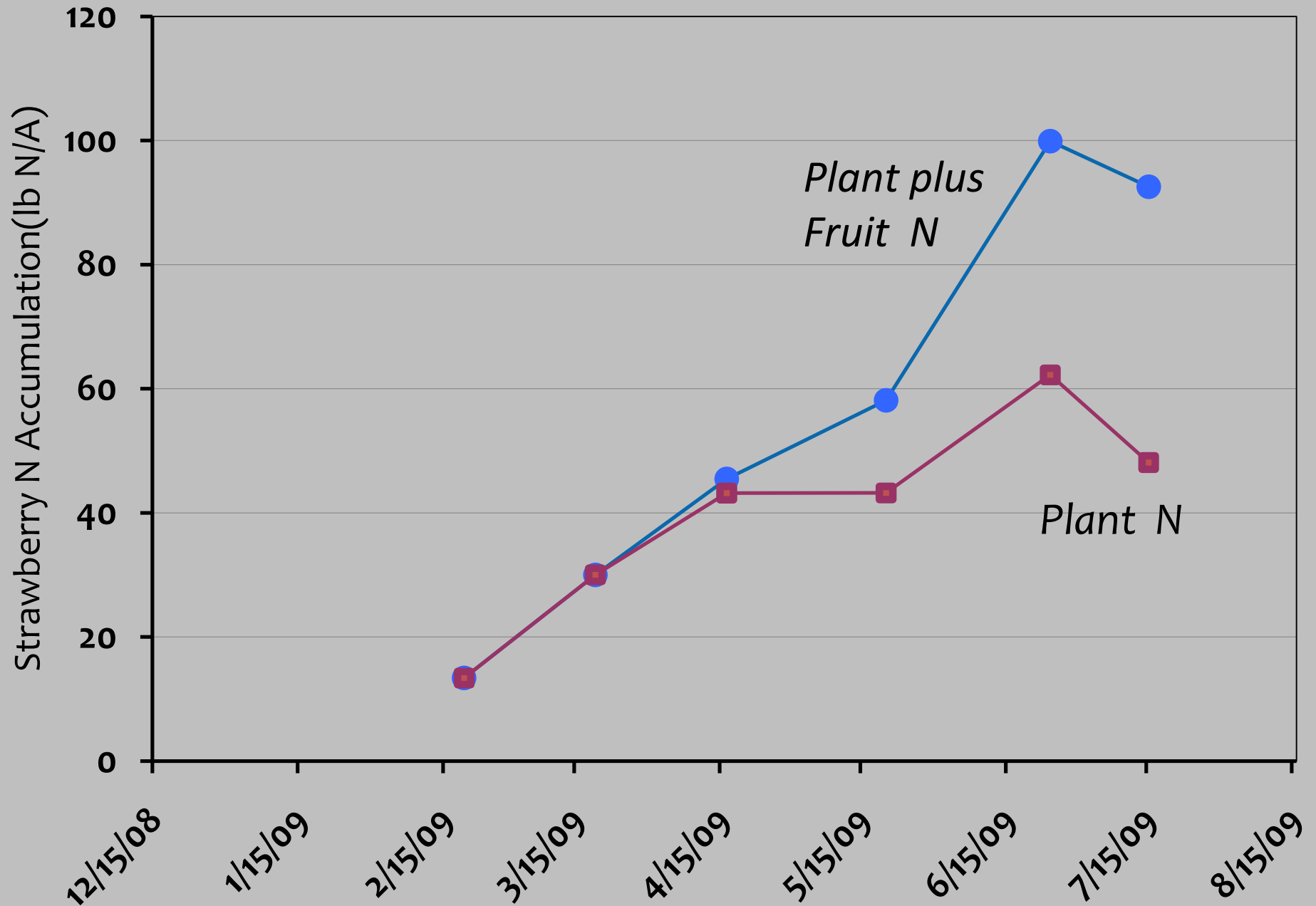
Name	description	label N %	actual % total N	% Mineral N by lab analysis of original material	% N in solution or particulate matter small enough to pass through a media filter	%N possibly lost in filtration in drip system
Agrolizer	fish	6	5.1	70.0	4.5	0.6
Biolyzer	grain ferment	2.5	2.6	12.4	2.0	0.6
Phytamin 801	guano, fish	6	6.0	5.5	5.5	0.5
Phytamin 522	fish	5	5.4	26.0	4.8	0.6
Phytamin 434	guano, fish	4	3.5	62.5	3.1	0.4
Marizyme	fish	4	4.2	94.3	4.0	0.3
Mega Green	catfish	2	1.8	3.5	1.5	0.3
Phytamin 421	soy meal / plant extracts	4	4.0	24.3	3.2	0.7

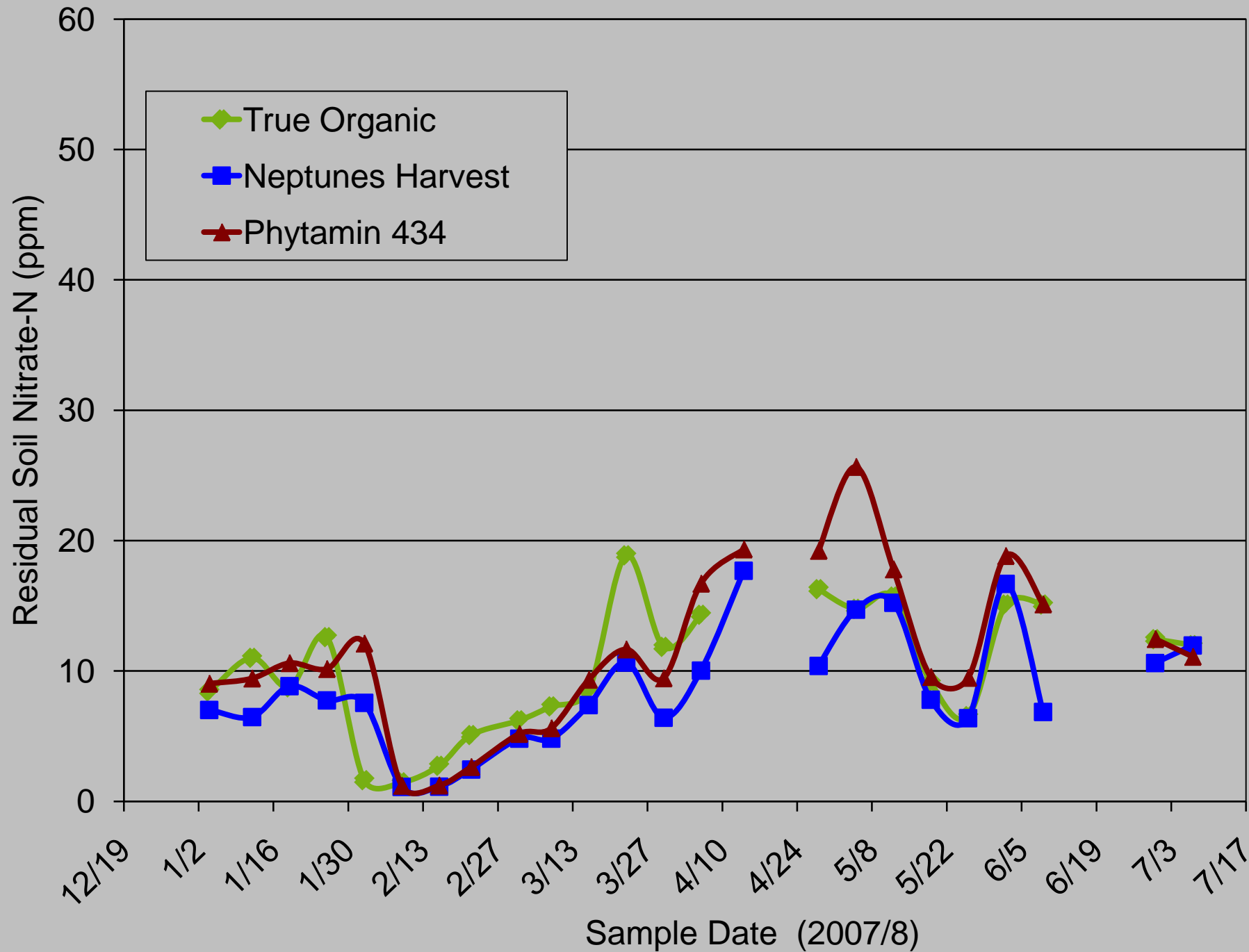
Source- Tim Hartz, UC-Davis

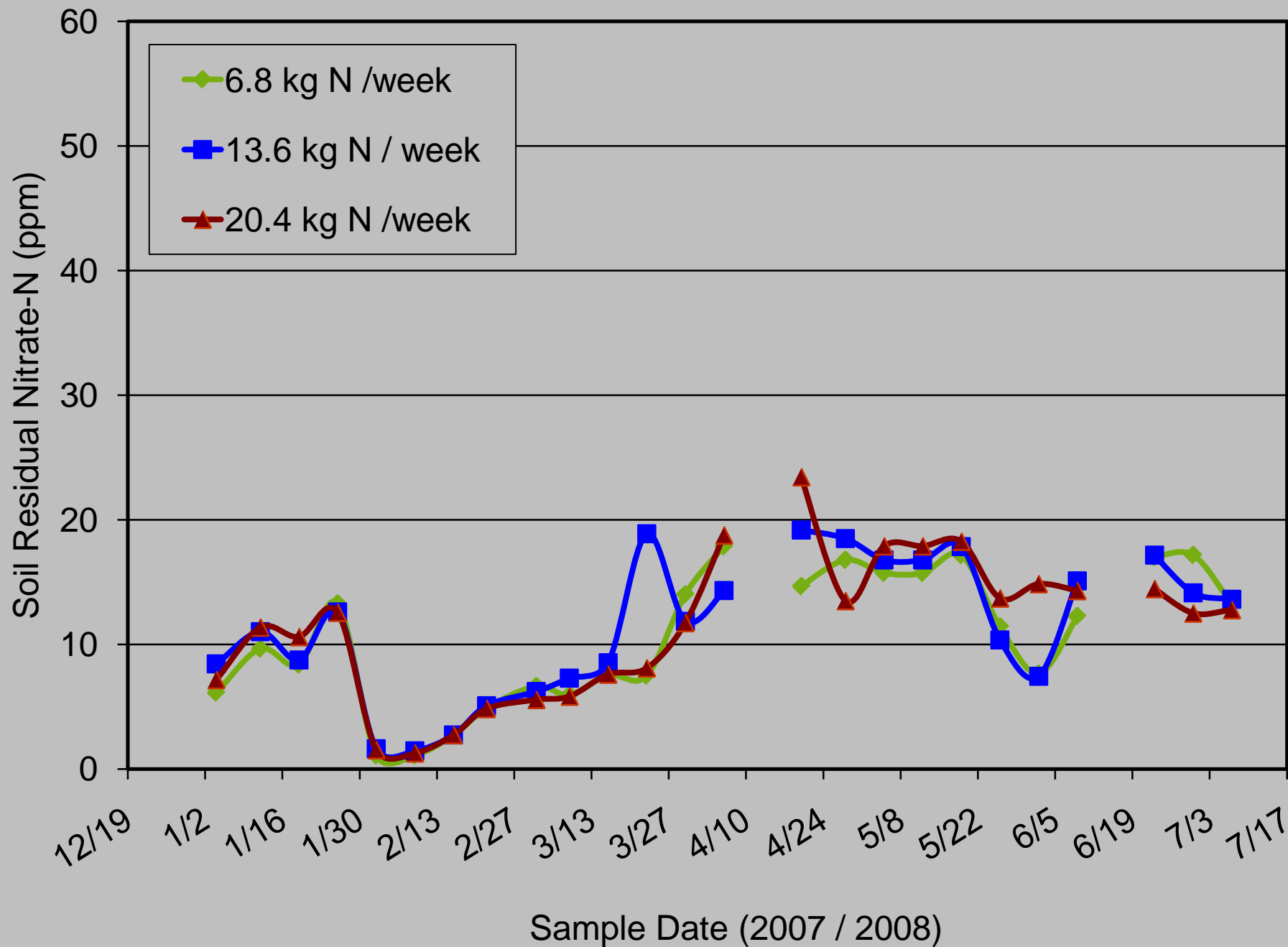
<div> <div>Santa Maria Sand</div> <div>Name</div> </div>	Total N availability at:					
	15 ° C.			25 ° C		
	week 1	week 2	week 4	week 1	week 2	week 4
Agrolizer	71	85	87	85	85	87
Biolyzer	42	46	49	50	55	66
Phytamin 801	83	89	93	93	95	99
Phytamin 522	81	87	87	89	90	91
Phytamin 434	77	80	83	83	89	85
Marizyme	78	91	91	89	93	91
Mega Green	62	73	77	80	76	84
<div>Some materials relatively high in available N in greenhouse</div>						92
MEAN	70.5	77.7	80.9	80.5	83.0	86.9

Source- Tim Hartz, UC-Davis

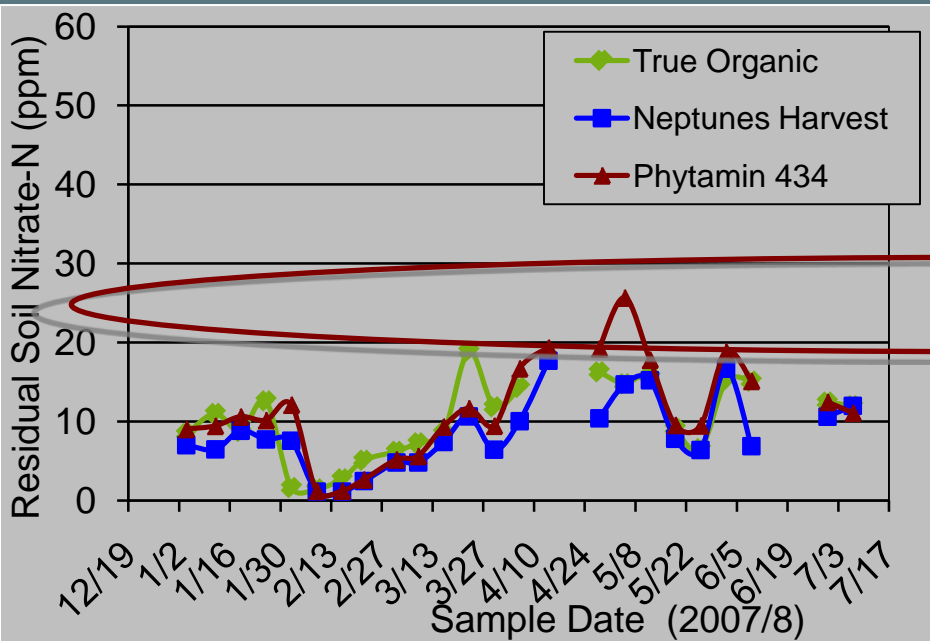
Strawberry Nitrogen Accumulation



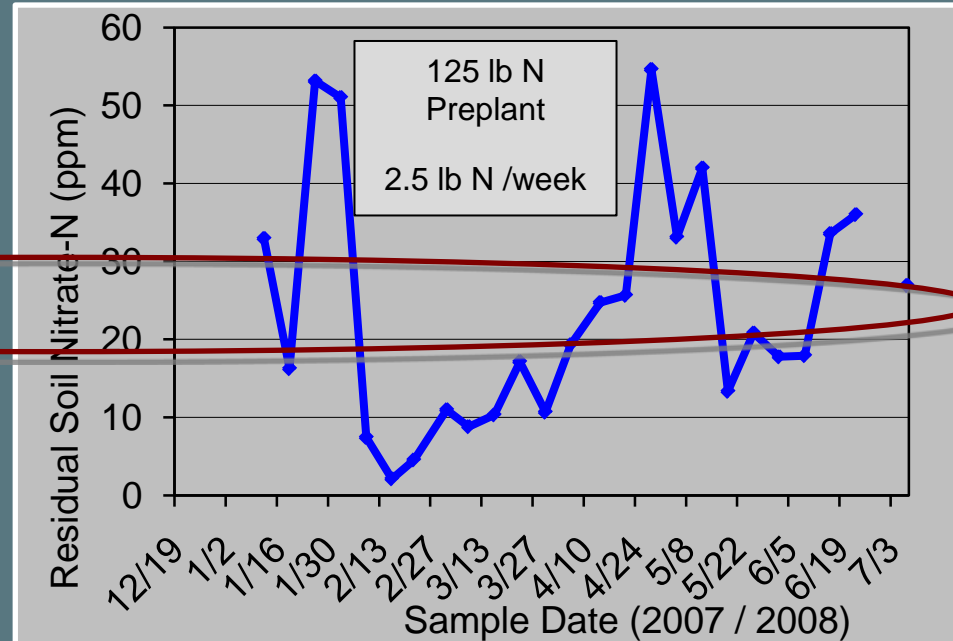




Illustrative Seasonal Soil N in Organic Field

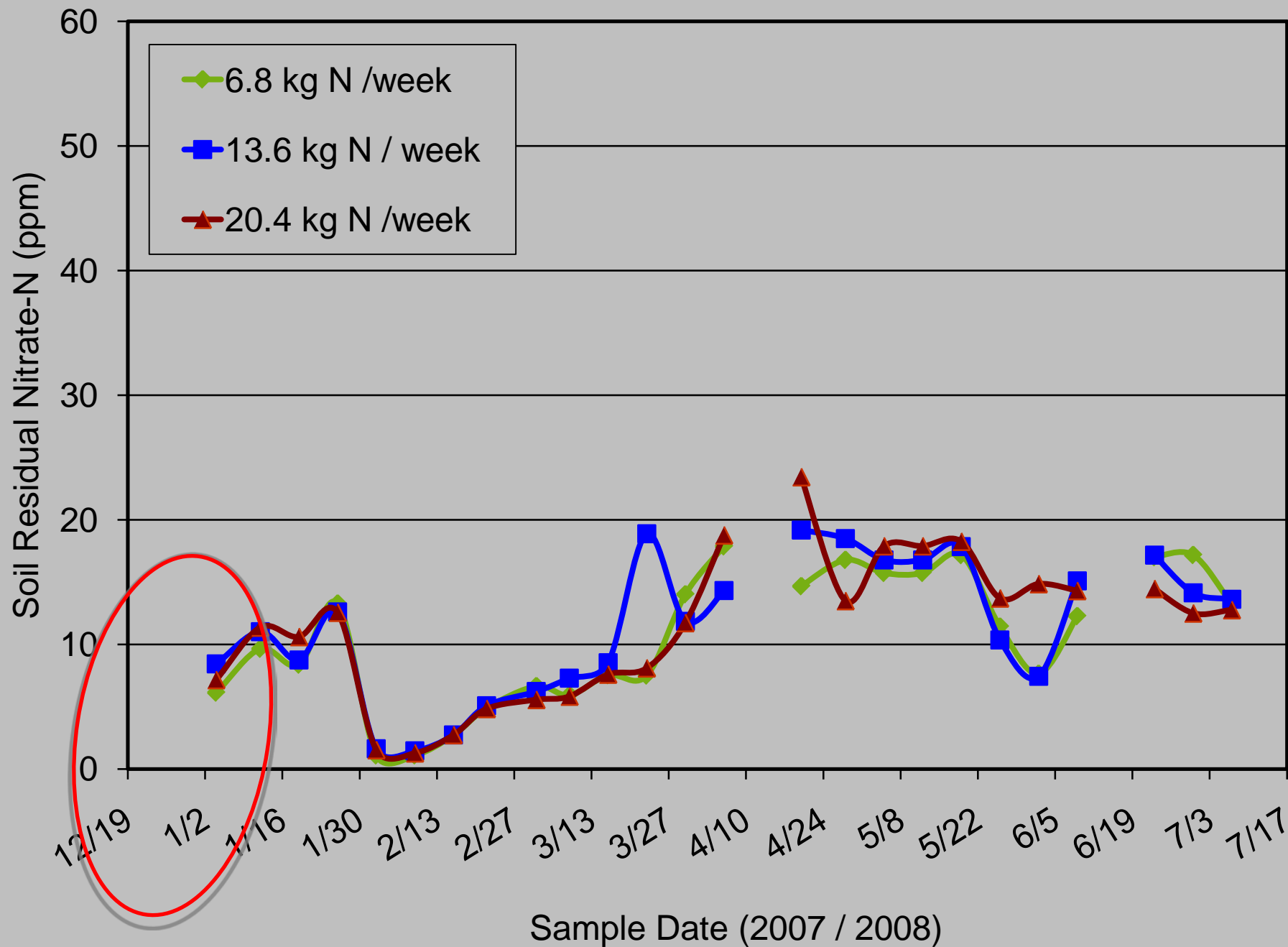


Illustrative Seasonal Soil N in Conventional Field

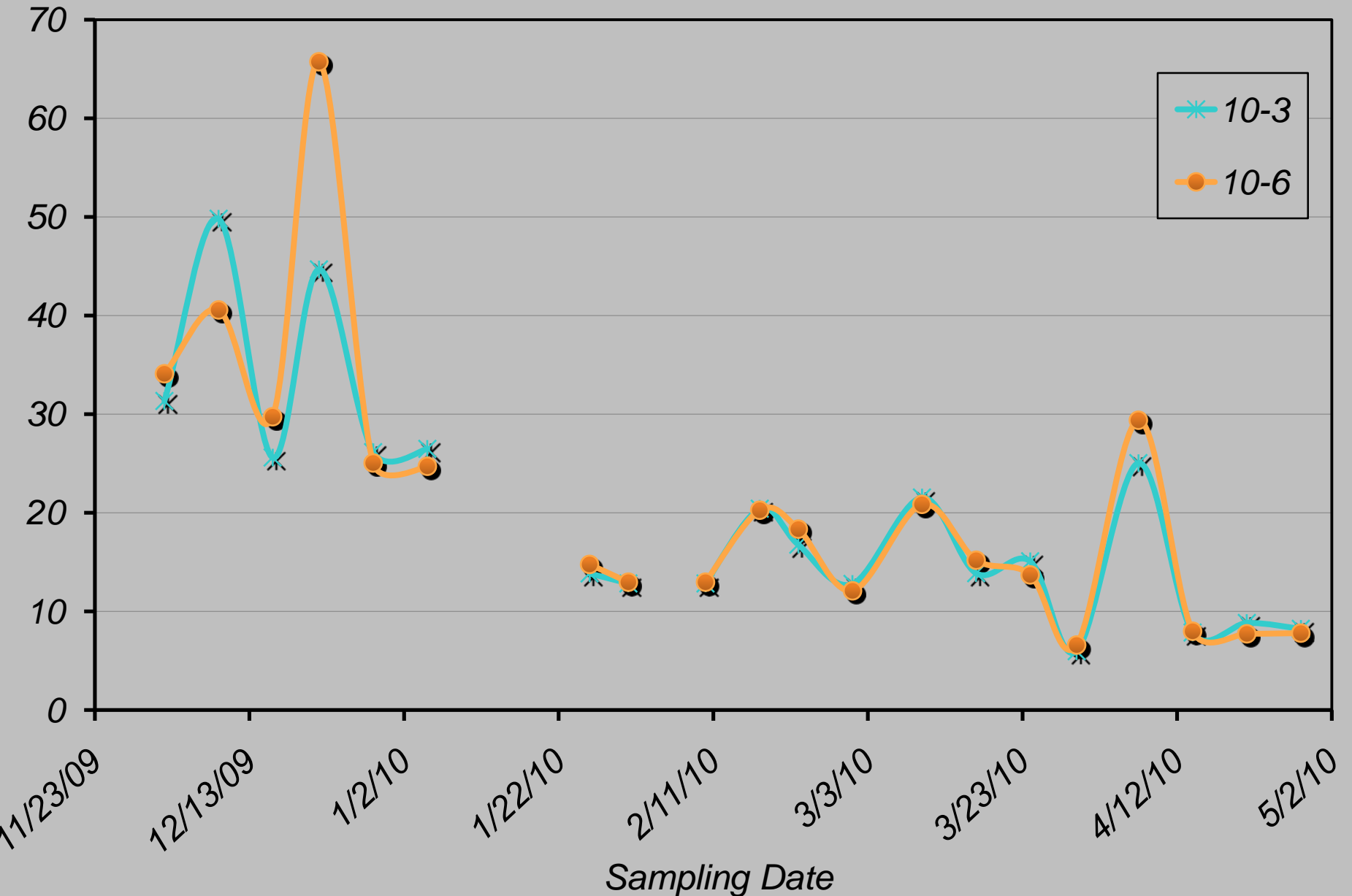


N uptake rate VS Timing of N availability

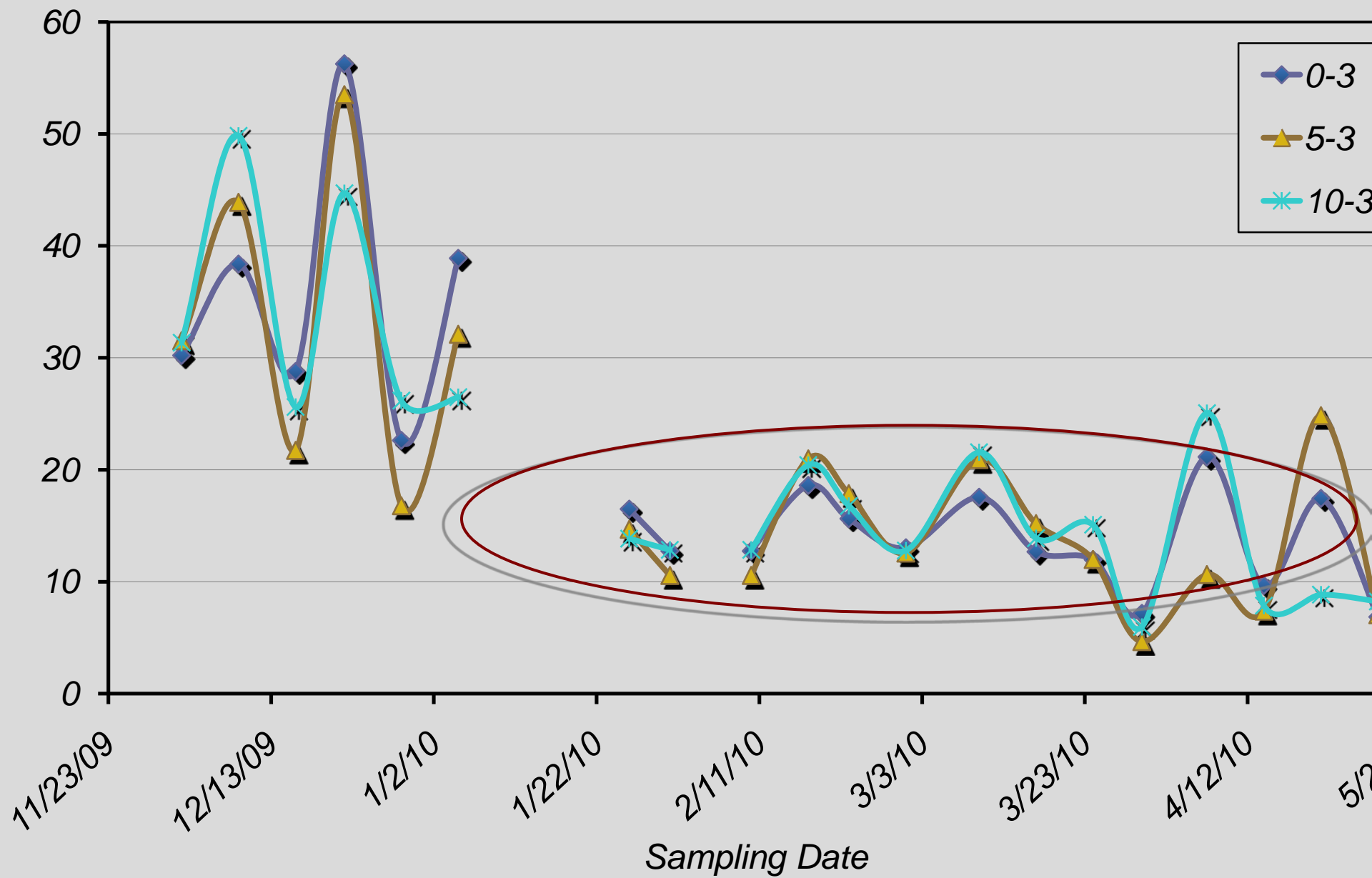
- *Total N uptake important*
- *Strawberries? Early vegetative development?*
- *Sets stage for plant branch number, size*
- *Can have big effect on yield*



*Weekly Soil Nitrate-N following varying rates of
preplant and weekly injected organic N*



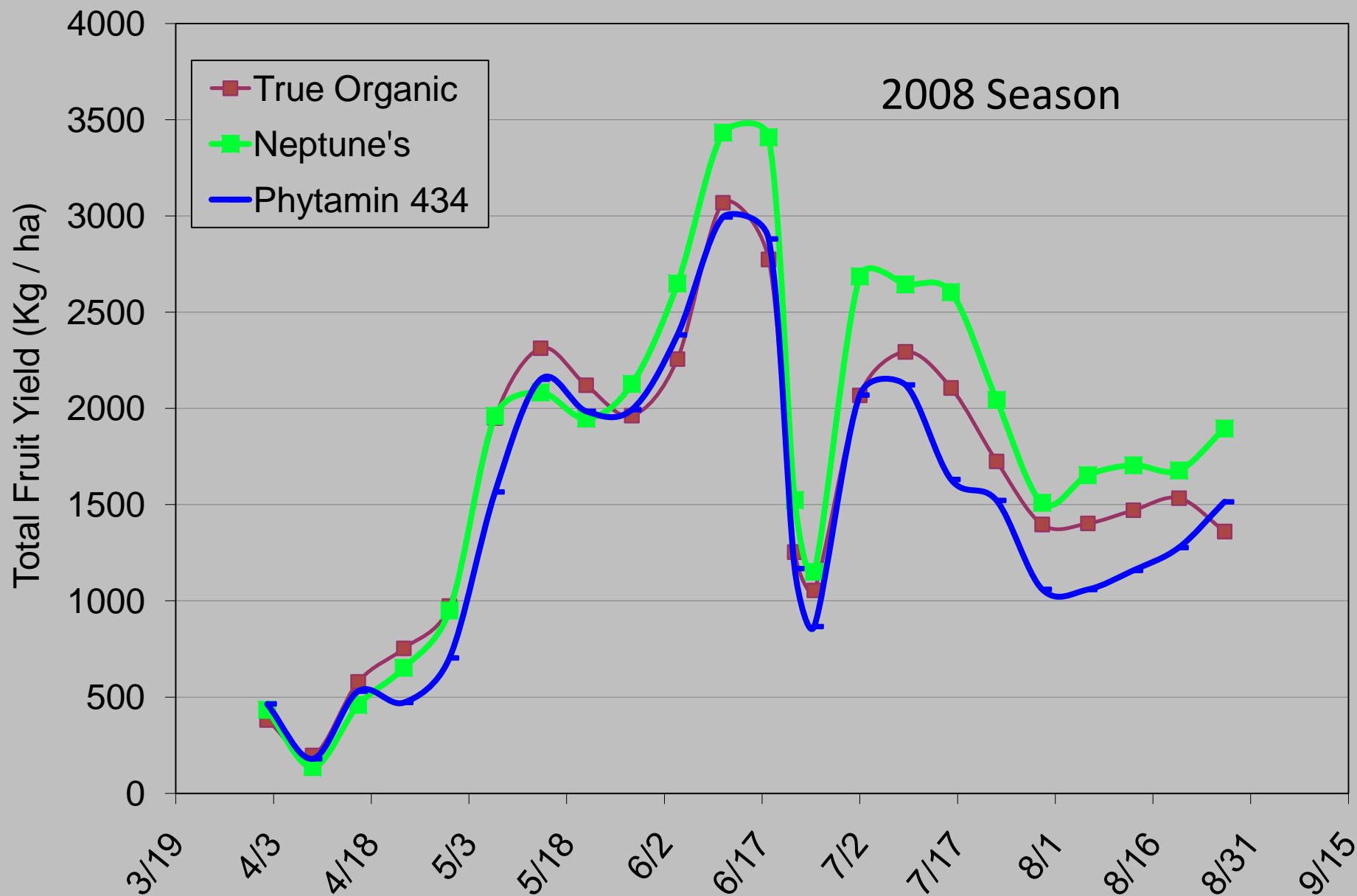
*Weekly Soil Nitrate-N following varying rates of
preplant and weekly injected organic N*



Organic Fruit Yields?

- Typically half of conventional yields
- Rarely different among treatments
 - Preplant compost rate
 - in-season injection materials?
 - In-season injection

Are we applying N early enough and managing injections to assure N is available?



Summary

- *N fertilization is challenging in organic production*
- *Low OM soils more difficult and costly*
- *Materials vary in cost, N availability*
- *Mineralization determines nitrate availability*
- *Lower N compared to conventional*
 - *management can be critical*
 - *interaction with water management?*

Acknowledgements

- ***Cachuma Resource Conservation District***

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- ***USDA – Section 2501 Program***