TOBACCO

Fertilization

To develop a profitable, economical, and environmentally sound fertility program, you must begin with a soil test report. This information is essential in developing a tobacco fertilization program that meets crop needs without nutrient overapplication. NCDA soil test reports provide lime and nutrient recommendations for the specific crop so fertility will not be a yield-limiting factor.

For a complete discussion on tobacco fertilization, please refer to 2007 Flue-Cured Tobacco Information pages 70-96. Proper soil pH is the foundation of a fertilization program. The soil target pH for tobacco is 6.0 for mineral soils.

Below are common questions concerning new tobacco fertilization programs. New tobacco fertilization programs utilize liquid nitrogen (24S, 25S, or 30%) as a major nitrogen source. Most questions relate to the fertilizer that is applied within 7-10 days after transplanting. Traditionally this fertilizer has been referred to as the N-P-K fertilizer. New program fertilizers may or may not include all three; N (nitrogen), P (phosphorus), and K (potassium). Due to this, I will simply refer to this fertilizer as the base fertilizer.

Should I include magnesium in the base fertilizer? What does your soil test report recommend? If a 0 is present as the magnesium recommendation, no additional magnesium is needed.

If a $ is present as the magnesium recommendation, soil magnesium levels are low. If lime is also recommended, use dolemitic lime. To be legally sold as dolemitic lime, it must contain at least 6% magnesium (120 pounds/ton). Dolemitic lime is the most economical source of magnesium. If lime is not recommended, add 20 pounds/acre of magnesium to the base fertilizer.

Should I include sulfur in the base fertilizer? For deep sandy soil fields, 20-30 lbs/acre of sulfur should be added to the base fertilizer.

Is chlorine important in the base fertilizer? Traditional tobacco fertilizers provided chlorine guarantees so adequate (but not excessive) amounts were present. The base fertilizer should provide a maximum of 30 pounds/acre of chlorine. Higher rates will not improve yield but can reduce quality.

Whether a dry or liquid (or combination thereof) nitrogen source is used, no more than 1/2 of the total nitrogen should be applied within 7-10 days after transplanting. Applying total nitrogen at
or shortly after transplanting increases the chance of nitrogen leaching prior to crop use. This practice is unwise financially and environmentally.

**Systemic Insecticides**

In recent years, a systemic insecticide has been commonly applied as a greenhouse tray drench prior to transplanting. A greenhouse tray drench consists of product application on the plant foliage and immediately washing the product from the foliage into the root ball. The following is a brief discussion of available products.

**Admire Pro** (Bayer)
Admire Pro contains 4.6 pounds of imidacloprid per gallon of product. Greenhouse tray drench rates are: 0.5 ounce/1000 plants for aphids and flea beetles, and 0.6 ounce/1000 plants for aphids, flea beetles, and wireworms. Apply no more than 7 days prior to transplanting.

**Alias** (MANA)
Alias contains 2.0 pounds of imidacloprid per gallon of product. Greenhouse tray drench rates are: 1.0 ounce/1000 plants for aphids and flea beetles, and 1.4 ounces/1000 plants for aphids, flea beetles, and wireworms. Apply no more than 7 days prior to transplanting. Alias has not been tested by NCSU. Alias will be included in 2007 NCSU test efforts.

**Nuprid** (Nufarm)
Nuprid contains 2.0 pounds of imidacloprid per gallon of product. Greenhouse tray drench rates are: 1.0 ounce/1000 plants for aphids and flea beetles, and 1.4 ounces/1000 plants for aphids, flea beetles, and wireworms. Apply no more than 7 days prior to transplanting. Nuprid has not been tested by NCSU. Nuprid will be included in 2007 NCSU test efforts.

**Platinum** (Syngenta)
Platinum contains 2.0 pounds of thiamethoxam per gallon of product. Greenhouse tray drench rates are: 0.5 ounce/1000 plants for aphids, 0.8 ounce/1000 plants for aphids and flea beetles, and 1.3 ounces/1000 plants for aphids, flea beetles, and wireworms. Transplant within 2 days after treatment.

**T-Moxx** (Fair Products)
T-Moxx contains 2.0 pounds of thiamethoxam per gallon of product. Greenhouse tray drench rates are: 0.5 ounce/1000 plants for aphids, 0.8 ounce/1000 plants for aphids and flea beetles, and 1.3 ounces/1000 plants for aphids, flea beetles, and wireworms. Transplant within 2 days after treatment.

**Tomato Spotted Wilt Virus (TSWV) Suppression**

In NCSU tests where TSWV in untreated plots was greater than 5%, imidacloprid (Admire 2F or Admire Pro used in tests) has consistently reduced TSWV symptoms. In NCSU tests where TSWV in untreated plots was greater than 5%, thiamethoxam (Platinum used in tests) reduced TSWV symptoms in 2 of 5 tests.

As a result, growers with a history of TSWV planning to use a systemic insecticide should use imidacloprid as a greenhouse tray drench. If Admire Pro is used, 0.8 ounce/1000 plants is recommended. If Alias is used, 1.8 ounces/1000 plants is recommended. If Nuprid is used, 1.8 ounces/1000 plants is
recommended. Please remember Alias and Nuprid have not been tested by NCSU. While imidacloprid is imidacloprid, inert ingredients may be different. These inert ingredients may differ in terms of phytotoxicity (leaf damage and/or plant stunting) on tobacco transplants.

For growers not satisfied with past imidacloprid TSWV suppression, please give me a call. We will discuss Actigard as a greenhouse tray drench or as a greenhouse waterbed treatment.

**Greenhouse Insect Management**

Orthene is labeled as a foliar spray for the control of several greenhouse insects (aphids, flea beetles, vegetable weevils, etc.). The Orthene 97PE rate is 0.75 tablespoon mixed in 3 gallons of water per 1,000 square feet. The Orthene 75SP rate is 1.0 tablespoon mixed in 3 gallons of water per 1,000 square feet. Uniform, thorough coverage is necessary for adequate control.

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Curtis D. Fountain
Extension Agent
Agriculture - Field Crops