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The Davis County Master Gardener Association

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The Davis County Master Gardener Association

in association with the
Utah State University Extension
Service



Plant Nutrition



Overview

- Plant Nutrient Requirements
- Affect of pH on Nutrient Availability
- Soil Tests
- Types of Fertilizers
- Fertilizer Application



Plant Nutrient Requirements

- Primary Macro Nutrients

- Carbon
- Hydrogen
- Oxygen
- Nitrogen
- Phosphorus
- Potassium

- Secondary Macro Nutrients

- Calcium
- Magnesium
- Sulfur

- Micro Nutrients

- Iron
- Boron
- Etc.



Nitrogen

- Contributes to top growth
- Required to support chlorophyll
- Water soluble, leaches away
- Too much suppresses flowering



Phosphorous

- Contributes to root growth
- Not mobile in the soil, needed at roots
- Contributes to flowering, fruit



Potassium

- Contributes to overall plant health



Fertilizer Labels (4-10-8)

- The three numbers represent:
 - % nitrogen (N)
 - % phosphorus (P)
 - % potassium (K)
- 4-10-8 = 4% N, 10% P, 8% K
- 16-16-16 = 16% N, 16% P, 16% K



Types of Fertilizer

- Complete vs. Incomplete
- Specialized
- Slow Release
- Organic
- Green Manures
- Combined With Pesticides



Soil Tests

- Ribbon test
- Canning jar test
- Over the counter tests
- USU soil testing



Fertilizer Application

- Quantity
- Timing
- Amount
- Methods



How Much N to Apply

Determine the pounds of fertilizer to apply in terms of nitrogen requirements.

Lbs to apply = (Lbs N required / %N) * 100

Label	%N	Lbs N Required	Lbs To Apply
20 (21-0-0)	21	4	19
10 (36-0-0)	36	4	11
20 (6-2-0)	6	4	67

Recommendation for Lawns: 2 lbs N/1000 sq ft/year



When to Fertilize

- Soil type – determine frequency
- Crop type
- Time of year
- During rapid growth



Application Methods

- Broadcast
 - Spread on surface and till or water in
 - Use calibrated rotary or drop spreader
- Banding and Side dressing
 - Apply to soil around plant or in furrow
 - Cover with soil
- Foliar
 - Spray on – quick response, chance of leaf burn



Summary
