1 ❑ NUTRITION QUESTIONS AND ANSWERS

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2 ❑ How often do I need to fertilize a new planting?

- Need constant supply of nutrients
- Very little nutrient reserve in the stems
- When nutrients are gone, growth stops
- Soil type will influence the frequency
  - Very well drained..... More frequently
  - Moderate drainage.... Less frequently

3 ❑ What timing and rates should I use on my new plantings?

- Seasonal nitrogen rates from 100 - 180 lb/ac
- Timing:
  - Fertilize every three to four days
  - One appl. complete granular fertilizer
  - One appl. of a nitrogen only fertilizer
- Rates:
  - 5 to 8 lbs. nitrogen per week (on average)
  - Tissue concentrations from 1.8 to 2.6% N

4 ❑ How can I get the quickest start from my new plantings?

- Use vines with a high %N in their tissue
  - Look at previous August tissue report
- Low nitrogen vines emerge slowly
- Vines with a previous heavy crop load are slow
- Choose vines with low reproductive bud #'s

5 ❑ Should we apply a blended fertilizer before planting?

- Prior to planting is not necessary
- Fertilize vines as soon as they are planted
  - Fertigation works well
- Vines will take up nutrients through the stem and accelerate rooting
- Fertilizer will not burn the new roots (thus no need to wait 7 to 14 days).

6 ❑ What about adding phosphorus before planting?

- I recommend applications of preplant phosphorus

- Must first determine if a lot is needed
  - Use a soil test
- Must be incorporated into the top 4"
- Logistics of phosphorus application is the primary problem

7 ☐ Why bother with preplant phosphorus? Does it help?

- Phosphorus is a key element in the utlization of energy in the plant.
- When root systems are small, need to keep phosphorus available to the plant. Phosphorus moves very little in the soil unless it is flooded
  - typically moves only 1/16"
- It helps when soil phosphorus levels are low

8 ☐ How much P should I add pre-plant?

- First, do a soil test.
  - Not everybody needs to add preplant phosphorus
- If very little P in the soil, up to 400 lb. / acre of an 0-46-0 fertilizer can be used.
  - This will boost soil phosphorus levels by 80 lb.
- Remember to incorporate well.

9 ☐ What type of pre-plant phosphorus fertilizer should I use?

- 0-46-0 (triple-superphosphate) is a very good material.
  - It contains 21% Calcium
  - If high calcium is a problem, do not use.
- Check your soil test reports
- Most other high content P products have a nitrogen source which is not advised at high application rates.

10 ☐ What is the difference between 0-0-50 and 0-0-62?

- Both materials are excellent sources of potassium
- 0-0-50 is potassium sulfate
- 0-0-60 or 0-0-62 is potassium chloride
- The chloride or sulfate fractions of these materials is important in cranberry production.

11 ☐ How does applying K in the fall enhance bud formation?

- Bud formation (and growth) is enhanced by two nutrients: Potassium and Nitrogen.

- They to hand-in-hand. When one of the two nutrients is missing, bud formation is reduced.

12 Continued.....How does applying K in the fall enhance bud formation?

- When K low in the tissue:
  - One appl. of 0-0-50 at 100 lb. solved problem
  - Multiple applications and rates had no benefit
- When N & K were low in tissue:

  (K levels were adequate in the soil)
  - 8 lb/acre N enhanced bud formation and growth
  - The added N enhanced potassium uptake from the soil.

13 Will fall applications of K slow down vines and cause them to go dormant earlier?

- Yes.
- 0-0-60 (potassium chloride) will shut down vines for the winter.

14 How will fall applications of K slow down vines?

- Potassium chloride is a salt
  - Table salt is sodium chloride
- Salt stresses the plant and in reaction, the plant shuts down in an effort to keep from dying.
- Other salts could be used to accomplish the same effect.

15 Do I recommend fall applications of K to slow down vines?

- No. Must be willing to take extreme risks with your crop.
- Overapplication will cause:
  - leaf drop
  - slower emergence in the Spring
  - burnt root systems.
- KCl lowers fruit quality for fresh fruit.
- The benefits do not outweigh the risks

16 Is there a type of fertilizer that is better than any other?

- Two types of fertilizers:
  - **Manufactured fertilizers** have the same nutrient content in each pellet.
    - A superior fertilizer, but often more expensive
  - **Blended fertilizers** are a mixture of individual fertilizers in each bag.
    - Separates in the bag and is not evenly mixed
    - Bounces differently off the boom deflector plates
    - Blends with nitrogen often cause streaks

17 ☐ How should I determine which fertilizer to use in my program?

- Use a Complete Fertilizer in the early Spring when soils are cold
  - ex. 10-20-20 or 6-24-24
  - N, P, and K may not be available from the soil reserves
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18 ☐ How should I determine which fertilizer to use in my program?

- Refer to your soil and tissue test results
  - Without test results, it is impossible to determine what is actually contained in the soil
- Nitrogen is the most important nutrient, so this must always be considered first
- If soil is low in P, add materials high in this nutrient: 11-52-0 6-24-24
- If K is low and you don't need much nitrogen: 2-6-42.

19 ☐ What is the difference between liquid and foliar fertilizers?

- Liquid fertilizers:
  - Designed for chemigation use
  - Taken up by the root systems
  - Similar to granular fertilizers in solution
- Foliar fertilizers:
  - Designed for boom / mist application onto leaves.
  - Purer materials with harmful ingredients removed.
  - Much more costly but safer.

20 ☐ What proportion of our fertility program should be foliar fertilizers?

- **Granular fertilizers** should be the primary source of nutrition
  - Roots can choose which nutrients to absorb
  - Liquids will work, but must be uniform application
- **Foliar fertilizers** should be added to optimize your granular program.
  - Plants are forced to absorb all nutrients which land on leaves
  - Excellent for micronutrient additions or deficiencies
  - easy to get nutritional imbalance

21 ☐ How should I determine which fertilizer to use in my program?

- Use enough fertilizer to get a good distribution of material on the bed.
  - 75 to 100 lb / acre provides adequate coverage for nitrogen fertilizers

- Dispersal problems exaggerated when low volumes are used.

22 ☐ When should I use foliar fertilizers?

- Situations where foliars work well:
  - Early season when Casaron slowdown is noticed
  - Early fruitsizing when you can't get enough nutrients to your crop
  - Heavy crops in late season, especially during dry weather episodes
  - All applications of micronutrients

23 ☐ Continued....When should I use foliar fertilizers?

- Potential disadvantages:
  - Too much early season fertilizer could abort flower buds
  - Late season applications could alter the vegetative/reproductive ratio and affect next years crop.

24 ☐ How much N is carried over from one growing season to the next?

- Nitrogen carryover in the soil is minimal
- In the plant, the quantity stored in the tissue is very important.
  - In the fall, nutrients are transferred to stems and roots
  - If there is leaf drop, plants don't lose all their nutrients
- The amount of stored nitrogen appears to reflect the rate of bud break in the Spring.

25 ☐ What are the impacts of various herbicides on our nutritional program?

- Casaron
  - The primary herbicide which I've noticed to influence a nutritional program
  - A root pruner which will then affect the uptake of nutrients
  - Less root capacity equates to less nutrients, less growth, and low vigor
- Apply higher nitrogen quantities and more often; foliar another option early in season

26 ☐ How dry do my vines need to be when I fertilize?

- Thick vines capture fertilizer pellets
  - If moisture is on the leaves, fertilizers will dissolve.
  - All fertilizers have a salt content which burns tissue
  - I have seen a lot of leaf injury and some upright death.
  - Make sure all leaves and upper stems are dry, then water in well to remove fertilizer dust.

27 ☐ What do you think about applying sulfur or phosphorus on ice?

- I worry about even distribution with these two compounds
- Phosphorus may clump into areas when the ice thaws

  - P doesn't move much so you could get isolated deficiencies within small areas of the bed

- Sulfur is not active until the soil warms up. By then the dikes should be boom-ready.