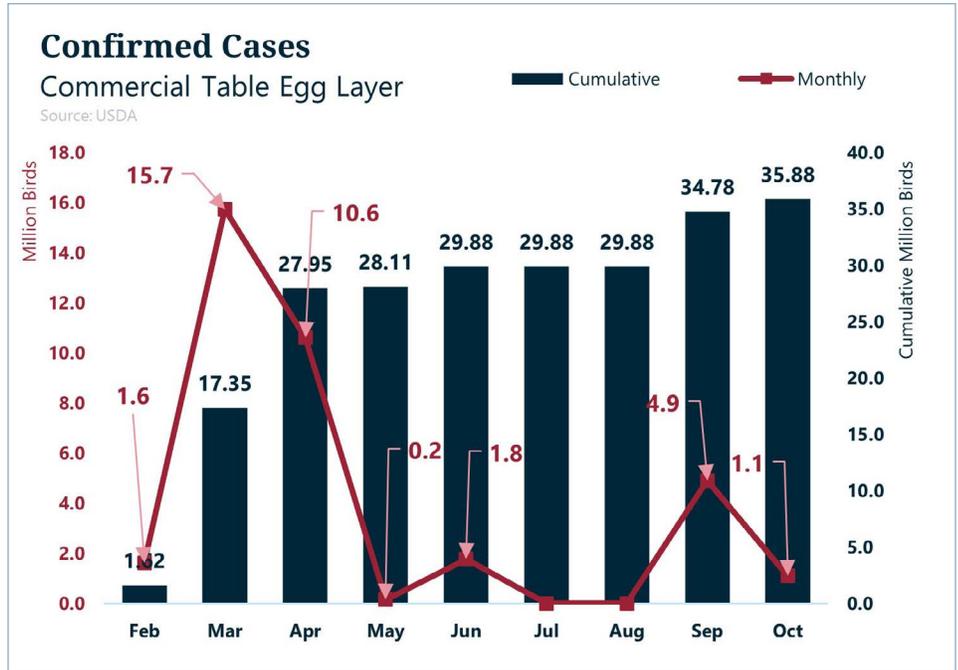


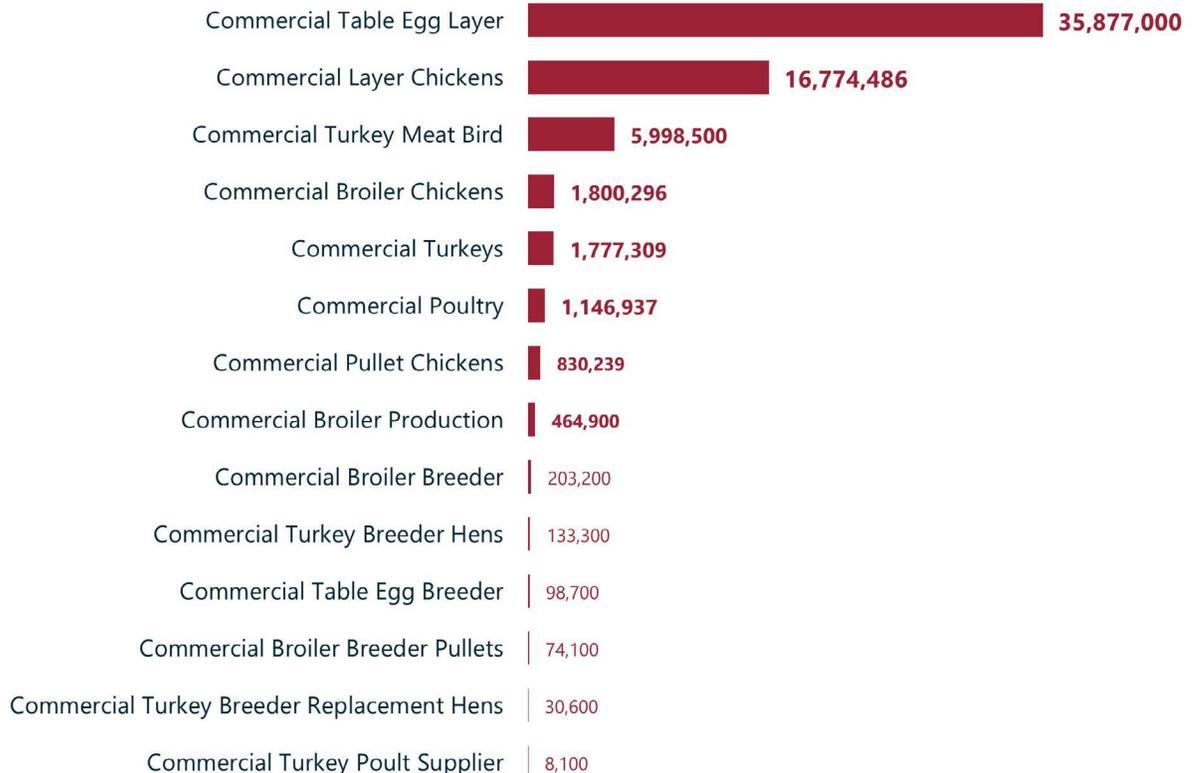
November 2022

In the early part of the year it appeared that COVID-19 was moving into the rearview and that a return to normal—or at least a new version of it—was within reach. But for those in the egg industry, that was not to be, as there was another kind of virus waiting in the wings: highly pathogenic avian influenza (HPAI). Though the egg industry has grappled with HPAI in the past—most recently in 2015—the circumstances surrounding this year’s outbreak differ greatly from previous occurrences, with potential for greater market impacts leading into the height of demand season for the protein.



Commercial Flocks Affected

source: USDA, UBC



HPAI: THEN VS. NOW

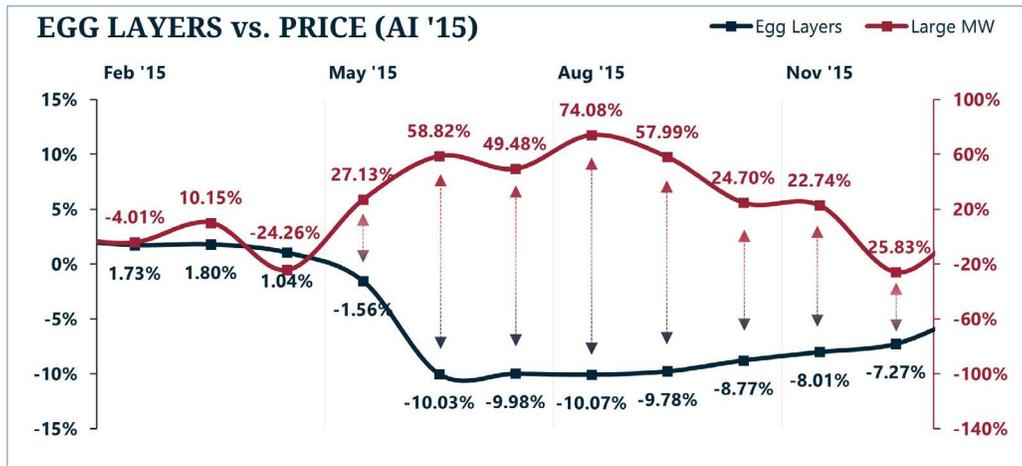
LEADING INTO 2015...

- Stable Corn Prices
- Stable Growth in Egg Layers
- No Pandemic
- No Supply Chain Disruptions
- Lower Energy Costs
- Steady Employment Costs
- No Major Market Disrupting Geo-Political Events
- Normal Rates of Inflation
- No Trade Disruptions or Tariffs
- Steady Income Growth
- Isolated to the U.S.
- First Case Detected: Late April

LEADING INTO 2022...

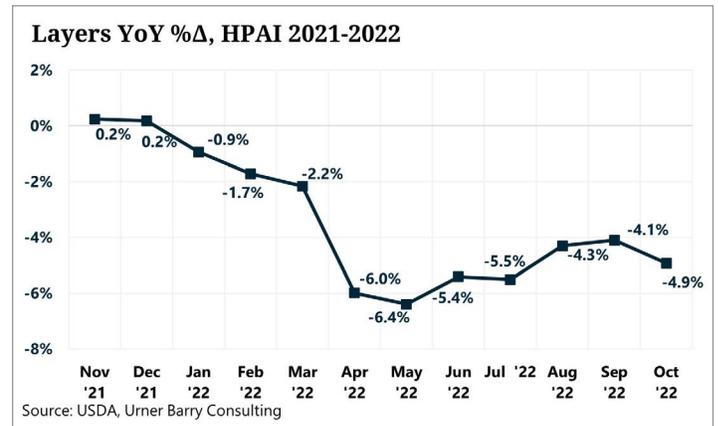
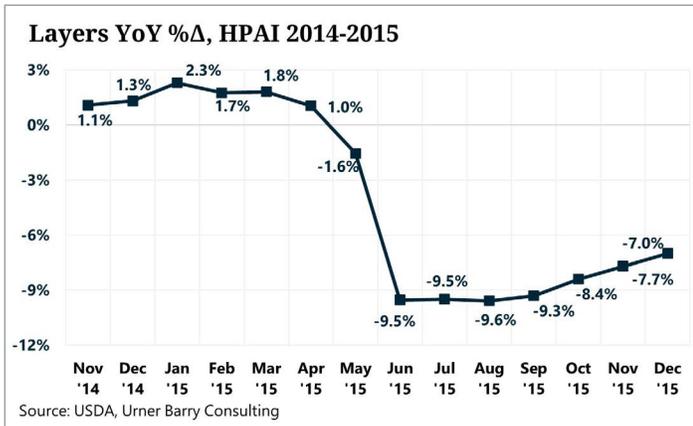
- High Corn Prices
\$5.00+ throughout 2021
- Steady Decline in Egg Layers
Transition to Cage Free
- Pandemic & Supply Chain Issues
- High Energy Costs
- Rising Employment Costs
- Major Geo-Political Disruptions
Russia-Ukraine
- Multi-Decade High Rates of Inflation
- Massive Trade Disruptions and Tariffs
- Volatile Income Levels
- Spread into Europe
- First Case Detected: Late February

Egg Layers vs. Price

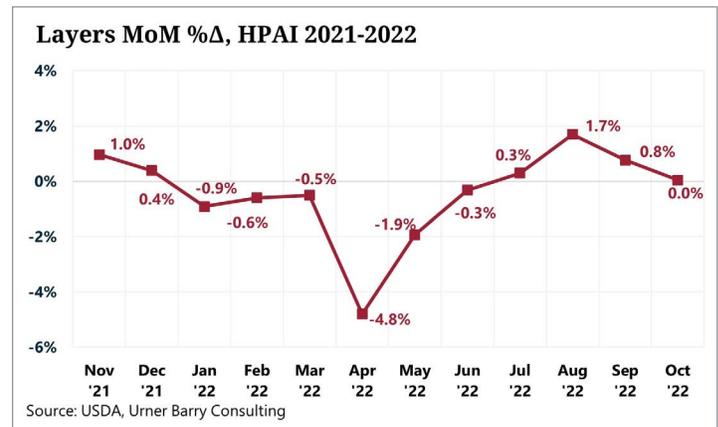
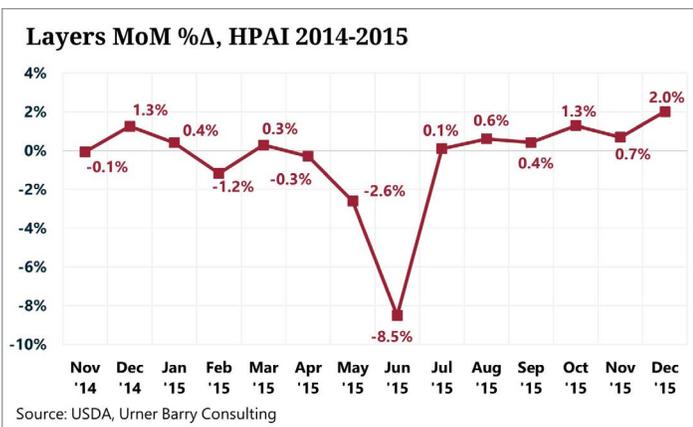


On average, for every 1% decrease of increase in egg layers, prices moved nearly 5-8% in the opposite direction.

Layers Year-Over-Year, Percent Change



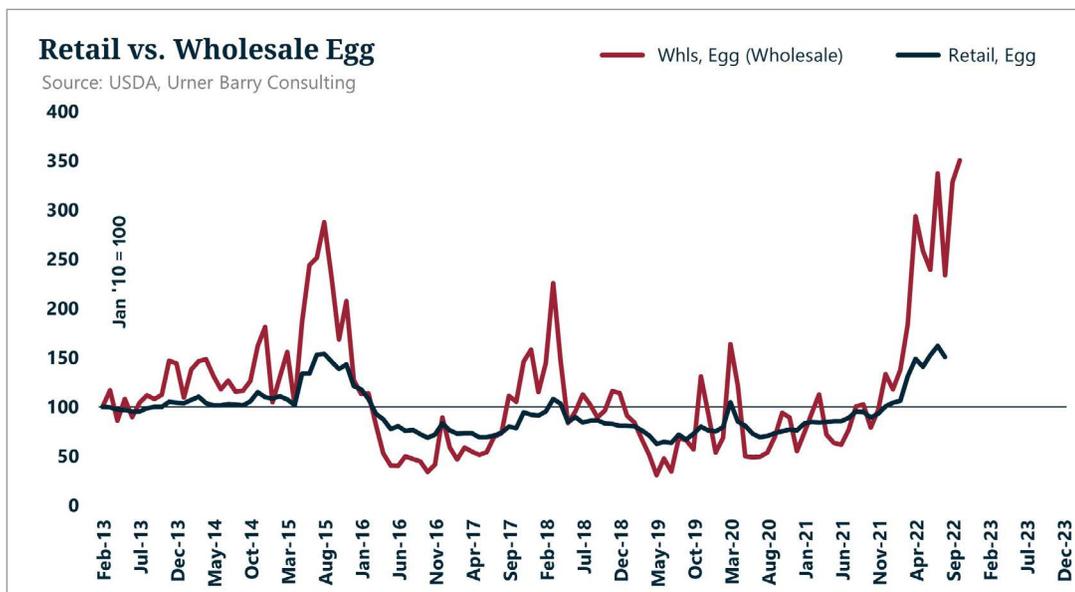
Layers Month-Over-Month, Percent Change



After HPAI in 2015 wholesale prices remained under pressure for much of 2016 and into the first half of 2017.

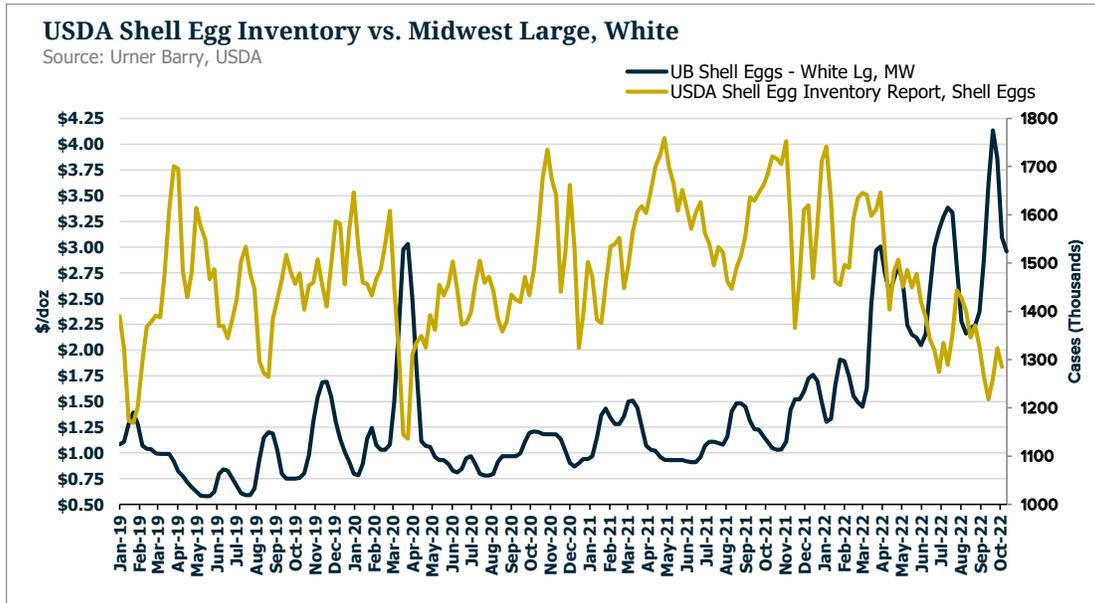
RETAIL VS. WHOLESALE

On average, for every 10% change in wholesale price, retail prices to the consumer move 3% in the same direction. Retail prices tend to react within 4-6 weeks of the changes in wholesale prices.



U.S. SHELL EGGS

The U.S. shell egg market soared to all-time highs in the last week of September, as strong demand continued to chip away at already-low inventory levels, which have been curtailed by this year's bird flu outbreak. As of November 1, 23 commercial egg-laying farms have tested positive for the virus, leading to the euthanization of 31.5 million hens. It appeared as though the situation was under control to some extent, as July and August passed by without incident. But then in early September, two more farms were impacted, leading to the loss of about 5 million birds.



At the same time, heavy seasonal flock rotation was underway and imports into Canada picked up, as preparations began for their Thanksgiving holiday. The combined effect drew down shell egg inventories to just 1.2 million cases—the lowest reported since the onset of the pandemic and nearly on par with those reported in the same week of 2015 during the last bird flu outbreak. The difference though is that there were 27 million fewer hens in the national flock at that time. Industry standards put egg consumption at about one layer per person and since the U.S. census has expanded by 13.6 million since 2015, population growth can account for about half that disparity. The other half, however, speaks to some of the additional factors at play—chief among them, strength in the retail sector.

Sources throughout the country have been reporting good to very good retail orders, some coming in as much as 25% above year-ago levels. While demand has been good in regional and national chains alike, retail clearance has been especially brisk among discount grocers and hypermarkets that have been offering eggs as a loss leader in a bid to retain or expand their customer base in this inflationary environment.

Commodity egg sales may also be seeing stronger movement due to shelf shortages on other SKUs, such as branded and organic eggs. With grocery prices rising at the fastest rate in 40 years, consumers are increasingly reaching for the cheapest egg available to them, which—contrary to conventional wisdom—is not always the conventional egg. Because specialty eggs are negotiated on a fixed contract, prices in recent weeks have often been less than those of commodities, which are subject to fluctuations in the marketplace.

Production in these categories, however, is a fraction of conventional outputs and cannot sustain the uptick in demand. USDA data shows that supplies of organic eggs, for instance, which represent only 5.5% of total production, have fallen 47.3% behind year-ago levels. That has depleted the pipeline for some specialties to the extent that many suppliers have had to short or cut orders altogether. With some SKUs now absent on the shelf, consumers in some cases have been forced to revert back to conventional eggs.

Market participants are also reporting continued strength in the foodservice sector, with no discernable shift in volumes as a result of inflation. The breakfast daypart

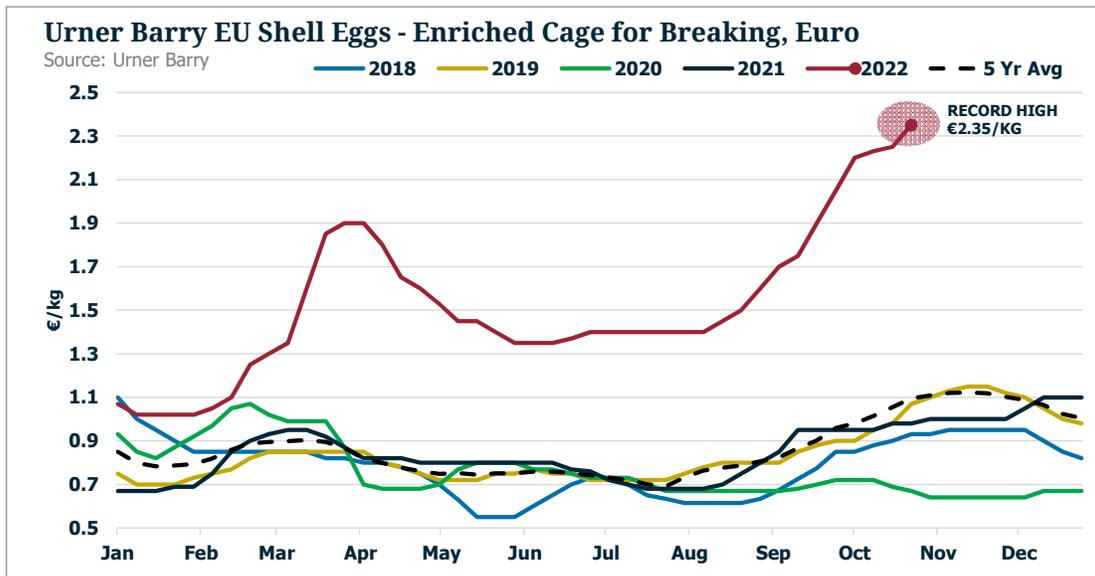
appears to be benefitting from its relative versus lunch and dinner, as well as a broader return to pre-pandemic morning routines.

The combination of strong demand and diminished stocks generated a nearly unprecedented level of spot market buying interest in September, with bids topping more than 100 loads on most days—often countered with only a handful of offers. That led to a six-week market rally that culminated in a record high of \$4.18/dozen for our benchmark Midwest large quotation in the last

days of September. It wasn't long before a correction set in, however, and by mid-October values dipped back below the \$3.00 mark. But just as the calendar turned to November, yet another layer farm tested positive for the bird flu—this one in Iowa, which leads the nation in egg production with roughly 55 million layers. That adds another layer of complexity and uncertainty just as baking season arrives, laying the foundation for continued volatility throughout the fourth quarter—and potentially beyond.

E.U. SHELL EGGS

For four consecutive weeks, the European shell-egg market has continued to climb to fresh record-high levels, as strong demand and inadequate supplies leaves processors with limited access to raw material. The price of caged eggs for breaking rose to €2.25/kg in the first week of October—eclipsing the previous record high of €2.15 that was set more than a decade ago—and has since tacked on an additional 8.9%. After a period of relative stability throughout May-August, prices have increased 66.7% over the past couple of months, thanks in large part to the reemergence of high-path avian influenza (HPAI)—more familiarly known as the bird flu.



While egg supplies are in tight-to-short balance throughout the EU, the situation is especially grim in those countries where the bird flu is propagating—most notably France, the Netherlands, and even Spain, which has historically been spared from such events because of its warmer climate. Although Europe has experienced HPAI before, the European Food Safety Authority says this epidemic season is the worst on record. Between March and June of this year, there have been 5,300 detections among poultry, captive and wild birds.

Not only does this variant appear to be highly virulent, but seemingly indestructible. Previous outbreaks would typically die off in the summer with the arrival of higher temperatures, but this strain is persisting year-round, which suggests the virus may have become endemic in wild bird populations. That, of course, means commercial farms are susceptible to increased risk as migratory birds begin their winter journey—as noted in recent weeks.

Twelve cases of HPAI were reported in the Netherlands throughout October, bringing the number of birds

impacted there to nearly 4 million. In France, the EU's largest egg-producing country, the agriculture ministry announced last week that the nationwide alert level on the bird flu has been raised from 'low' to 'moderate.' Containment measures, which had been relaxed in June amid a lull in detections, will once again be tightened to help stem the spread. To date, more than 19 million birds have been culled in France.

Already-low shell egg supplies are being further depleted by strong demand in the retail sector. While it's expected to see a seasonal bump in demand as summer holidays wind down and typical autumn schedules resume, suppliers have observed a larger-than-normal uptick this year—some as much as 15% above year-ago levels. Industry sources say egg sales are likely benefitting from inflationary pressure, which has prompted consumers to not only eat more of their meals at home but also turn to more affordable sources of protein.

Consumer prices in the European Union rose at an annual rate of 10% in September—the highest level recorded since the introduction of the euro in 1999. Of the nineteen nations in the eurozone, 10 are experiencing double-digit inflation rates. Skyrocketing energy prices are cited as the main culprit—and conditions there are not likely to improve any time soon. The International Energy Agency said Monday that Europe faces “unprecedented risks” to its natural gas supplies this winter after Russia cut off most of its shipments.

The increased cost of energy—along with other inputs—has created a great deal of fear and uncertainty throughout the industry, prompting many farmers to rethink production plans. With pullet and feed costs at very elevated levels—not to mention the ongoing threat of HPAI—many are electing not to fully repopulate their barns without a guarantee that they'll be able to recover those costs. Though it's a reasonable expectation by all

accounts, it's one that has often been unmet this year, as supermarkets have been slow to pass along higher costs to consumers. The end result has been steady-to-higher demand in a period where supplies have grown increasingly scarce.

Contacts in recent weeks have noted an increased prevalence of small eggs, however, which suggests younger flocks are starting to come into production—and that there may be some measure of relief on the horizon. That said, availability does not always translate to accessibility. Stringent veterinary guidelines and containment zones around farms impacted by the virus have made it difficult—if not impossible—for some processors to bring in eggs from other regions.

With HPAI now presenting a year-round threat, many in the industry believe inoculation is the way forward. France and the Netherlands are currently working on vaccines, but they are both still in the trial phase, so their efficacy is unknown. It's also unclear whether vaccinated birds may still be able to spread the disease to unvaccinated birds.

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Egg Market

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FORECAST webinar

Thursday, December 15, 2022
2:00pm EST

SIGN UP TODAY!

Factors affecting the sector • Current state of the HPAI situation
Forecasting demand for egg products