



An interview with  
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## Sourcing PAA for poultry processing in the wake of Hurricane Harvey

**Q:** You've expressed concern about Hurricane Harvey and the potential impact on poultry processors nationwide. What's the connection?

**TL:** Hurricane Harvey caused disruptions to the Gulf region's chemical industry — not just to inventories and distribution but also to manufacturing. This has led to a shortage of hydrogen peroxide, which is a key ingredient in peracetic acid, or PAA.

**Q:** What is PAA's role in processing?

**TL:** PAA is a food-grade antimicrobial and sanitizer that helps kill microorganisms or inhibit their growth. It has proved to be highly effective against naturally occurring foodborne pathogens such as *Salmonella*, *Campylobacter* and *Escherichia coli*. Because it breaks down into naturally occurring substances such as acetic acid, oxygen and water, PAA is also used in the processing of organic meats.

**Q:** How long is the hydrogen peroxide shortage expected to last?

**TL:** Considering the degree of destruction in the Gulf region — where much of the country's hydrogen peroxide is made — it's difficult to tell how long it will take for the chemical industry to get back to its normal level of production. But even when hydrogen peroxide production is fully restored, some poultry processors could be looking at prolonged shortages of PAA.

**Q:** Why the delay?

**TL:** At least half of the hydrogen peroxide produced in the US is consumed by the pulp and paper industry. Most of it goes into detergents and textiles or is used for water purification. Food-grade hydrogen peroxide accounts for less than 5% of the total market. As important as PAA is to the poultry industry, it stands to reason that PAA manufacturers will be on the bottom of the list for shipments of hydrogen peroxide.

**Q:** Couldn't the poultry industry get by on existing inventories of PAA?

**TL:** Not very easily. Like many organic compounds, PAA is volatile and degrades over time. Some PAA products can retain all or most of their original concentration for over 1 year.

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In a recent 3-month study, however, we learned that stability varies widely among different PAA products.

**Q: Can you share some numbers?**

**TL:** We went to processors and obtained real-world PAA samples, each estimated to be about 2 weeks old, and stored them under the same conditions. We then analyzed the concentration of each product after 80 days. We discovered that the half-life of each product — in other words, the number of days the product took to degrade to half of its original concentration — varied from 19 to 394 days.\* That’s a range of less than 3 weeks for one product to about 13 months for another.

**Q: That’s a big range.**

**TL:** It’s bigger than you think. When we took out the top product with a half-life of 394 days, the other four PAA products had an average half-life of less than 43 days. If you look at the lowest three products, the average half-life was just over 33 days. That means these products lost half of their concentration 9 to 10 times faster than the top product in the sampling. I’m concerned that with the lower volume of new PAA entering the pipeline, there’s a greater risk that poultry processors will receive older product that’s lost considerable potency.

**Q: PAA isn’t the only antimicrobial available to the poultry industry. Couldn’t processors simply use another compound?**

**TL:** Yes, but it’s not always easy to make the switch. Substituting an antimicrobial requires modifying your HACCP plan, which delays the transition. You also need to consider the risk of introducing new pathogens any time you change equipment.

**Q: Kroff has partnered with Zoetis to supply PAA to the poultry industry. How has your production been affected by Hurricane Harvey?**

**TL:** We source our hydrogen peroxide from three locations — one in Alabama; the others are in California and Ontario — so our production was not affected by the storm. Like everyone else, we want to see the chemical companies in the western Gulf region return to normal production as soon as possible. At the same time, we know food safety is the last place poultry companies want to take risks or shortcuts. We’re here to help, if needed.

For more information, contact your Zoetis food safety representative.

\* The 394 value was extrapolated from the data measured up to 80 days. All the other products reached their half-life in the testing period, so they are measured values.