



**EQIP 484 PRACTICE GUIDELINES:** Row cover mulching for strawberry cropping systems

EQIP 2008 Cost list item: 484—MULCHING—Row Covers for strawberry cropping systems (10 acre maximum per operation for FY 2008)

**Name/EQIP Contract #:** \_\_\_\_\_

**General description/Purpose of practice:** The adverse impact of frost and freeze weather events on strawberry plants is well-documented. Additionally, the traditional method of plant protection, overhead sprinkler irrigation, results in use of excessive amounts of water that contributes to detachment of soil, as well as surface runoff of eroded soil particles, dissolved nutrients, and pesticides. Row covers have been shown to provide effective frost and freeze protection, allowing producers to eliminate the use of overhead sprinklers so that drip irrigation can be used for plant moisture needs. Using row covers for frost and freeze protection, thereby eliminating excessive water use through sprinkler irrigation will reduce the negative impacts of surface runoff on intensively managed strawberry operations.

Applicant initials

**Conditions for practice eligibility:** In order to be eligible for this practice, a producer must have utilized sprinkler irrigation for frost and freeze crop protection during the previous growing season.

**Practice procedures and criteria:**

- Spun-bonded woven row covers weighing at least 1.0 ounce per square yard should be installed in late fall (Nov 15-Dec 15) in order to maximize plant hardiness. By delaying installation of the covers, plants should accumulate greater winter vigor from already being exposed to cooler temperatures than plants covered earlier in the fall. Although fall installation is recommended, producers, at their discretion, may delay installation until seasonally needed for typical winter cold protection as long as sprinkler irrigation protection is minimized to the maximum possible extent.
- Once covers are applied in late fall, they should remain in place until the end of plant dormancy (when new leaf growth emerges from the crowns). However, some degree of flexibility is allowed to remove covers at limited times during the growing season to help regulate plant growth and to help producers assess plants for pest problems. Covers should typically be seasonally removed by Feb 15. This is especially important in the mountains and foothills of NC. By removing covers when new leaf growth begins, the strawberry will not progress as rapidly to the “open-blossom” stage, where the plant is still very vulnerable to late winter freezes, or “Arctic clipper” windborne freezes. After initial removal, row covers should be rolled up and left in the field for protective use as described in the next bullet, but must be removed and stored in a dry, sheltered location by the following dates: Mountain region, May 15; Piedmont, May 1; Coastal Plain, April 25.
- For late season protection, row covers should be re-applied for regular or windborne freeze protection. 1.0 oz covers can provide 4 to 6 degrees of protection, while 1.5 oz covers can provide 6 to 8 degrees of protection. Row covers should be applied at least one day prior to windborne freeze events if possible.

- A minimal amount of sprinkler irrigation may be utilized to supplement row cover protection during late winter freeze events to prevent excessive crop losses. This minimal usage of sprinkler irrigation should be recorded on the attached recordkeeping form.
- The covers must be installed for at least 3 growing seasons to maintain EQIP contract compliance. EQIP cost-sharing on the row covers will be paid during the first year of the contract after certification of installation by the designated conservationist. Cost-share is paid on the row covers one time, after initial installation, but must be re-installed the 2<sup>nd</sup> and 3<sup>rd</sup> contract years to remain in EQIP contract compliance.

**INSTALLATION CRITERIA:**

- Spun-bonded covers that are manufactured with glued seams are recommended, however, covers with non-glued seams may be used if manufacturer can certify the covers will not come apart for at least 3 growing seasons.
- Recommended weight of covers: A minimum of 1.0 oz/sq yard for sandhills, coastal plain, and certain warmer piedmont climates; 1.5 oz/sq yard for northern piedmont, foothills, and mountain regions.
- Gravel “hold-down” bags or equivalent method that does not tear or cut cover material must be used to keep covers in place and for preservation of covers. Shoveling soil onto the covers or using wire hooks for hold down will accelerate deterioration of the covers and should be avoided. Gravel bags (nylon-mesh bags filled with 15-17 lbs of 1-2.5 inch gravel) should be placed every 5 feet along cover edges, and can be placed closer together in particularly windy areas.
- Designated conservationist must certify that covers are installed properly in order to certify practice completion for cost-share payment in first contract year. Status reviews will be performed to check cover placement in 2<sup>nd</sup> and 3<sup>rd</sup> contract years. Status or practice certification reviews should be performed during times and temperature ranges where row covers would be effective for cold protection so that minimization of sprinkler cold protection can be verified.

**Additional information and considerations:**

- Critical temperatures for protection during various stages of strawberry development: (Perry and Poling, 1985)

<i>Stage of development</i>	<i>Critical temp (°F)</i>
Tight-bud	22.0
Popcorn	26.5
Open Blossom	30.0
Fruit	28.0

- It is strongly recommended that producers subscribe to the “berry-mg” NC Cooperative Extension listserv to receive alerts on cold weather events during the winter season. To subscribe to the listserv, send an email to [majordomo@ces.ncsu.edu](mailto:majordomo@ces.ncsu.edu). Put “subscribe berry-mg” in the message body.
- Use of row covers ONLY for cold protection will likely result in some degree of crop loss, especially in popcorn and open blossom late-winter growth stages.
- The covers must be stored in DRY shelter during the off-season to maximize their useful life.



**484 EQIP RECORDKEEPING DOCUMENTATION**  
**Row cover mulching for strawberry cropping systems**

**Producer/Farm Name:** \_\_\_\_\_

**EQIP Contract No:** \_\_\_\_\_

**Tract:** \_\_\_\_\_

**Field:** \_\_\_\_\_

- **Initial (first contract year) installation certification:**

**I certify that I have installed row covers as specified in the Practice and Installation criteria in this job sheet:**

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**Signature of contract holder** \_\_\_\_\_ **Date** \_\_\_\_\_

**This practice has been installed and meets NRCS Standards as set forth in this job sheet. \_\_\_\_\_ acres of row covers are determined to have been installed.**

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**Designated Conservationist** \_\_\_\_\_ **Date** \_\_\_\_\_

- **Sprinkler Irrigation Events (must be minimal as specified in job sheet):**

<i>Date</i>	<i>Area irrigated</i>	<i>App Rate</i>

- **Record of 2<sup>nd</sup> and 3<sup>rd</sup> year installations:**

<i>Date of installation</i>	<i>Acres installed</i>	<i>Producer initials</i>	<i>Designated Conservationist initials/comments</i>