Project Goals

- Provide Growers with potential Nitrate Hazard for Crops they may be growing
- Reminder-Crop Hazards are One of Three Index Numbers for the Overall Hazard Index
- Ultimate Goal is to Reduce Nitrate in Groundwater
Description

- Crops were divided into
  - Field Crops
  - Vegetable Crops
  - Tree and Vine Crops
For All Crops

- We looked at:
  - Rooting System Depth
  - Nitrogen Recommendation
- Ratio 1
  - N in crop tops / recommended N
- Ratio 2
  - Fraction of crop top N removed with the harvested portion of the crop
Tree and Vine Crops

- In addition we looked at the N in the leaf deposits left in place
  - Is the leaf material removed?
  - Is the N available for subsequent crops?
Other Factors

- Harvested During Peak N Uptake
- Denitrification Inherent in Crop
Technology or Formulas?

- We Used Old Information
Technology or Formulas?

- We Used New Information
Technology or Formulas?

- There were not any formulas

- Recommended N / Rooting Depth \( x \)

- Ratio 1 / Ratio 2 \( \bigcirc \) Anything Useful
Procedures

- Review of the Literature
- Essentially giving a High, Medium or Low categorization of each factor for each crop
- Entering the Information in Spreadsheets
Procedures

- Give the Crop an Overall Hazard Index Rate
- Sent Information to Experts for Review
- Compiled the Opinions and Revised the Hazard Index Score
Let's Now Look at Some Crops

- Tree and Vine – Grapes
  - Low N Requirement
  - Deep Rooting
  - High Ratio 1
  - Medium Ratio 2
  - Small Leaf Deposits

HI = 1
More Crops

- Tree and Vine – Almonds
  - Higher N Recommendation
  - Deep Rooted
  - High Ratio 1
  - Low Ratio 2
  - Large leaf Deposits

HI = 2
More Crops

- Vegetable - Lettuce
  - High N requirement
  - Shallow roots
  - Ratio 1 Medium
  - Ratio 2 Low

- Harvested During Peak N Uptake

HI = 4
More Crops

- Vegetable – Broccoli
  - Moderate N Requirement
  - Shallow Rooted
  - Ratio 1 High
  - Ratio 2 Low
- Harvested During Peak N Uptake

HI = 4
More Crops

- Tree Crop – Avocado
  - Deep Rooted
  - High Portion of N Applied is Incorporated
  - Low N in Harvested
  - Large Leaf Deposits

HI = 2
More Crops

- Field Crops - Alfalfa
  - No N Recommended
  - Deep Rooted
  - Ratio 1 High
  - Ratio 2 High
- Seed or Hay ??

HI = 1

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More Crops

- Vegetable Crops - Tomato
  - Moderate Rooting Depth
  - Moderate N Requirement
  - Ratio 1 High
  - Ratio 2 Medium

HI = 3
More Crops

- Vegetable Crops - Radish
  - Shallow Rooted
  - Low Nitrogen Requirement
  - Ratio 1 High
  - Ratio 2 Medium

HI = 3
More Crops

- Tree and Vine Crops - Lemon
  - Deep Rooted
  - Moderate to High N Requirement
  - Ratio 1 High
  - Ratio 2 Low
  - Medium Leaf Deposits

HI = 3
More Crops

- Tree and Vine Crops - Dates
  - Deep Rooted
  - Low Nitrogen Requirement
  - Ratio 1 High
  - Ratio 2 Medium
  - Leaf Deposits ?

HI = 1
More Crops

Vegetables - Strawberries
  – Shallow Rooted
  – Moderate to High N Requirement
  – Ratio 1 High
  – Ratio 2 Medium

HI = 4
Tree and Vine Crops – Blackberries
- Moderate Rooting Depth
- Low to Moderate N Requirement
- Ratio 1 High
- Ratio 2 Low
- Small Leaf Deposits

HI = 2
More Crops

- Vegetable Crops – Sweet Corn
  - Moderate Rooting Depth
  - Moderate to High N Requirement
  - Ratio 1 High
  - Ratio 2 Medium

- Harvested Closer to Peak Uptake

HI - 3
More Crops

- Field Crops - Orchard Grass
  - Deep Roots
  - High N Requirement
  - Ratio 1 Medium
  - Ratio 2 Medium

- Massive N uptake in early spring

HI = 2
More Crops

- Turf
  - Dense Root Mass
  - Medium to Deep Roots
  - High N Taken Up
  - N Left on Field After Harvest

HI = 2