

Surround[®]

Agricultural Crop Protectant



Use Less Water to Establish Strawberries

Successful transplanting of strawberry plants can depend on a number of factors such as plant type, quality of nursery plants, field preparation, handling during the planting process and environmental factors. The plant's ability to generate roots and establish normal growth can be greatly impacted by water stress, especially when the new environment is one of greater light intensity and higher heat.

Surround Crop Protectant provides a proven solution that mitigates the impact of intense light and heat. The kaolin particles in Surround reflect the damaging infrared and ultraviolet radiation that increases plant surface temperatures. A cooler plant surface reduces heat stress and sunburn, improves transplant establishment and, as shown by research conducted at the Gulf Coast Research and Education Center of the IFAS/University of Florida, can reduce the amount of water used during the transplanting period.

University of Florida/IFAS Extension Study Findings

Cultural Practices for Vegetable and Small Fruit Crops: Using Kaolin Clay to Reduce Sprinkler Irrigation for Strawberry Transplant Establishment¹

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Small-Plot Studies

Results showed that an application of kaolin clay on the strawberry foliage after either 6 or 8 days of sprinkler irrigation had the same plant establishment, plant canopy diameter and early fruit weight as the 10-day irrigated control (Table 1). A 40% reduction of establishment irrigation volumes was achieved with the application of kaolin clay, which might represent major water savings for strawberry production.

Table 1. Effects of length of sprinkler irrigation and timing of kaolin clay application on the plant establishment and canopy plant diameter at three weeks after transplant, and early marketable fruit weight for the first 10 harvests

Establishment program	Plant establishment ¹ (%)	Canopy diameter (cm)	Early fruit weight (ton/acre)
10 days of sprinkler (control)	99a	18a	3.5a
8 days of sprinkler	88b	18a	2.9b
8 days of sprinkler + kaolin clay on the 9th day	99a	18a	3.6a
6 days of sprinkler	79b	17a	2.8b
6 days of sprinkler + kaolin clay on the 7th day	98a	17a	3.5a
4 days of sprinkler	57c	13b	1.6d
4 days of sprinkler + kaolin clay on the 5th day	81b	17a	2.3a
Significance (P < 0.05)	*	*	*

¹ Values followed by the same letter do not statistically differ at the 5% level. Data combined from two seasons in Balm, Florida.

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Large-Field Validations

Fields were treated with either 10 days of sprinkler irrigation or 7 days of sprinkler irrigation followed by kaolin clay on the 8th day.

The results demonstrated that the application of 70% of the sprinkler irrigation volume traditionally used by strawberry growers followed by foliar application of kaolin clay on the morning of the 8th day could save a significant water volume (30%) while achieving the same plant establishment and early yields (Table 2).

Table 2. Effects of irrigation programs on strawberry plant establishment in growers' fields, 2009-10 and 2010-11 seasons, Hillsborough, Polk, and Manatee Counties, Florida

Establishment program	Grower number	Cultivars	Plant number	Plant establishment ¹
2009-2010				
10 days of sprinkler (control)	1	"Treasure"	1200	99.3a
7 days of sprinkler + kaolin clay on the 8th day			1200	99.4a
Significance (P < 0.05)				NS
2010-2011				
10 days of sprinkler (control)	6	"Treasure" "Strawberry Festival"	7645	99.2a
7 days of sprinkler + kaolin clay on the 8th day			7645	98.8a
Significance (P < 0.05)				NS

¹ Values followed by the same letter do not statistically differ at the 5% level. NS = nonsignificant differences.

Recommendations for Transplants

Use at 25-50 lbs per 100 gallons of water of Surround WP per acre in sufficient water for complete coverage. Surround may be applied in a band spray. Adjust the band width to provide full coverage and adjust the volume of water based on plant size. **Do not apply once fruit appears.**

Application Tips:

- Apply the spray volume that will achieve near-drip coverage.
- Best results are usually achieved at 37.5 lbs per 100 gallons of water.
- Surfactants may improve spreading.
- Consult the specimen label for instructions on aerial application.
- See Surround Spray Guide for more information on application techniques.
- Surround can be applied with most other insecticides, miticides and fungicides. Conduct a compatibility test to ensure tank-mix compatibility.
- Do not apply Surround through any type of overhead irrigation system.
- Do not dip transplants into Surround solution.

For a copy of the complete University of Florida research report, or for more information about Surround, visit www.novasource.com.

Important: Always read the label before buying and follow label instructions when using this product. The use of Surround[®] WP in agricultural crop protection applications is covered by US Patents 6,027,740; 6,069,112; 6,110,867; 6,156,327; 6,464,995 and 6,877,275.

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