

Easter Freeze Report: Impact on 2007 Strawberry Crop in North Carolina

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The North Carolina strawberry industry still managed to produce more than an 80 percent crop in spring 2007 despite the unprecedented Easter freeze (April 7-8), that devastated tree fruit, bramble, blueberry and grape crops in North Carolina. Perhaps the most important reason that the strawberry industry escaped with so little injury relative to other fruit industries in the state has to do with the fact that the strawberry is a *low-growing crop*, and the support of an ice-load from overhead sprinkling is not an important issue, as it often can be in tree fruit and vine crops where limb and shoot breakage are common occurrences when over-tree or over-vine sprinkling is attempted under high wind conditions. Unlike tall growing plants, the strawberry is also an ideal candidate for floating row covers which are being increasingly used by many strawberry growers in the North Carolina to substitute for sprinkling, or to supplement sprinkling under severe freeze conditions, such as those that occurred Easter weekend 2007 in the western piedmont and mountains of North Carolina. In these western sections of the state, very few strawberry growers escaped the Easter freeze without very serious damage. In Western NC, especially in strawberry growing areas north of Asheville, temperatures plummeted 10^oF Easter morning (08-April), and winds were “howling” all through the night.

High winds and temperatures in the mid-to-upper teens were also a major problem for growers in western piedmont areas such as Davidson County (Lexington) and Forsyth County (Winston-Salem). On several farms in this region, crop losses exceeded 50 percent because of “evaporative cooling” injury to open blossoms from sprinkler irrigation (winds were in excess of 10 MPH). Experience is often said to be a “good teacher”, but this says nothing about experience being a kind teacher! And, strawberry growers using sprinkler irrigation in the windborne freeze conditions found *experience* to be a very cruel teacher! Fortunately, a number of growers in western sections of the state had heard about the merits of combining sprinkling with row covers under high wind conditions, and yields on these strawberry farms were substantially better than on farms where only irrigation was applied Easter weekend.

Over some 15 years of dealing with similar types of massive arctic freezes during the pre-bloom period in late winter (usually early March), we have noted that that winds will often significantly die down during the third night of an arctic freeze. And, in fact, the so-called *Easter freeze of 2007* “morphed” into a radiational frost over many eastern sections of the state (central piedmont, sandhills and coastal plain). Winds died down enough after midnight (Easter morning), that growers using only sprinkler irrigation were able save 90 percent or more of their open blossoms – blossoms that would have otherwise been killed without sprinkling. Unfortunately, lighter weight row covers (1.0 oz/sq yd), did not provide adequate blossom protection in areas that had minimum temperatures below 24 F -- which was just about everywhere in the central piedmont,

sandhills and coastal plain. Again, the use of sprinkling over top of the row covers proved to be the best overall approach on farms with lighter weight row covers, or older covers that were in relatively poor condition. Good results were reported by growers using 1.5 ounce covers in areas that did not have minimum temperatures go below 22 F.

In conclusion, strawberry acreage in North Carolina has been inching up again in recent years, and the National Agricultural Statistics Service, USDA, estimated North Carolina acreage to be 1500 acres in 2005, and I would conservatively estimate that about 1700 acres were planted in late summer/fall 2006 for the spring 2007 crop. With an estimated overall statewide crop reduction of about 20 percent due to the Easter freeze, this would mean that the state had potential for an approximate 25.5 million pound crop (assuming a 15,000 pounds per acre average)¹, but only produced about 20.4 million pounds, or a loss in revenue to state growers of about \$4.8 million dollars, if you assume an average blended price for U-pick and ready-pick of \$0.95 per pound.

¹ The National Agricultural Statistics Service, USDA, used a 15,000 lb/acre average for North Carolina in 2005