



A simple online nitrogen fertilization calculator for processing tomatoes

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Seed Central Processing Tomato Meeting

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- California Tomato Research Institute
- UC ANR California Institute for Water Resources
- Growers
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- Israel Herrera and the Russell Ranch field team
- Kelley Liang, Irfan Ainuddin, Patricia Lazicki, Ken Miller



http://geisseler.ucdavis.edu/Tomato_N_Calculator.html

Geisseler Lab

Nutrient Management



Nitrogen calculator for processing tomatoes

Field-Specific Input

Planting date:	<input type="text" value="mm / dd / yyyy"/>
Expected harvest date:	<input type="text" value="mm / dd / yyyy"/>
Expected Yield:	<input type="text"/> tons/acre
Residual nitrate in 1 st foot:	<input type="text"/> ppm Nitrate-N ▾
Residual nitrate in 2 nd foot:	<input type="text"/> ppm Nitrate-N ▾
Nitrate in irrigation water:	<input type="text"/> ppm Nitrate-N ▾
Estimated total irrigation:	<input type="text"/> acre-inches
Starter/preplant fertilizer:	<input type="text"/> lbs N/acre ▾

Display Results/Changes

Home

Nitrogen calculator for processing tomatoes

Field-Specific Input

Planting date:

Expected harvest date:

Expected Yield:

tons/acre

Residual nitrate in 1st foot:

ppm Nitrate-N ▾

Residual nitrate in 2nd foot:

ppm Nitrate-N ▾

Nitrate in irrigation water:

ppm Nitrate-N ▾

Estimated total irrigation:

acre-inches

Starter/preplant fertilizer:

lbs N/acre ▾

Display Results/Changes

Nitrogen calculator for processing tomatoes

Field-Specific Input

Planting date:

05 / 02 / 2018 

Expected harvest date:

Expected Yield:



Residual nitrate in 1st foot:

Residual nitrate in 2nd foot:

Nitrate in irrigation water:

Estimated total irrigation:

Starter/preplant fertilizer:

 May 2018 

Sun	Mon	Tue	Wed	Thu	Fri	Sat
29	30	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	1	2
3	4	5	6	7	8	9

acre-inches

lbs N/acre 

Display Results/Changes

Nitrogen calculator for processing tomatoes

Field-Specific Input



Planting date:	<input type="text" value="05 / 02 / 2018"/>	
Expected harvest date:	<input type="text" value="08 / 24 / 2018"/>	
Expected Yield:	<input type="text" value="58"/>	tons/acre
Residual nitrate in 1 st foot:	<input type="text" value="12"/>	ppm Nitrate-N ▾
Residual nitrate in 2 nd foot:	<input type="text" value="10"/>	ppm Nitrate-N ▾
Nitrate in irrigation water:	<input type="text" value="0"/>	ppm Nitrate-N ▾
Estimated total irrigation:	<input type="text" value="22"/>	acre-inches
Starter/preplant fertilizer:	<input type="text" value="25"/>	lbs N/acre ▾

Display Results/Chan

lbs N/acre
gal/ac 8-24-6
gal/ac 10-34-0
gal/ac 6-24-6

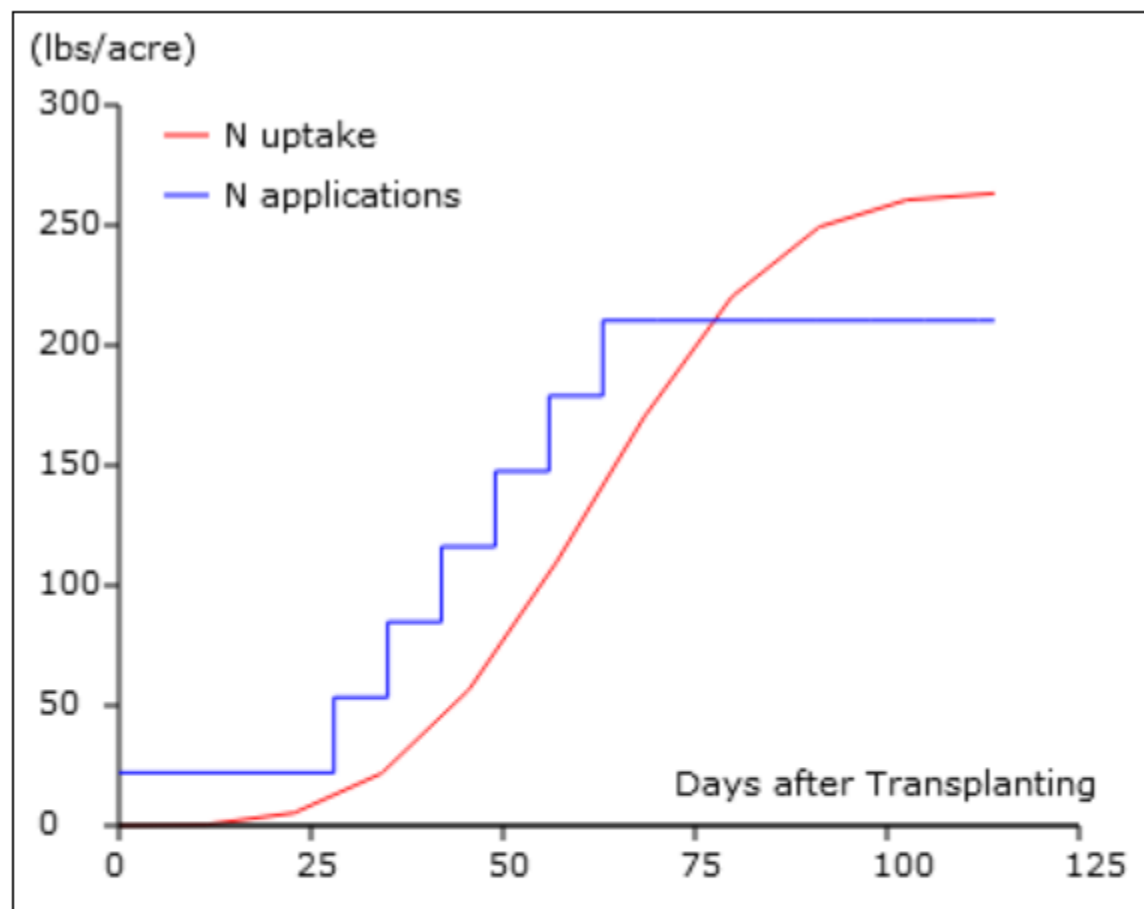
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Display Results/Changes

Nitrogen Uptake and Applications



The graph and the calculations are based on N uptake data from commercial fields in the Central Valley. Weather conditions, management and variety selection all can affect N uptake and availability. It is therefore **important to monitor the N status of the field during the season with soil or leaf analyses**. More information about soil and leaf sampling can be found [here](#).

Nitrogen Budget

Estimated N uptake:	i 261 lbs/acre
In-season N mineralization:	i 39 lbs/acre
Available residual nitrate:	i 49 lbs/acre
Nitrate in irrigation water:	i 0 lbs/acre
Starter N applied:	22 lbs/acre
Assumed fertilizer N use efficiency:	80%
In-season fertigation N needed:	188 lbs/acre

Suggested In-Season Fertigations

First fertigation:	i after 4 weeks
Number of weekly fertigations:	6 times
Last fertigation:	after 9 weeks
Amount of N applied each time:	31 lbs/acre

Nitrogen Budget

Estimated N uptake:



261 lbs/acre

How was this calculated?



In commercial fields in the Central Valley, tomato fruits contained on average 3 lbs N/ton. At harvest, about two thirds of the N in the aboveground biomass was in the fruits and one third in the vines.

In-season N mineralization:



39 lbs/acre

Available residual nitrate:



49 lbs/acre

Nitrate in irrigation water:



0 lbs/acre

Starter N applied:

22 lbs/acre

Assumed fertilizer N use efficiency:

80%

In-season fertigation N needed:

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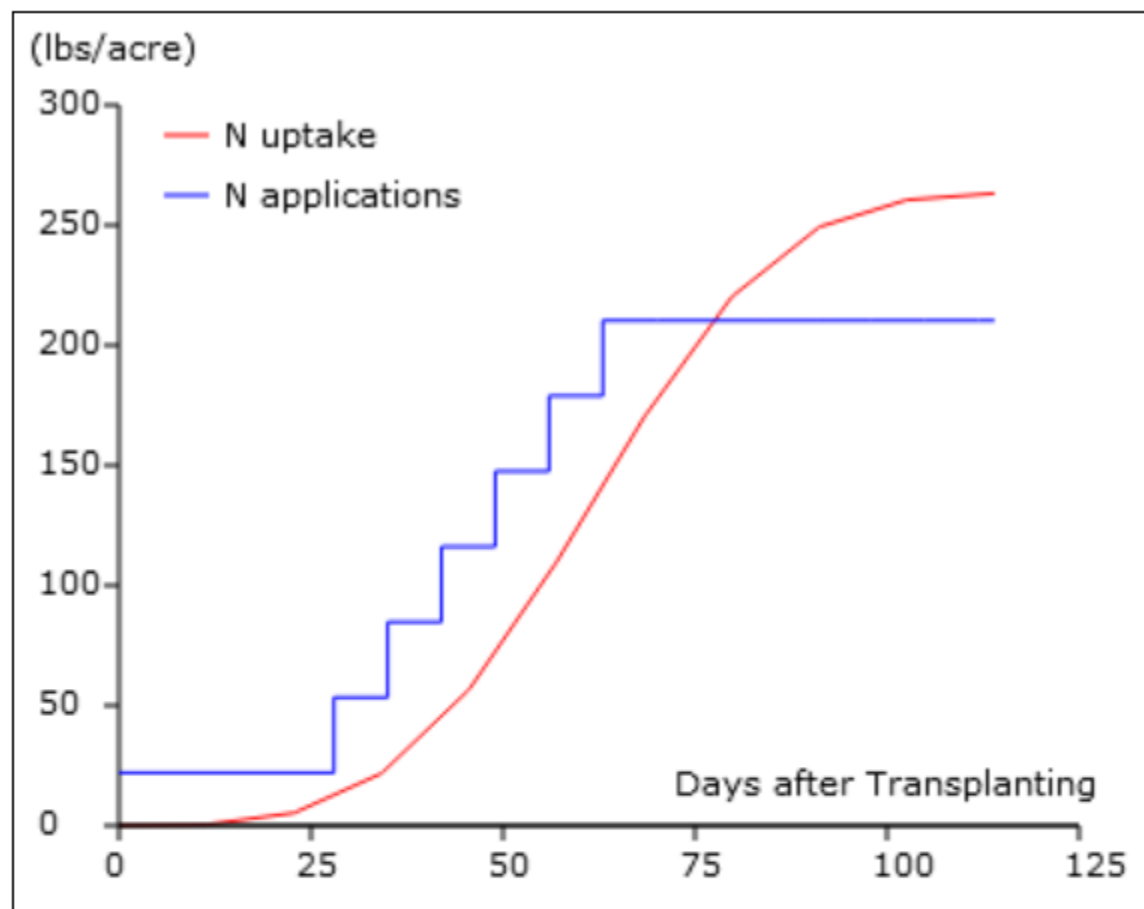
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Finding the Calculator

[http://geisseler.ucdavis.edu/Tomato N Calculator.html](http://geisseler.ucdavis.edu/Tomato_N_Calculator.html)

Spanish version with metric units:

[http://geisseler.ucdavis.edu/Calculadora N Tomates.html](http://geisseler.ucdavis.edu/Calculadora_N_Tomates.html)

