

FEBRUARY 2021 UPDATE

February 4, 2021



THE LATEST FROM NICHOLS FARMS



It's month 14 since Covid started in China, and month 11 since it blew up in the USA. We've all developed a new vocabulary in the past year. In terms of the farm, processing, and marketing, pistachios have not only endured, they have thrived. The crops produced have been abundant and of good quality. Consumers are buying healthy snacks; pistachios are in their wheelhouse. Demand in the US has been steady, and export demand has mixed, but more up than down.

It's not to say there haven't been challenges. Our facility was shut down for two weeks last June due to Covid. We have operated for the past 3 months with many team members out, mostly for close contacts. One interesting sidenote is we have more than usual team members out for maternity leave. The Covid shut-down baby boom has started!

In the articles to follow, we will endeavor to update you on issues at the plant, the field, and in the marketplace. Jimmy has excellent information about winter chill. Gerrid likewise will review our recommended approach for mealy bug control this coming year. Jeff will cover how we are addressing the rock issue. And last, but certainly not least, heeerrrr'e'ssss NATALY!

We would like to introduce you to Nataly Gonzales, who will be joining the Nichols Farms Grower Relations Team. Nataly will be working closely with Janet and Gerrid to provide grower support for financial reporting, payments, Grower Portal support and purchase agreements.

Nataly started her career with Nichols Farms in August 2019 working with the Sales Department as a Customer Service Coordinator. She brought with her 10+ years of experience working in the supply chain industry. Nataly holds an AA degree in Accounting and In March 2020, she was promoted to the Finance Team as a Staff Accountant.

Nataly is intelligent, outgoing, and a pleasure to work with. She will be a great addition to our team, and we know our growers will enjoy working with her.

There are several growers who had the opportunity to meet and work with Morissa. Morissa will continue to be a backup resource for Nataly when needed but will be focusing her excellent accounting skills in another capacity for the company.

We look forward to a new year, and we will continue to provide excellent service to our Nichols Grower Family!



Chuck



CHILL UPDATE

The 2020/2021 Chilling Season is nearly complete as the major chill accumulation months December/January are behind us. The information below shows current and historical accumulations for southwest Tulare and Coalinga.

One thing to note about while reading the information below is that there are many questions about chill that are unanswered. To that matter, there are many things about pistachios that are unanswered! However, there are things that are known about chill accumulation in the list below.



Jimmy Nichols

1. The best combination for production is a cold November – mid February, and a warm spring.
2. Golden Hills does not require as much chill accumulation compared to Kerman.
3. Spray materials such as kaolin clay or calcium carbonate products can increase chill accumulation by ~10%
4. Better cultivated orchards (healthier trees) can withstand lower chill accumulation.

An explanation for bullet point four is that chill accumulation can be thought as the preservation of carbohydrates during the dormant periods. Orchards accumulate carbohydrates through photosynthesis in season and reach their highest carbohydrate storage in the fall. They store that energy in dormancy for bloom the next season.

Orchards that receive higher quality water (low in salt), are grown in good dirt without water penetration problems, receive adequate and uniform water applications, and are fertilized properly will accumulate more carbohydrates than those which are stressed.

Orchards that are healthier (achieved higher carbohydrate production during previous years) can withstand lower chill accumulation and still achieve their yield potential.

Last year on the westside in our orchards, this was observed. The corrective action we made in the 2020 season was to look at our irrigation distribution uniformity. For more information regarding that post, [here is the link from May 2020](#).

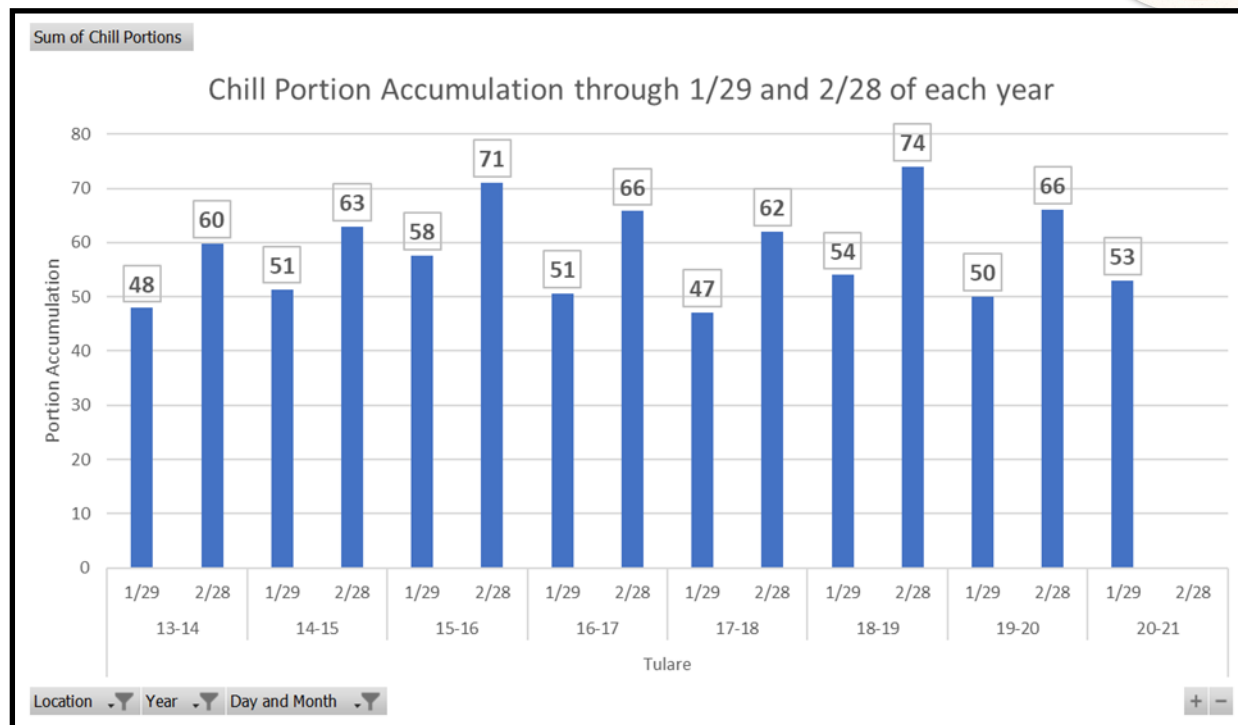
CONT'D

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CHILL UPDATE CONT'D



Tulare Chill Update - 53 portions through 1/29/21

This year's accumulation through 1/29/21 exceeds five of the past seven years' accumulation. The majority of mature bearing Kerman acreage in Tulare is positioned for a large "on crop". Tulare Kerman acreage is out of sequence with the state's "on" crop because of the warm and fogless weather incurred on the westside and southern part of the Valley during the 2014/2015 winter. Although warmer than normal, Tulare had many foggy mornings during that winter and many growers saw record crops during that year.

2021 Tulare Outlook

Despite the low amount of rainfall, Tulare has had many foggy mornings, and chill accumulation has been high compared to previous years. Fruit buds are large, which is a sign of a big crop to come!

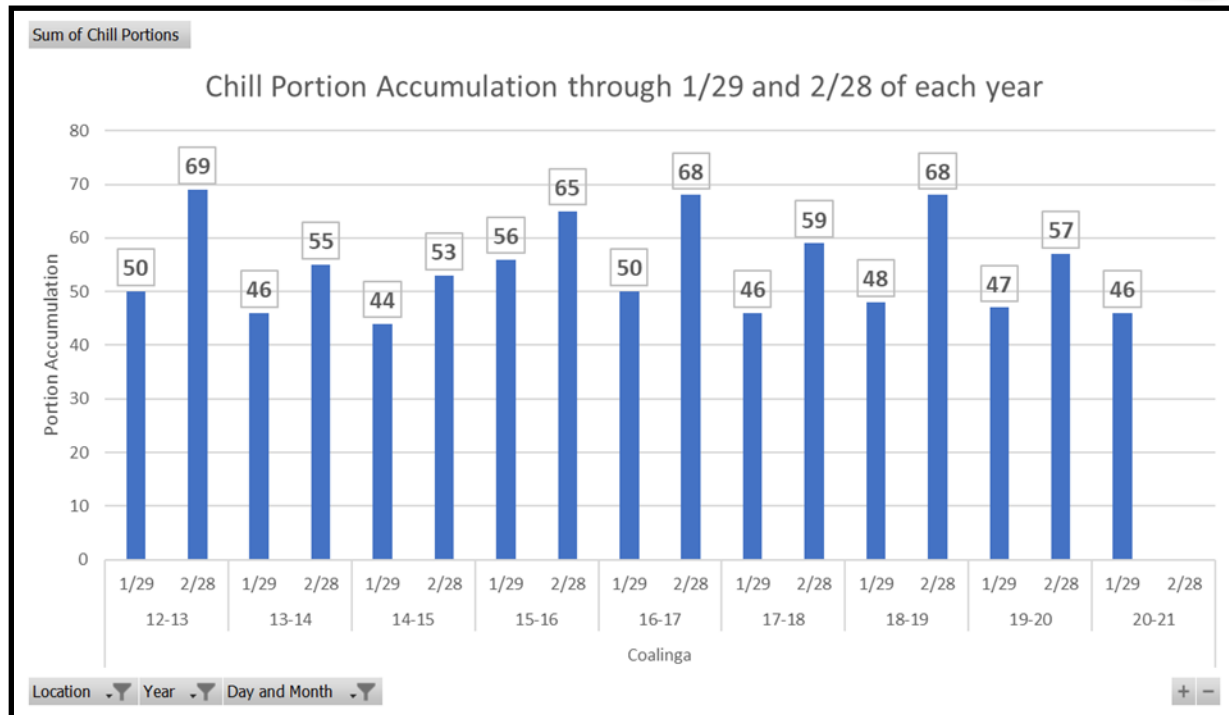
Coalinga Chill Update - 46 portions through 1/29/21

The majority of Kerman orchards on the westside of the Valley are poised for an "off crop" in 2021 following last year's "on crop". Last year's crops were disappointing and much of that disappointment can be attributed to the chill incurred. Many orchards suffered "low chill" symptoms and blanking was high compared to the previous three years.

The chill incurred through 1/29/21 is lower than last year and slightly higher than the 2014/2015 winter. This winter fruit bud sizes are comparatively smaller compared to the eastside Kerman blocks.

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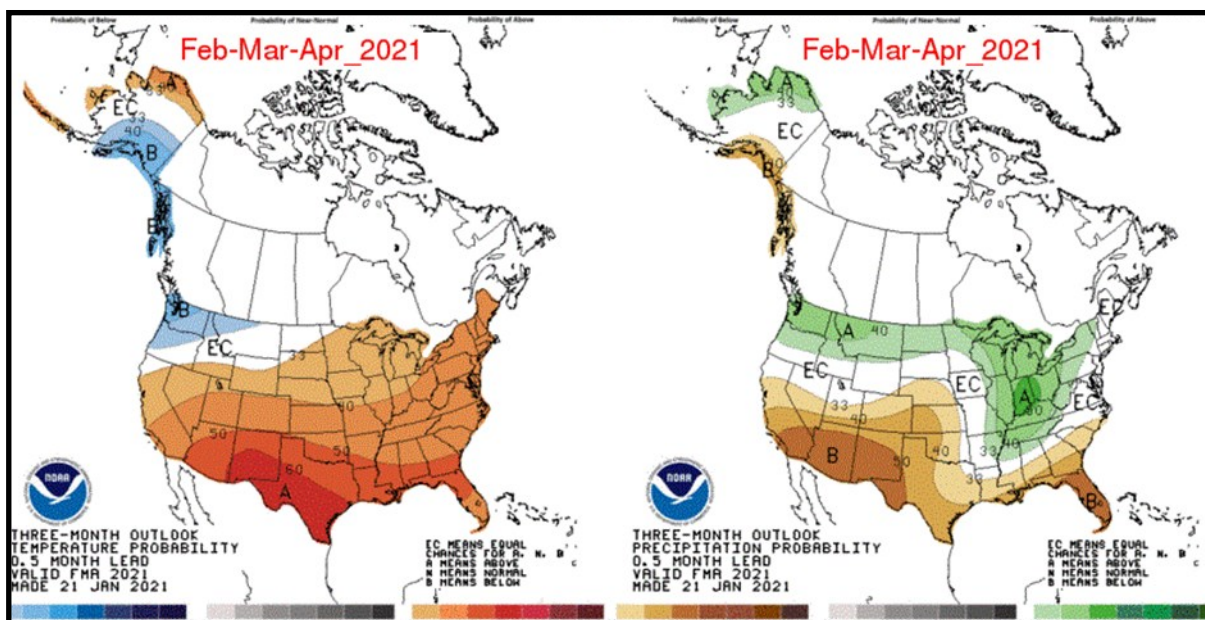
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2021 Outlook

The next several weeks are forecasted to be very cold, which will help with chill accumulation. After mid-February, it is forecasted to heat up. The three-month weather outlook shows warmer than normal temperatures and lower than normal precipitation.

Figure 1 - NOAA Temperature and Precipitation Probability Feb-Apr 2021



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GOAL: ELIMINATE ROCKS!

Rocks have been a big challenge for Nichols Farms this year. To combat this issue, we've slowed down line speeds, adjusted our equipment to target rocks instead of defects, and purchased new equipment. The chance of a customer finding a rock is a big concern and we must take extreme measures to prevent it from happening.

In our Inshell processing area we're still finding around 3-4 pounds of rocks per day and 5-6 pounds in our kernel processing area. The additional hand sorting for rocks is increasing our inshell costs by \$0.02-\$0.03 a pound and \$0.09-\$0.29 cents for kernels.



Jeff Nichols

Our new X Ray Unit (See Below) will be operational April 12th. When product is pulled in from a silo it will go through our scalper, which is used to sort out rocks using screens, and then the X Ray. All sinker products (rocks sink) will go through the new unit. During harvest pistachios go through a float/sink tank. The denser nuts will sink in water and are dried and processed differently than the nuts that float. Roughly 85% of pistachios sink and 15% float.

We'll be using X Rays to detect rocks during Harvest this year as well. About 1% of each load will go through an X Ray and if we find a rock, we'll know which load it came from.

We are encouraging all growers to load pistachios away from rocks or gravel roads this upcoming Harvest.



MEALYBUG CHALLENGES

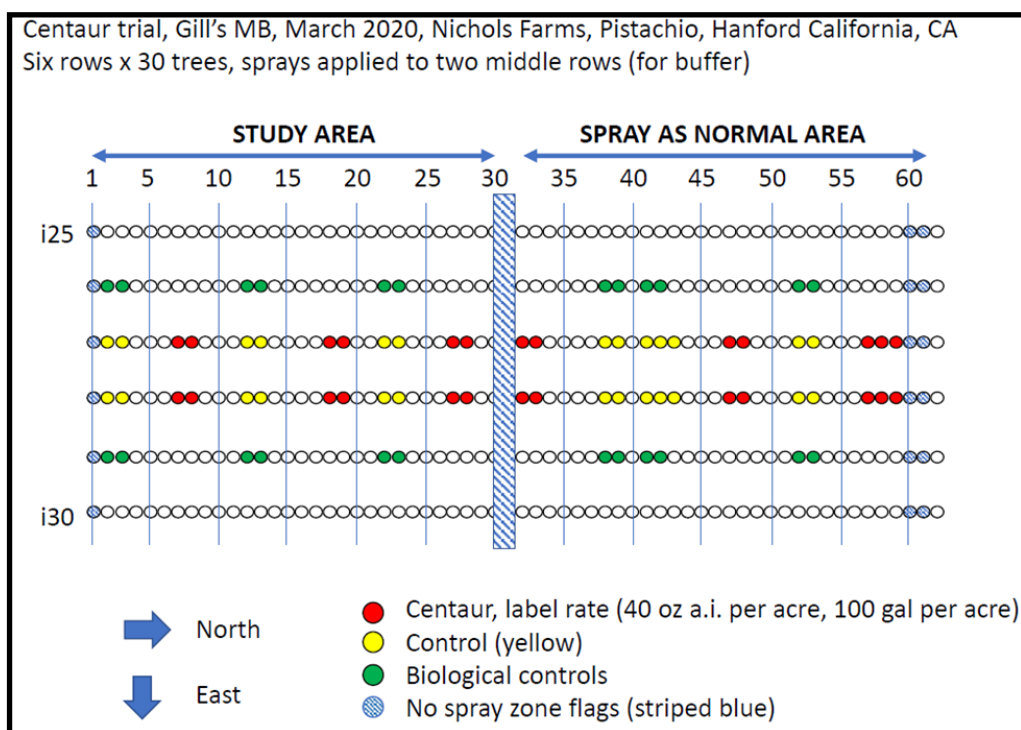
Mealybug has become a major problem in many California pistachio orchards over the past several years. High mealybug populations have led to many quality issues including staining, a reduction in inshell split percentages and an increase in closed shell defects. Like many soft scaled insects in other California crops, resistance has built up against this pest, and control has become less effective with the “approved” and limited chemical options available to pistachio growers. This challenge led to an investigation of treatment options recommended by Nichols Farms, which is shared below.



Gerrid Climer

Buprofezin, commonly known as Centaur, has been on our list of chemicals to avoid due to the strict export Maximum Residue Levels (MRLs). Centaur’s recommended application timing was early to mid-May which often resulted in residual levels above the allowed threshold. Before the 2020 crop season Nichino America Inc, makers of Centaur, worked with Nichols Farms to assess a delayed dormant application in pistachios.

The experiment was conducted in replicated trials (summarized below) by Kent Daane, CE Specialist at Kearney Agricultural Research and Education Center, on a 29-year-old Kerman orchard. The application was made on March 12, 2020 prior to bud break.



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MEALYBUG CONT'D

Centaur was effective at reducing Gills mealybug populations by 96%, and there were no residues detected.

Centaur Delayed Dormant Application Efficacy on Gills Mealybug in Pistachio Hanford, CA 2020						
Treatment	March 5 th (Pre-Application)		April 17 th		April 24 th	
	% infested buds	Average # of Mealybugs/Bud	% infested buds	Average # Mealybugs/Bud	% infested buds	Average # Mealybugs/Bud
Untreated	57	2.42	53	1.03	53	0.98
Centaur 40 oz + NIS	51	2.2	12	0.07	4	0.04
Percent difference relative to untreated	-	-	88%	94%	93%	96%

For any growers who have experienced high mealybug populations within your orchards, following is our suggestion:

- **Centaur:** A delayed dormant application by **March 15th**
- **Movento** or **Sequoia:** Mid May (**Movento**) to early June (**Sequoia**) targeting crawler hatch
- **Assail** or **Sequoia:** Late July targeting second crawler hatch

Application timing is KEY for each of the products listed above! Please work with your PCA for a plan of action. If there are any questions or concerns you can give me, **Gerrid Climer**, a call to discuss the applications.

Regarding other chemical treatments for mealybug, Imidacloprid has been the primary available material. It has the highest MRL for most export countries and is one of the most economical options. However, due to its increased use and long residual, it has become a problem with export markets. Nichols Farms and other pistachio processors are working with Director Klein of the Administrative Committee for Pistachios to develop an action plan for Imidacloprid for the 2021 season. You can expect more information regarding Imidacloprid to follow within the next few weeks.