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SUPPLY

August has been a month of transitions. We opened the month with strong shipments of California and the last arrivals from Peru. September will open with nearly 100% of the supply coming from Mexico, with a handful of Chilean containers arriving each week.

Transitions are magnified during the month of August, not only in the transition from three

countries of origin to essentially one, but also by the different flowering periods in Mexico. In 2014 and 2015, there were large supplies of Flor Loca, the earliest of the Mexican blooms to acquire sufficient dry matter. In fact, 2015 was a record year for Flor Loca. 2016 is very different. The Flor Loca is made up of much less volume than in 2015 and sizes have been much smaller. This allowed the value of large avocados to remain high in August, while the value of smaller avocados eroded.

In September and October, Mexico will complete the transition from the Flor Loca into the normal bloom. This will return to large volumes (35+ million pounds/week). Despite the announcement that avocados from Jalisco will be allowed into the United States, this decision has not been finalized. USDA and Mexican authorities continue to iron out the details of this arrangement. As a result, Michoacan remains the only state able to export avocados to the United States for the time being.

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California appears to be headed toward an “off” production year in 2017. Heavy production in 2016, coupled with stress from the drought resulted in a much lighter fruit set, especially in the Northern growing districts. Index will continue its grower seminars next season with cultural information to help growers maximize production.

It is still too early to predict volumes from South America in 2017. Like, California, Chile has suffered a prolonged drought. This drought contributed to a 20% attrition in Chilean avocado acreage, primarily in the northern growing districts. At the same time, demand for Global Gap avocados from Chile continues to grow in Europe, Asia, and the Southern Cone countries of Chile and Argentina, resulting in much smaller volumes shipping to the US compared to 5 or 7 years ago.

The 2017 Peruvian crop will not set until November and December of this year. After the high prices they received in the US market this summer, growers in that country are hoping for an “on” year. Winter temperatures have been cooler than they were during the El Niño influenced temperatures of winter 2015. Growers hope that this will be more conducive to a better set and larger sizes than they had last season.

GIOVANNI CAVALETTI, V.P., Sourcing

GAP, GFSI, GLOBAL GAP AND WORLD-WIDE MARKETS

Avocado demand is growing worldwide. Europe has seen consumption increase at double digit rates, absorbing increasing volume from Chile, Peru, Africa and to a lesser degree Mexico. Over the last several years, a window of opportunity for California fruit in Europe has opened each spring as Chilean volume declines and before Peruvian volume peaks. Despite the strong returns available during this window, the California industry has played a very limited role in the European market. The principal reason for California’s absence is the lack of Global GAP certification at the grove level.

For the last several years, important U.S. retail and food service customers have been asking California avocado producers to be audited and certified under the GAP Ranch regime. The majority of California volume has been certified under this plan. In 2017, driven by the implementation of the Food Safety Modernization Act (FSMA) and consumer concerns, major customers will raise the bar by asking growers to adopt the GFSI audit format, a higher level certification.

Unfortunately, the GFSI audit does not allow growers to access the European market, but Global GAP will satisfy the needs of U.S. customers. With that in mind, the argument can be made that California growers should upgrade their food safety programs from the Ranch Audit to Global GAP, bypassing GFSI and opening up the option to ship to the European Market.

Index will be supplying assistance to prepare for Global GAP and GFSI audits and both will qualify for Index’s GAP incentive program. As you plan your food safety program, please consider taking the step up to Global GAP ensuring access to avocado markets world-wide. We will be providing additional information on both Global GAP and GFSI as we begin 2017.

DANA THOMAS President

FRESH FACTS APP

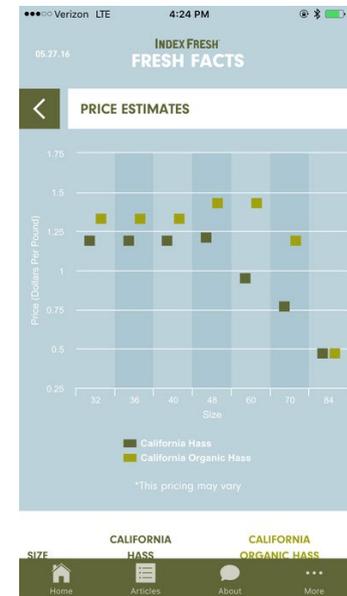
Index Fresh is excited about our new Fresh Facts App. Available on smart phones with both Apple and Google operating systems, the Fresh Facts App provides price estimates, harvest rates and inventory information delivered to your phone daily during the California season. In addition, the APP provides access to the Index Newsletter and other articles of interest to California growers. The Fresh Facts will continue to be available on the Index website and by email.

Please download the Fresh Facts App from your phone’s App store prior to the 2017 season and let us know if you have ideas how it can better meet your needs.

DANA THOMAS President



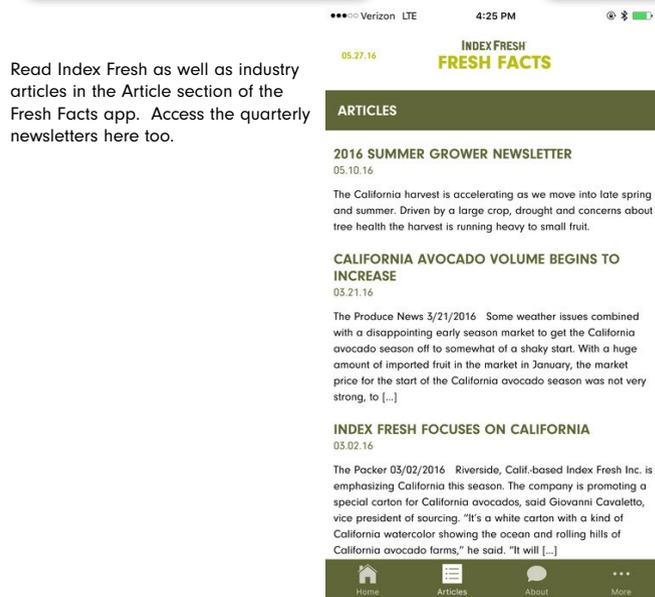
Home screen to navigate through the app. Access Price Estimates, California Bin Counts, Inventory and Shipments, Harvest and Arrival and Hass Inventory



View the most current Price Estimates for Hass, Organic Hass and Lamb Hass



Access Bin Counts, Inventory, and Shipment information here



Read Index Fresh as well as industry articles in the Article section of the Fresh Facts app. Access the quarterly newsletters here too.



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WHY GIRDLE?

Girdling is a task that has been used for at least the past 100 years in avocado production to increase yields. In an article published in the 1920-21 CAS yearbook, J. ELIOT COIT reveals some of the work that's been done on the Taft avocado variety with good results and calls for more research on this practice.

While practiced by many for years, the physiology of girdling is not well understood by most growers. What happens to the tree when girdled? How does the branch that's girdled change? Are there long term effects to the tree when it's girdled? This article will attempt to answer these questions and more.

What is a girdle?

A girdle is a cut around the circumference of a tree branch to temporarily interrupt the flow of sap to lower portions of the tree. In some methods plant tissue is removed while in other methods only a thin cut is



made. Depending on the depth and width of the cut as well as the overall health and vigor of the tree, the healing time will vary which will restore the downward flow of sap.

There are generally two types of girdles. The first type is one which makes a fairly wide cut about $\frac{3}{8}$ to $\frac{1}{2}$ inch wide and about a quarter inch deep. The wood (mostly bark) is removed where cut. This type of girdle generally takes more time to heal and utilizes a specialized tool that's about the size of a hammer with a U shaped cutting end designed specifically for this purpose.

The second type of girdle is sometimes called a cincture and is typically done with either a knife or small saw and the cut is made to the cambium layer with no wood removed. This type of girdle heals more quickly, is easier and quicker to make and it is less invasive to the tree. In either method it's important to insure that the entire circumference of the branch is cut or your results will be disappointing.



While both methods work well, the cincture method is more commonly used in avocados, produces better results and is less stressful to the tree.

What happens when a branch is girdled?

To make things easier to grasp, think of a tree branch as a bundle of straws with some straws filled with water and nutrients coming up from the roots to the leaves and other straws filled with sugars and carbohydrates coming down from the leaves flowing to the roots. The straws going up the tree are called xylem and straws going down are called phloem. Typically the Xylem (upward flowing straws) are located in the center of the branch while the phloem (downward flowing straws) are toward the outside of the branch just beneath the protective bark. When a branch is girdled the "straws" in the phloem tissue are broken creating a stoppage in the downward flow of the carbohydrates and sugars that are created in the leaves. The result is a nutrient traffic jam in the areas above the girdled branch where these nutrients accumulate since they



have nowhere else to go until the straws are repaired. In addition to these nutrients, there are also hormones produced in the leaves which can't be transported below the girdle. One of these hormones limits the growth of branches below the leaves so when its production is interrupted, faster growth of shoots below the girdle occur. This is why you often find new shoots with fast growth developing below a girdled branch.

Why does a girdled branch often produce more fruit?

Girdled branches redirect nutrients to the production of fruit and away from vegetative and root growth until the wound heals. Plant tissue with higher concentrations of nutrients are better able to support



high fruit production so branches that are girdled are "tricked" into producing more fruit. By tricked, I mean that the hormones necessary to promote fruit development are concentrated allowing for more flowers to set fruit. In addition, some observers have reported a longer flowering period that also contributes to increased production.

The use of a cincture (thin cut) allows the wound to heal rapidly so that the tree can go about the business of sizing-up the increased amount of fruit on the girdled branch.

Are there long term affects to the tree that's girdled?

Care should be taken to insure that any tree that's girdled is healthy or there could be longer term problems. Keep in mind that when a branch is girdled, the nutrients that are produced in the foliage above the girdle would normally be distributed throughout the rest of the tree and not just the fruit. If the tree is in need of those nutrients elsewhere, they will not be available. In a healthy tree, only one or two branches should be girdled leaving other branches intact to supply nutrients to remainder of the tree. Each year a different branch or set of branches may be girdled, so that over three to four years each major branch has been girdled once. If you have doubts about whether a tree is healthy enough to cincture, a good "rule-of-thumb" is to pass it by.

Conclusions

In some ways, girdling can be compared to robbing Peter to pay Paul. The nutrients that would normally be allocated to making more roots or other plant tissue are redirected to making more fruit. In a healthy tree this will not be harmful, however only healthy trees should be girdled, the cincture technique should be used and only a portion of the tree should be girdled at any one time. If you are new to gridling, it might be best to experiment on a few trees and confer with another grower or consultant who has experience with this cultural technique.

JOHN CORNELL, Newsletter Editor



The Insider by Index Fresh is a complimentary resource for interested avocado growers. To subscribe, contact your area field staff.



MIKE WINFREY

Mike began part-time work at Index Fresh as a teenager in 1962. With the exception of time in the army, he has been with us ever since. The roles he has filled at Index Fresh are diverse; floor worker, truck driver, sales-person, packing consultant in Mexico and for the majority of his career, Packinghouse Manager. His avocado knowledge and practical experience has been immensely valuable to Index Fresh, his colleagues and growers.

After fifty-four years, Mike has decided that he will retire at the end of September. He will be missed by his many friends in all departments. Personally, I will miss his expertise, his vast understanding of Index's history and his sense of humor.



There will be a celebration in his honor at the Bloomington facility for Mike to wish him well on this exciting transition.

DANA THOMAS President



IMPORTANT EVENTS:

- Leaf and Soil Analysis**
Reminder: We will be collecting samples through October. Please contact your field representative for more information.
- California Avocado Society Annual Meeting** Please stop by the Index Fresh booth. Located at Pala Casino and Resort on October 7 Field Tours and October 8 Annual Meeting



BUMPY GOODNESS

When you work with Index Fresh you can count on a few bumps...on the avocados, that is. But when it comes to our grower relationships, we keep things running nice and smooth.



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EVENTS

SEMINAR 16
GIRDLING AND GLOBAL MARKET
GAP REQUIREMENTS.

OCTOBER 25
SAN LUIS OBISPO

OCTOBER 26
VENTURA

OCTOBER 27
FALLBROOK

Locations, dates and times will be announced closer to the event date. RSVP with your field representatives.

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