2021 Farm and Nursery Expo



11/4/2021 Gerry Spinelli



4.43 lb of Chicken = 1 lb of Chicken meat

Colorimetric strip tests

- Dip strip in sample water for 1 sec
- Shake off excess water
- Let dry for 1 minute
- Compare with colorimetric scale
- Careful with the units!!!
- Semi-quantitave measurement



	2. Remove and excess liquid.	compare to col Exp. Date: 08/20 Lot #: 08055 Part #: PW	
	Nitrite	Nitrate	
a second second second	0	0	
T Seat States	0.5	10 .	
	1.0	25	
Contraction of the second	5.0	50	
A DESCRIPTION OF THE OWNER OF THE	10	100	
	25	250	
and the second second]	500	



Other methods to measure nitrate



HI96728	
Nitrate-Nitrogen Portable	
Photometer	

★★★★☆ 2 Reviews

\$355.00

it *		
Cho	ose (Option *
aty:	1	+ -

Note: Limited Quantities Available, While Supplies Last



0.0.....

StripScan Reference Card (\$70)

These are more accurate than the Horiba, particularly if high Cl⁻ in the sample

Reflectometer (\$1000)







Hanna Photometer

- Quantitave measurement
- Affordable
- Quick (5 min)





- Read unreacted sample
- Add reagent (cadmium)
- Wait 4 minutes
- Read reacted sample

Cust

Horiba LAQUAtwin

- AKA "Cardy meter"
- Selective electrode meter
- Membrane doesn't differentiate between NO₃⁻ and Cl⁻
- Not recommended if high Cl in water
- Needs frequent calibration
- Quick (seconds)

	HORIBA LAQUAtwin	No3-11 Compact Nitrate Ion Meter	Share 🗹 🛐 💓 👰
	★★★★☆ × 5 ratings 6 ans	swered questions	\$360.00
	Price: \$360.00		FREE delivery: Dec 10 - 31
antille	Specifications for this item		© Deliver to UC - San Diego 92102 Usually ships within 3 to
	Brand Name	HORIBA	5 weeks.
AU with	Model Number	NO3 - 11	Buy more, get it as low as \$349.20
and an	Part Number	3200689162	Quantity: 1
5	UNSPSC Code	41110000	Buying in bulk?
	> About the product > Compare w	ith similar products. > Reviews and Q&A	Add to Cart
	For a bright and beautiful Di Shop gift cards	wali	Ships from and sold by ABQ Industrial. Seller Credentials: Registered Small Business
			Add a Protection Plan:
Click image to open expanded view			3-Year Protection for \$42.11
			4-Year Protection for \$61.24
omers who bought this item also bought		Page	2 1 of 8 1 of 8 1 of 8



Hands-on activity!



Test the same water sample with strips using different units and compare with your colleagues. Try the Horiba too!



Test your fertilizer injectors!

	Stock solution	Diluition Factor	
Target ppm	N content	%	Ratio
150	1%	1.500%	67
0.00015	2%	0.750%	133
	3%	0.500%	200
	4%	0.375%	267
	5%	0.300%	333
	6%	0.250%	400
	7%	0.214%	467
	8%	0.188%	533
	9%	0.167%	600
	10%	0.150%	667
	11%	0.136%	733
	12%	0.125%	800
	13%	0.115%	867
	14%	0.107%	933
	15%	0.100%	1000



NUTRIENT DELIVERY SYSTEM DILUTION CONVERSION CHART

DESIRED DOSAGE CONCENTRATION		DOSER SETTING		
mL / gallon (milliliters)	tsp / gallon (teaspoons)	oz / gallon (ounces)	Set % to:	Set Ratio to:
1	0.2	0.033	0.026	3875
1.25	0.25	0.042	0.03	3000
2	0.4	0.067	0.05	2000
3	0.6	0.100	0.08	1250
3.5	0.7	0.117	0.10	1000
4	0.8	0.133	0.11	950
5	1	0.167	0.13	750
6	1.2	0.20	0.16	625
7	1.4	0.23	0.18	540
7.5	1.5	0.25	0.20	500
8	1.6	0.27	0.21	475



Strip tests are also used in the soil nitrate quick test



Summary





- Colorimetric strip test quick and dirty
- Horiba Selective ion electrode simple and quick how accurate?
- Hanna Spectrometer relatively expensive the most accurate
- Calibrating your Dosatron will pay off!







Thank you!

Gerardo Spinelli

gspinelli@ucdavis.edu

Office 858 822 7679 Cell 530 304 3738



Please complete the evaluation!

https://surveys.ucanr.edu/survey.cfm? surveynumber=33281