

PLANT ANALYSIS

Texas Plant & Soil Lab

NAME: Acme Vineyards

5115 W. Monte Cristo Rd.
Edinburg, TX 78541
Phone (956) 383-0739 Fax 956-383-0730

Critical **Marginal** **Desired** **Excess**

FIELD: Dallas, TX
CROP: Grapes: Black Spanish & Muscadine

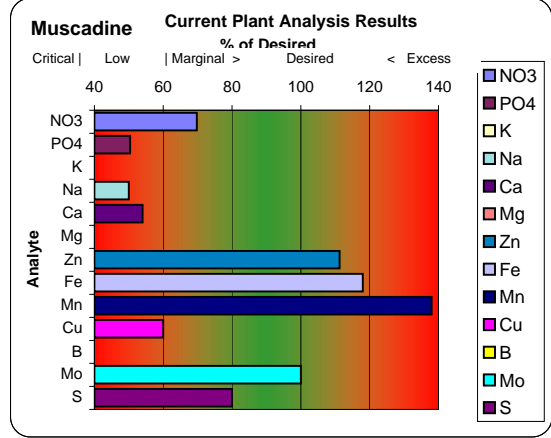
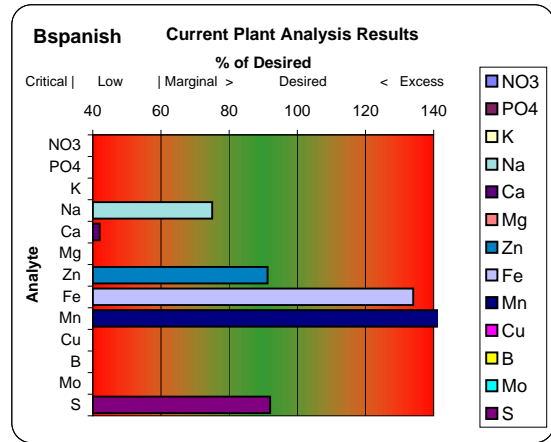
OWNER #: 2100
FIELD #: 2100

LAB #: 4141-42
e-mail:

Sample ID	Sample Date	PPM				PARTS PER MILLION - PPM									
		NO ₃	PO ₄	% K	% Na	% Ca	% Mg	Zn	Fe	Mn	Cu	B	Mo	% S	
		Nitrate	Phosphate	Potassium	Sodium	Calcium	Magnesium	Zinc	Iron	Manganese	Copper	Boron	Molybdenum	Sulfur	
Bspanish	07/12/10	420	1107	0.83	0.03	1.05	0.22	73	134	248	6	17	0.08	0.23	
Muscadine	07/12/10	1256	1763	0.84	0.02	1.35	0.32	89	118	138	9	19	0.25	0.20	

INTERPRETATIONS & RECOMMENDATIONS:

N-NO3 - tests low to marginal - use 10 lb/ac/week of actual N during fruiting.
 P - boost with P formula + Humic Acid + Microbes.
 K - low boost with KTS.
 Ca & Mg - need help on both -- Boost along with Boron (1-2 lb/ac Solubor) + Magnesium - 2 lb/ac Magnesium Sulfate.
 Zn - Mn - S all in optimum range.
 When spraying, include Cu - B & Mo (Black Spanish).
 Fe indicating good soil moisture.



Plant Analysis Guide Sheet

Nitrate (NO3 ppm) - In sap for future growth - affect visible in 10-14 days. Too much too soon, reduces fruit set.

Phosphate (PO₄ ppm) - In sap for future use - reflects present root activity. Can be increased with Humus + PGR's + Microbes
Potassium (K %) - Affect water uptake & efficiency - sugar production - health. High requirement for sugars.
Sodium (Na %) - Low is best - with a trace essential.
Calcium (Ca %) - Cell walls - nitrate utilization - roots - leaves - fruit set for pollination & development.
Magnesium (Mg %) - Chlorophyll - photosynthesis - P metabolism - respiration.
Zinc (Zn ppm) - Plant growth stimulator - enzymes - metabolic reaction.
Iron (Fe ppm) - Respiration - chlorophyll formation - oxygen carrier - energy.
Manganese (Mn ppm) - Enzyme activation - photosynthesis - maturity - P & Ca.
Copper (Cu ppm) - Chlorophyll formation - catalyzes plant functions - energy.
Boron (B ppm) - Nitrate uptake - calcium utilization - pollination and sugar transport.

PETIOLE (sap) TESTING: A quantitative and qualitative analysis of the nutrients in the sap (blood stream) flow from the roots to the leaves where photosynthesis occurs to manufacture the complex components known as photosynthates (mainly carbohydrates, sugars.)

FOR FUTURE PLANT DEVELOPMENT.

- a. **Foliar applications of nutrients have little or no immediate effect on the sap** as they stay in the leaves to aid plant functions. **Micronutrients do not translocate** like N-P-K which can transfer from old to new leaves when sap supply is deficient, not so with the micronutrients - Zn - Mn - Fe - Cu - B - Mo, etc. Ca & Mg seldom move very little if at all.
- b. **Low Micros in the sap show the needs for foliar applications** and/or soil amendment.
- c. **Foliar Micros on leaf do not show in the sap when applied on that leaf.**
- d. **New leaves will continue to need Micros until sap supply improves.**
- e. Weekly foliar will be needed every 5-10 days (**PLANTS FEED EVERY DAY**) !

NITROGEN - Most Petiole Programs are only NITRATE MONITORING tests with Phosphate (PO₄) and sometimes Potash, and very seldom test for micronutrients.

TPSL prefers also to include Secondary (Ca-Mg-Na) and the Micronutrients. %N & P in leaves are post-mortem.

- TOO MUCH NITROGEN too early reduces up-take of other nutrients & aids disease & bugs
Even heavy fruiting **plants can only utilize about 10 lb/ac of actual N per week.**
- Only ± 20% of this N is needed DURING the first 6-8 weeks of growth, more for grain.
- Ask the plant and feed WHEN & only WHAT is needed in small increments where possible to soil or foliar.

PHOSPHATE (PO₄) - In the sap shows root activity, P is mostly taken-up by young root hairs.

Slower old roots up-take shows senescence or cut-out is occurring.

- **Roots can be stimulated with humus products, multi-hormones, biologicals, etc.**
- P availability is helped by chemistry of P, S, Ca, and other natural materials
- **Sudden changes in P up-take can be result of new root growth interruptions caused by too much or too little water and/or lack of P, cultivator blight, compaction, nematodes, disease, etc.**