How long do oysters stay fresh?

PANGEA SHELLFISH COMPANY | JUNE 2019 NEWSLETTER

Ah, the age-old question: how long does something perishable last? We have all asked that at some point in our lives, especially in front of our fridge. Sometimes, it's easy to figure out: a weird smell, visible mold – it's probably time to throw it out. But what about perishable foods with less obvious signs, like oysters without "Best By" dates?

We have been conditioned to rely on dates to help us decide if something is still fresh or safe to eat, but **what does "fresh" really mean for oysters?** Have we assessed quality without a date bias? Our industry has become so focused on harvest dates and marketing that the oyster's actual freshness is being overlooked.

From a food safety perspective, oysters stored at proper temperatures can be safe to eat for months. Oysters were historically stored in pits or cellars during winter and consumed during the winter months. "Pitting" or overwintering oysters in coolers and cellars is still a popular technique for growers to keep oysters safe from winter sea ice.

From a freshness perspective, we at Pangea Shellfish define oyster freshness as the following:

A fresh oyster is alive, has ample liquor, and maintains its aroma and flavor from harvest.

Based on that definition, there are signs when an oyster has gone bad:

- The oyster is gaping open, which means it is weak or dead.
- The oyster is dry, which means it is weak, injured or dying.
- The oyster smells or tastes different from harvest.

We have generally found oysters to maintain our definition of "freshness" for up to 14 days. Our observations, though, have been anecdotal, and we didn't have concrete proof. So, for the month of May, we decided to put our assumptions to the test by shucking one oyster per day and tracking the changes over time.

A Month-Long Freshness Test

The Sample

For this test, we used a 100-count bag of Salten Rock Oysters from our Blish Point Oyster Farm in Barnstable, MA. We chose this oyster because we knew its seed to market process intimately. If something occurred during the test, we could potentially trace the issue back to the farm.

Procedure

We randomly selected 1 of 14 bags from Lot C-748. The lot was harvested on Saturday, April 27, picked up by our company truck, and received at our Boston facility at 4:40PM the same day. We stored the bag of oysters in a crate, on a shelf, and in our cooler for the entire test period. The cooler temperature averaged 41° F. The oysters received no special treatment. No special handling, no ice or special storage, and no wet storage.

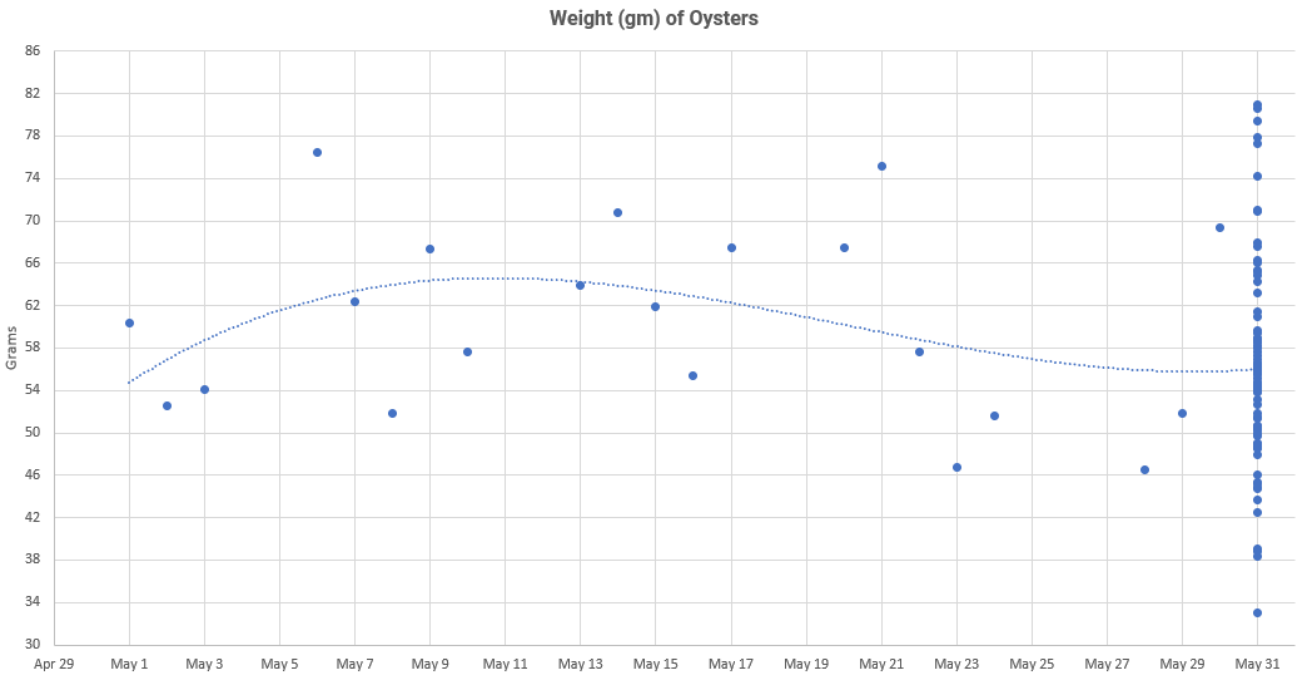
We evaluated one oyster per day. Before Bekah and I shucked each oyster, we recorded the oyster's size in inches and weight in grams. Once open, we recorded its temp, captured a photo, and noted its liquor content and flavor. On the last day of the test, May 31, we shucked all the remaining oysters to see how they held up.

Data & Results

Starting Bag Weight: 13.96 LB
Ending Bag Weight: 13.19 LB
Weight Change: -0.77 LB

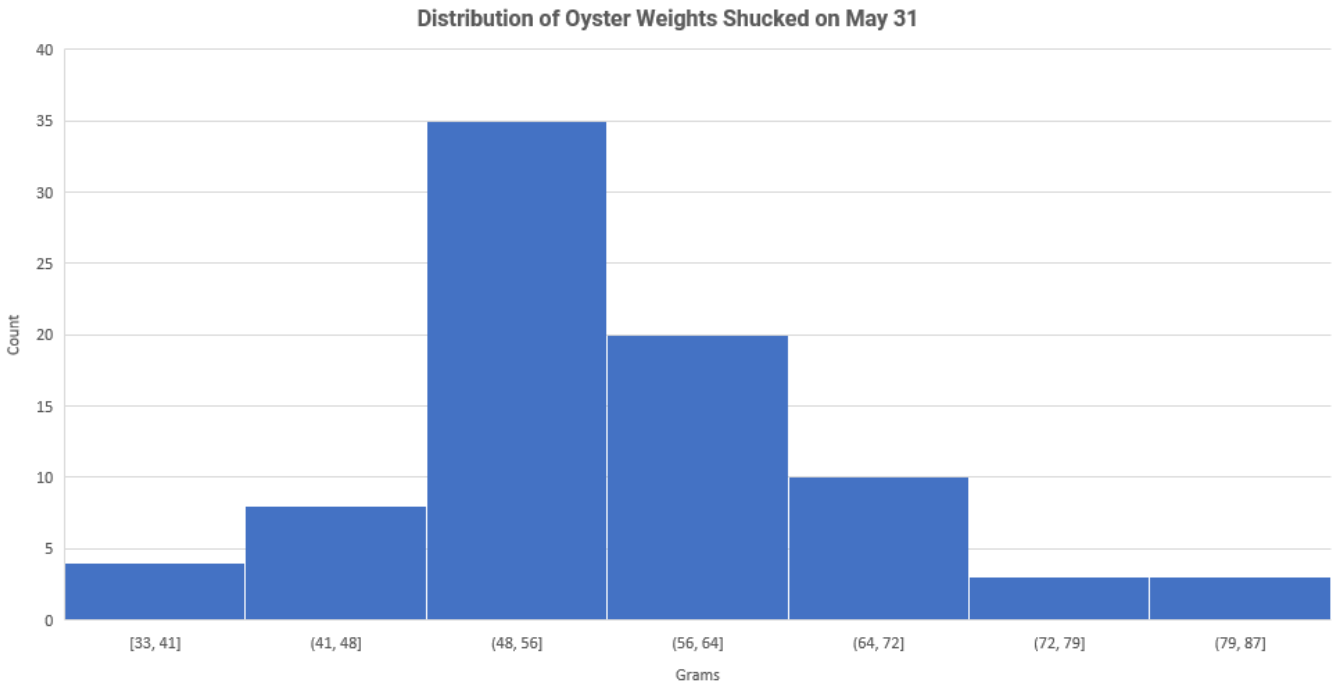
Bag Yield: 96% (4 oysters dead or dry)
Size range: 3.0” - 4.0”
Average size: 3.6”

Figure 1: The following shows the weight of each oyster evaluated per day during the test.



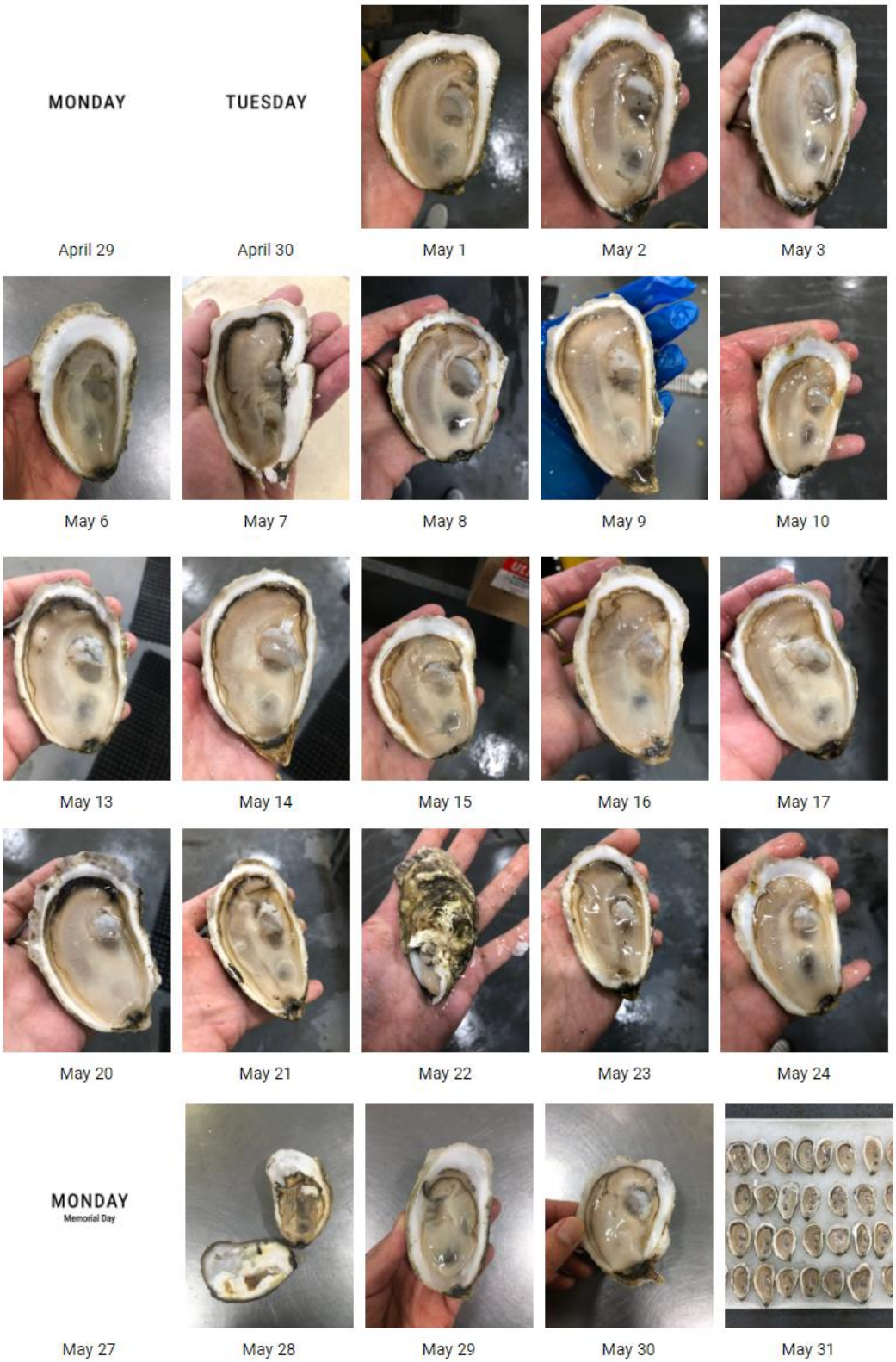
One oyster weight was recorded each work day in May. 79 oyster weights were recorded on May 31.

Figure 2: The following shows the distribution of oyster weights shucked on May 31 (34 days post-harvest). The average weight of these oysters were 56.1 grams.



Most of the oyster weights ranged between 48 to 64 grams. Mean: 56.1 grams; median: 55.2 grams; mode: 56.4 grams.

Figure 3: The following photos were captured to assess meat, liquor, and flavor.



Discussion of Results

Change in Overall Bag Weight

At the start of the test, the bag weighed 13.96 lb, and over the 34-day period, it lost 0.77 lb (349 g). If we average the weight loss across the bag, each oyster lost about 0.0077 lb (~3.5 g), about the weight of 2 playing cards. We expected this weight loss and it's within reason. Over time, moisture from the outer shells will evaporate and some oysters will weaken, losing some of its liquor in the process.

Change in Individual Oyster Weights

We hypothesized that the individual weight per oyster would decrease over time due to the expected moisture and liquor loss. What we found, however, was there was no direct correlation between time transpired and weight. In fact, oysters evaluated on May 31 (34 days post-harvest) ranged up to 80.9 grams, heavier than all oysters evaluated prior. Liquor was also visible in most of the oysters on the last day (see Figure 3).

This doesn't mean that the oysters gained weight after harvest (that'd be highly improbable). Instead, this called out a flaw in our testing method. We were just as likely to draw 5 of the largest oysters or smallest oysters from the bag each week. Doing a more extensive test or having an oyster "control group" would make this more bulletproof. But hey, we're oyster people, not scientists. One thing we can say is that the oysters we selected each day were of average weight compared to everything else in the bag (see Figure 1).

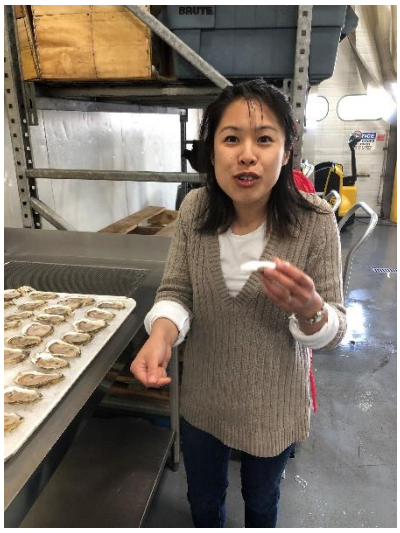
Change in Smell and Flavor

The oysters evaluated towards the start of our test easily met our definition of fresh: ample liquor, great meat fill, and flavor on point. The oysters continued to pass our standards for a few weeks with a couple exceptions (May 8 & 10). There were no significant changes until we reached May 17, 20 days post-harvest. From that point on, the smell and flavor started to turn. A couple of dead oysters started to make the bag stink. Oysters still had full meats and liquor, but they no longer tasted clean or pleasant. The funky lingering finish clearly was not representative of its merroir anymore.

Conclusions & Considerations

So what did we conclude or prove from this test?

1. Oysters are safe to eat even 30 days after its harvest date **if it has been handled and stored properly*.



Here is a photo of me eating one of the oysters on May 31, 34 days post-harvest. Happy to report I did not get sick and am alive and well to write this! (I also ate them during week 5 to assess flavor.) The caveat about handling and storage is super important to mention, though. The oysters were safe to eat because they were properly handled and stored at temp. This is a **must** to ensure safe consumption regardless of its harvest date. Mishandling is one of the greatest risks for foodborne illnesses caused by oysters, so please do your part.

2. An oyster can maintain its "freshness" or quality up to 14 days after harvest.**

From our test, oyster quality started to decline 20+ days after harvest. We generally tell customers oysters stay fresh up to 14 days, but our results showed the period of freshness may actually be longer. We like to err on the side of caution, so 14 days from harvest is probably a good rule of thumb to follow.

**This is a general conclusion and may not apply to all oysters. We recognize that different species of oysters have different shelf lives. Atlantic oysters (virginica) tend to keep better than Pacific oysters (gigas). Performing this test with Pacific oysters could have yielded a shorter freshness window. We used a farmed oyster versus a wild oyster. We used a Massachusetts oyster that feeds longer than a Canadian oyster. We acknowledge these differences in oyster characteristics can affect the outcome. This was also only one test done on a small scale. Perhaps we will repeat this again to compare our results, and maybe on another variety!

3. Freshness is not determined by dates, weights, or visual indicators. It's all in the taste.

Before we embarked on this test, we thought we could assess quality by looking at an oyster and its numbers, i.e. its dates and weights. But what this experiment showed us is those characteristics can be deceiving. It doesn't matter if an oyster is live, plump, and full of liquor. It doesn't matter if an oyster was harvested 24 days ago. What matters most is if an oyster tastes good, and to determine that, you're just going to have to eat it.