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Apple Imprinting

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Apple Imprinting

Abstract

Anthocyanin is the pigment that develops in the skin of apples and produces the red color associated with some apple cultivars. Apples are dependent on light to develop anthocyanins. This is the reason why some apples develop leaf-like shapes in their pigment on the skin; the leaf excludes the light in its shape and the red color pigment doesn't develop. Apple imprinting is a lightmanipulation technique used to produce an intentional design on the skin of apples. This technique is used in Japan where fruit can be a prized gift, and apples imprinted with special logos can bring a very high price. One orchard in western Canada imprints the logos of two competing hockey teams on apples to increase the value and obtain a considerable return on their investment. Iowa orchardists could create a valuable addition to their marketing strategies if they use apple imprinting techniques. The purpose of this study was to imprint apples with the goal of learning the process in Iowa with local apple cultivars.

Keywords

RFR A9040, Horticulture

Disciplines

Agricultural Science | Agriculture | Fruit Science | Horticulture

Apple Imprinting

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Introduction

Anthocyanin is the pigment that develops in the skin of apples and produces the red color associated with some apple cultivars. Apples are dependent on light to develop anthocyanins. This is the reason why some apples develop leaf-like shapes in their pigment on the skin; the leaf excludes the light in its shape and the red color pigment doesn't develop. Apple imprinting is a light-manipulation technique used to produce an intentional design on the skin of apples. This technique is used in Japan where fruit can be a prized gift, and apples imprinted with special logos can bring a very high price. One orchard in western Canada imprints the logos of two competing hockey teams on apples to increase the value and obtain a considerable return on their investment. Iowa orchardists could create a valuable addition to their marketing strategies if they use apple imprinting techniques. The purpose of this study was to imprint apples with the goal of learning the process in Iowa with local apple cultivars.

Materials and Methods

We started in the spring when the king fruit were about 1 inch in diameter and bagged apples from seven red cultivars—Chieftain, (Enterprise or Empire), Gala, Royal Gala, Red Court, Idared, and Starkspur Red Rome. The bags were a double-layered bag made of a red translucent inner bag with an opaque paper outer bag. The bags came from Wilson

Orchard and Vineyard Supply (Red Apple Bag #6 large). These bags were allowed to remain on the fruit during the growing season to exclude light and allow the fruit to etiolate. Bags also exclude many insect and disease pests. The bags were removed and stickers were applied between two to four weeks before the estimated harvest date. The time between bag removal and harvest was increased for later ripening cultivars. Stickers were applied when the bags were removed. If the apple was exposed to direct sun the interior red bag of the double layer was placed back on the apple for a week. This was done because some of the earliest apples suffered from sun burning if they were not protected by the tree's canopy. After the sticker was applied and the red bag removed, the apples were turned every week by hand to ensure uniform color on all sides.

Results and Discussion

Of the 95 apples that were bagged, 46 remained on the trees at the end of the summer. Eleven of these had mechanical damage from the bag rubbing against the apple or possibly from damage sustained when the bags were attached in the spring. Of the 35 apples that had stickers applied, 17 apples were marketable. Some of the problems encountered during this project in the first year included the timing of placing the bags, sunburn if the apple was exposed to direct sunlight immediately when the bag was removed, and tissue damage if too much pressure was used when applying the sticker. Apples not positioned directly in prevailing summer and fall wind remained on the trees better than those on primarily the west side of the trees. Apple growers should experiment with apple imprinting to determine which red-colored cultivars and site conditions can be adapted in their own orchard.



Figure 1. Apples bagged when green, before red pigments are formed in apple.



Figure 2. Sticker applied to apple when green. The apple will be exposed to light and the area without the blocked area of the sticker will develop red pigment.



Figure 3. Imprinted apples at harvest. Commercial stickers with messages such as "Seasons Greetings" and "Happy Halloween" are available.