



Quality postharvest products and service

RECOMMENDATIONS FOR WAXING FRUIT

Pre-screening fruit to determine conditions that exist is essential. Setting up the chemistry, line speed and sorters to accommodate the conditions of the fruit is a step in the process often overlooked and the packer spends more time reacting to poor cleaning and or coatings on the fruit. Taking the extra time to pre-screen the fruit saves down time fixing what could have been done before the packing crew arrived.



DUMP TANK

1. Heat is very important, even a moderate temperature of 70 degrees can make a huge difference in the final end product of your apples appearance, there are some newer instant water heaters that are small yet very effective and becoming very popular in the industry.
2. Often chemicals are used depending on the circumstances that may arise, phosphoric acid to lower the PH to fight calcium deposits, the acid also works much faster and more effectively the warmer the water in the tank, and slower in colder water. Sodium Hypo Chlorite or Calcium Chlorite Chlorine is also used when fighting and trying to kill mold spores in early and late fruit. Chlorination of dump tank water is for water quality management reducing cross contamination. Chlorination has a minimal effect on fruit itself. Acidifying or running Alkaline PH is used to aide to control heavy deposits on fruit.

SOAP BAR

1. There are several different methods of application, the drip bar method and the spray bar method with several fan nozzles on the bar, the product is injected and mixed with water. Follow label dilution ratio's on cleaners, the philosophy of a little is good a lot is better does not apply.
2. Depending on the fruit there are several scenerios that can arise, we recommend the acid soap for removal of calcium/mineral deposits, and the alkaline soap for removal of natural wax.
3. There are neutral PH soaps that are especially useful in sensitive varieties i.e. Gala, Goldens, and those with lenticel sensitive issues.
4. Running brushes at different speeds set A slow and B faster, generally a 3 to1 ratio and this will create a tumbling action or spin that aides in the cleaners working better, in Washington state the high/lows are a very popular brush for this area.



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5. Removal of compound deposits i.e. sunburn protectent products that have a sticker and clay compound mat necessitate using 2 cleaner bars of opposing chemistry. Acid to loosen the clay and Alkaline to remove the sticker.

RINSE BAR

1. This happens to be one of the most critical area's of your pre-wax application, the water should be hot (100F), and depending on the volume and flow of fruit you should have a minimum of 2 rinse bars with good pressure, preferably 3. It is critical that you rinse off all cleaners from dump tank and soap bar area's, if it is not rinsed off it can carry all through your brush bed to the wax area, and that's not good thing, check the fruit after it goes through the rinse area, if you see suds you should be concerned, rinse water is required to be potable water quality.
2. Also the warmer the water the better as it helps warm the skin of the fruit for waxing and a warmer apple also dries faster.

SANITATION BAR

1. In the last couple of years these have become very popular, the application of (Peroxyacetic Acid) is applied through the spray or drip bar method at a no rinse required level. This is applied about 2 feet after the last rinse bar.

FAN SYSTEMS

1. Drying fans are critical on every line today, even the newest lines require them as they help dry the fruit before the wax area.
2. Generally they come in banks of 2, we suggest a minimum of 3 banks or 6 fans, it really depends on each line individually, some people use up to 8 banks or 16 fans.
3. The fans are typically installed at an angle opposing the fruit flow @ 30 degrees.
4. If the apples are wet going into the wax section, the moisture mixes with and dilutes the wax making it harder to dry in the drying tunnel.
5. Drying brushes and the use of flicker bars aide in the removal of moisture.

WAX BRUSHES

1. There are generally 2 types of wax brushes that work the best, the straight brush or the high low brushes, the high low gives you a better tumbling action to better wax both ends of the fruit.
2. Always use 50% horsehair and 50% poly brushes in your wax area.



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3. Periodically check the brushes when line is running and no fruit on it, make sure the brushes are NOT touching when spinning, this will cause foaming on the fruit.
4. Clean wax brushes daily with warm to hot water and soaps or wax strippers if needed, this process should start shortly after the line has finished running for the day, the sooner you get to it, the easier the wax is to get off.
5. Alternate washing from different directions nightly, otherwise they will wear in one direction, after cleaning use flicker bars to remove water from brushes, wax brushes should be completely dry before beginning the next day. Mounting fans to run at night can also help in drying wax brushes.
6. Always pre-treat brushes with coatings before running fruit across them.
7. Last but not least, your wax brushes are a critical part of the finished product, they paint the waxes on the fruit to give you the finished product everyone in the industry wants to see, a very shiny apple.
8. The wax brushes should be replaced after running 1 million packed bushels.

SYSTEM CLEAN-UP

1. While cleaning the wax brushes please get in the habit of washing out your wax system, get a 5 gallon bucket and fill with warm to hot water, take the wand out of the wax barrel and run the water through your pump and wax system, this will keep your system clean and avoid plugging problems in the future, time is money when you can avoid these problems with the line shut down.
2. Before putting wand back into wax barrel, make sure all water has drained from the wax lines.

WAX SYSTEMS

3. There are several different methods for applying waxes, it is just a matter of getting the wax on the brushes and they paint the waxes on the fruit. I had a customer a few years ago starting a new line up, there wax pump hadn't arrived yet, so for the first 2 days we had a man with a pump up yard sprayer apply the wax, it was a fantastic wax job.
4. There are the herbie head or spinners, the only real problem with them is, it's a round system in a rectangular area. But are still quite common and used frequently today.
5. A newer application is the air cylinder wig wag system, this system is much more efficient than the older ones, more importantly you can adjust the speed of the newer ones which helps in your application of wax. This system is used to just drip the wax on the brushes, or you can add spray nozzles and very small amounts of air pressure.
6. There are some new systems coming out that are very expensive with all the bells and whistles, custom built to your specific needs, and costs can be modified. Ask your representative for a recommendation to fit your specific needs.



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7. Every packing line is different, so one system that works here may not work at the next place to get the optimum results, trials and adjustments are needed to get the best results on any line.

CLOSING

1. Lets remember the most important things to getting the best wax job possible are a CLEAN, WARM, DRY, apple, if any of these 3 factors are missing, your not likely to get the optimum benefits from our waxes.
2. If you have any questions please feel free to call your local Decco U.S. Post Harvest Inc. representative.

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