

Dormant Season Applications for Satsuma

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Dormant Season Applications for Satsuma

- Overview
- Nutritional
- Pests
 - Weeds
 - Insects/Mites
 - Diseases

Overview

- Nutritional applications to increase bloom in Satsuma have not been conducted but may prove to be beneficial
- Satsuma tends to be relatively pest free, especially when acreage is limited
- Routine scouting should identify any problems that may be encountered

Nutritional

- Applications of urea or phosphorous acid have been proven to increase bloom set in other varieties

EFFECTS OF FOLIAR APPLICATIONS OF UREA OR NUTRIPHITE ON FLOWERING AND YIELDS OF VALENCIA ORANGE TREES

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Abstract. Valencia orange yields have been related to the number of flowers in the spring bloom, and the number of induced flower buds is determined by climatic stress factors such as cold and drought. Winter foliar sprays of urea have been reported to enhance the number of flower buds, flowers per inflorescence and yields under California conditions. Sprays of urea (28-31 kg N/ha) or Nutriphite (6.1 l/ha of 0-28-26 product) were applied to mature Valencia trees in two locations in South Florida in 1994-95. Urea or Nutriphite applied between the dates of 25 Dec. and 11 Jan. increased flowers. With continued annual treatment for 4 yr, Nutriphite treatment increased yields whether applied annually in the winter or later, just before full bloom. Winter urea sprays on the same plots for 4 consecutive years significantly increased yields. Orange juice soluble solids per ha were increased by both treatments when compared to the control plots. Possible mechanisms for these yield responses are discussed.

the trees may not be able to translocate sufficient major nutrients (N, P, K) for the needs of up to 50,000 to 100,000 flowers/tree (Erickson and Brannaman, 1960). Nutrition could influence the number of flowers and fruit set. Work in Spain has demonstrated a depletion of N, P, and K of old leaves during the flowering and fruit set periods along with a large increase in nutrients in new leaves and setting fruit (Sanz et al., 1987; Ruiz and Guardiola, 1994). It is not known if nutrient competition occurs prior to flowering during the flower bud differentiation and expansion period.

Commercial forms of N (Lea-Cox and Syvertsen, 1995) and K (Albrigo, unpublished data) that are readily absorbed by leaves are available and can increase foliage and fruitlet nutrients shortly after spray application. Suitable sources of phosphate for foliar feeding other crops have been reported (Barel and Black, 1979), but have not been determined for citrus. Phosphorous acid ($H_2(HPO_3)$) is taken up by plants (Smillie et al., 1989), is highly mobile (d'Arey-Lameta, and Rompeix, 1991) and if buffered with KOH or KCO_3 is a source of K. HPO_3^{2-} is reportedly phytotoxic (MacIntire et al., 1950; Forster et al., 1998; Lucas et al., 1979), can result in poor plant growth for one year after soil application (MacIntire et al., 1950), and is slowly converted to PO_4 in soils (Adams and Conrad, 1953). Phosphite appears to interfere with PO_4 metabolism also (Griffith et al., 1990; Carswell et al., 1996). Although

Nutritional

- Applications of urea or phosphorous acid have been proven to increase bloom set in other varieties
- Albrigo tested pre-bloom applications of
 - N(urea) 28 lbs./acre
 - Phosphorous acid product Nutriphite(0-28-26) 2 qts./acre

Table 3. Average yield/year (40.9 kg boxes/ha (boxes/ac)) and average yields for four consecutive years of treatment of Valencia trees in South Florida for two locations with six replications combined.

Treatment	Boxes/ha or boxes/ac ()				Avg/year
	Year 1	Year 2	Year 3	Year 4	
Control	1193 (483) a	892 (361)	1000 (405) a	823 (333) a	978 (396) a
Urea	1289 (522) ab	921 (373)	1107 (448) ab	981 (397) ab	1074 (435) b
Nutriphite	1442 (584) b	968 (392)	1158 (469) b	1030 (417) b	1150 (466) b

Not tested on satsuma but may worth trying on a trial basis on a few trees

Pests

- Weeds
 - Pre-emergence applications
- Insects/Mites
 - Aphids
 - Red Spider Mites
- Diseases
 - Alternaria
 - Post Bloom Fruit Drop (PFD)???

Weeds

2015 Louisiana Suggested Weed Management Guide

FRUIT CROPS WEED MANAGEMENT

CITRUS

Active Ingredient and Rate	Formulated Product and Rate	Weeds Controlled	Remarks and Precautions
PRE-EMERGENCE continued:			
pendimethalin	Prowl H ₂ O @ 2.0 to 6.3qts/A Rate 2.0 qts/A Rate 4.0 to 6.3 qts/A	Annual grasses and certain broadleaf weeds.	Citrus bearing trees. Apply Prowl H ₂ O as a broadcast or banded treatment using ground equipment before weed emergence. Apply the spray directly to the ground beneath the trees and/or in areas between rows. Prowl H ₂ O may be applied either in a single application or sequentially with an interval of 30 days or more. Apply Prowl H ₂ O at between 2 to 6.3 quarts per acre depending on the grower's weed control program, level of weed infestation, and desired use strategy. Do not to exceed a total of 6.3 quarts/A per year in citrus. DO NOT apply within 1 day of harvest of citrus fruit. Spectrum of broadleaf weeds controlled can be increased by tank mixing with other pre-emergence chemicals. Tank mixes with post emergence herbicides should be used to control existing weeds
pendimethalin	Prowl H ₂ O @ 2.0 to 6.3qts/A Rate 2.0qts/A Rate 4.0 to 6.3qts/A Pendimax 3.3, Prowl 3.3 Short-term control (4 months)- 2.4qts/A Long-term control (6 to 8 months)- 4.8qts/A	Annual grasses and certain broadleaf weeds. No post activity; destroy existing weeds before or during application. May be used in combination with a herbicide registered for use in the specific nonbearing crop to remove existing vegetation.	Nonbearing and newly transplanted trees. Pre-emergence after planting. Apply the spray in a band directly to the ground under trees. Do not apply to newly transplanted trees or vines until ground has settled and no cracks are present. Pre-plant surface, prior to transplanting. Uniformly apply in a band or broadcast before planting. Avoid root contact with treated soil when placing transplants into the hole or injury may occur. Pre-plant incorporated. Incorporate to a depth of 1 to 2 inches. Application and incorporation must be made

Weeds

- Late dormant period is a good time to apply pre-emergence herbicides
 - Alion

Alion

RESTRICTIONS FOR USE

- Alion Herbicide can only be applied in citrus trees established for a minimum of one year after transplanting, unless application to trees established less than one year is allowed under a state-specific special local need (24c).
- Alion Herbicide can only be applied in other labeled tree crops that have been established for three years after transplanting and exhibiting normal growth and good vigor.
- Do not use on soils with 40% or more gravel content.
- Do not apply more than the amount of Alion Herbicide specified on this label based on soil texture and crop.
- Do not apply more than 10.3 oz per acre (0.134 lb ai/A) of Alion Herbicide per year when used in labeled crops
- Allow at least 30 days between applications of Alion Herbicide. In Florida and Georgia allow 90 days between applications.
- Do not apply this product through any type of irrigation system.
- Do not apply this product by aerial application.
- Do not harvest citrus crops within 7 days after the application of Alion Herbicide.
- Do not harvest crops other than citrus within 14 days after the application of Alion Herbicide.
- Only crops listed on this label may be replanted or rotated within 24 months after the last application of Alion Herbicide and while following the instructions listed in the "Rotational Crop Restrictions" section.
- Do not apply this product to frozen or snow covered soil.

Insects/Mites

- Aphids
 - Typically on younger flush
 - Several broad spectrum insecticides
- Citrus red mites



UF

ENY817



Citrus Red Mite¹

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The citrus red mite or purple mite, *Panonychus citri* (McGregor), was first recognized as a pest of Florida citrus in 1885. From the late 1930s to about 1960, it reportedly was one of the most serious economic pests in Florida citrus. Today, growers find this mite to be a sporadic pest. Citrus red mite populations are usually greatest on lemon and grapefruit, followed by orange and then tangerine. In California, citrus cultivars on grafted Troyer citrange rootstock usually become infested with these mites before trees with other varietal-rootstock

bumps on the mite's body. The tubercles are the same color as the rest of the mite's body.



Citrus Red Mite

TABLE 1. CONTROL THRESHOLDS AND APPROPRIATE SAMPLE SIZES FOR 10 ACRES

If the control threshold is:	Sample size (Sample trees should be uniformly scattered across a 10-acre block. Do not sample adjacent trees.)
5 mites/leaf	Examine 4 leaves/tree from 6 trees/area from 4 areas/10 acres = 96 leaves on 24 trees/10 acres
8 mites/leaf	Examine 4 leaves/tree from 6 trees/area from 3 areas/10 acres = 72 leaves on 18 trees/10 acres
10 mites/leaf	Examine 4 leaves/tree from 5 trees/area from 2 areas/10 acres = 40 leaves on 10 trees/10 acres
15 mites/leaf	Examine 4 leaves/tree from 4 trees/area from 2 areas/10 acres = 32 leaves on 8 trees/10 acres

TABLE 2. CITRUS MITICIDE SELECTION*

Supplemental (early Spring)	Post Bloom	Summer	Fall	Supplemental Fall
--	--	Agri-mek + oil	--	--
--	--	--	Comite	Comite
Envidor	Envidor	Envidor	Envidor	Envidor
--	Petroleum oil	Petroleum oil	Petroleum oil	--
--	--	--	Sulfur	Sulfur
--	--	Micromite	Micromite	--
--	--	--	Nexter	Nexter
Movento	Movento	Movento	--	--
Vendex	Vendex	--	Vendex	Vendex

*Except for petroleum oil, do not use the same miticide chemistry more than once a year.



Diseases

- Alternaria
 - Web based spray schedule
 - www.agroclimate.org
 - Copper
 - Ferbam
 - Strobilurins



Diseases

- Postbloom Fruit Drop (PFD)???
- May or may not be a problem on Satsuma
- Rainfall or heavy dew during bloom
- Fruitlets drop leaving “persistent button”
- Model: <http://pfd.ifas.ufl.edu>
- Fungicides
 - Ferbam
 - Strobilurins



Questions?

Thank you
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