



PHOTO: RITA BRHEL

# Meat Quality Issues Of Backyard Poultry

## Raising Birds For Slaughter Isn't An Easy Undertaking

BY RITA BRHEL  
P&D Correspondent

As backyard poultry flocks continue to rise in popularity, it's not just eggs being sold off the doorstep. Many small producers of chickens, turkeys, ducks and other types of poultry are also getting into the farmer-direct meat business.

But, while it can be lucrative, raising poultry to slaughter isn't easy. There is a learning curve going from often free-range laying hens to growing chicks usually inside specialized housing to prevent environmental stress and to encourage fast gains. Meat birds require substantially larger feed budgets, and there is the matter of how to process the bird when ready.

Not to mention that there are numerous meat quality issues to watch out for. "The same type of issues are seen, whether in commercial or backyard flocks," said Casey Owens-Hanning, poultry processing professor at the University of Arkansas in Fayetteville, Ark., during an August webinar hosted by the National Extension Initiative.

But, she mentioned, it does appear that meat quality issues are being seen more with small-scale producers lately because of a relative lack of understanding how certain common production practices among backyard flocks – such as allowing the bird to flap its wings when caught by the handler – can cause lower carcass quality.

"A lot of the problems seen in the industry have been seen in small flocks," agreed Jacob, backyard poultry professor at the University of Kentucky at Lexington, Ky. "Green muscle disease has been seen in large birds raised on range. IP can be a problem when chickens climb over each other when moving range houses. We have seen white striping in our research with broilers raised on pasture in movable pens."

This then translates into an unsatisfied customer. "It's not always seen until the customer cuts open the whole chicken carcass," Jacob said. "It's not a food-safety issue, but it is a turn-off for customers."

Reasons for downgrading of poultry

carcasses include: bruising, missing wing parts or other parts of the carcass, exposed flesh, broken or disjointed bones and discoloration. A downgraded carcass would, in the least, be worth less and, at most, would need to be disposed of without hope of sale.

While some of these reasons for downgrading, such as missing wing parts and exposed flesh, would occur during processing, many actually begin in the hours and days before slaughter.

Green muscle disease is one such condition that results in a green discoloration of the affected muscle, typically the breast tender. It is caused by stressful handling, especially wing flapping. Green muscle disease is essentially a severe bruise that causes the muscle to die. The injury generally happens within 7-8 days of processing.

Green muscle disease tends to happen more often in larger birds, though Owens-Hanning said she's seen many smaller bird carcasses with it, too.

IP, short for the inflammatory process, can also cause unsightly areas on the carcass, usually a yellow plaque under thickened, dark skin. IP occurs as the result of cellulitis, which is a skin infection when the bird is scratched and the injury is contaminated by bacteria, such as *E. coli* from the poultry litter on the floor of their housing unit. The injury generally happens within 2-3 days of processing.

Pale, soft and exudative is a meat classification that can happen if the bird is stressed prior to slaughter. This condition has been seen for many years in the pork industry and is related to stressful handling, whether short- or long-term, though it can also be induced with improper chilling during the slaughter process. It is essentially accelerated rigor mortis onset. The condition causes the meat to lose its ability to bind water, becomes soft and stringy, and the color of the raw meat appears pale.

Bruising and broken bones are two more conditions that result from stressful handling in the hours before slaughter. Bruising dates back to 96 hours, with darker-colored bruises happening within the last 24 hours, so it's easier to figure out when in the pre-slaughter timeline

that the rough handling occurred. Likewise with broken bones: a broken bone with hemorrhaging on a carcass indicates that the injury happened while the bird was alive, whereas a broken bone without bleeding happened during slaughtering.

"You want to catch birds by the legs, not only to reduce bruising or broken bones, but also from a humane animal perspective," Owens-Hanning said.

In addition to carcass downgrading reasons due to stressful handling, there are other conditions that happen as a result of living conditions that do not regulate the bird's rate of gain.

White striping causes muscle fiber degeneration so that the resulting meat appears to have stripes of white. The areas of muscle degeneration tend to have higher fat content and more connective tissue, which is both unsightly and less palatable for consumers. The affected meat also has a lower moisture-holding capacity, which makes it difficult to marinate in cooking. White striping is associated with very fast growth in meat birds, especially heavier broilers.

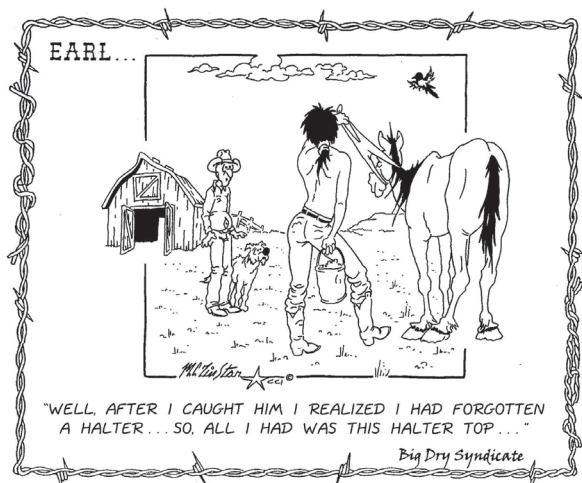
"Severity will tend to increase as the bird keeps growing," Owens-Hanning said.

Wooden breast is another growth-induced condition, which results in hard, rigid fillets that appear to be permanent contracted. Along with lower moisture-holding capacity, wooden breast has an unpleasant texture, often described as crunchy. As with white striping, wooden breast is muscle fiber degeneration resulting in more connective tissue to the affected muscle. There are also varying degrees of severity of wooden breast, more as the bird keep growing. Wooden breast is often seen in carcasses also afflicted with white striping.

Spaghetti meat is a new growth-related condition now being seen, which appears to be associated with wooden breast. It is due to muscle separation, and the muscle appears stringy.

White striping, wooden breast and spaghetti meat are global issues, in both commercial and backyard flocks, Owens said – though, according to Jacob, only with the hybrid breeding.

"No problem with the slower-growing breeds," Jacob added.



## State Mediation Program Recertified

PIERRE — The South Dakota Department of Agriculture's Agricultural Mediation Program has just received recertification from USDA's Farm Service Agency.

Mediation is an alternative method of resolving agricultural disputes. The department is authorized to mediate these types of disputes: debtor/creditor, federal lands, oil and gas and water drainage. Certain areas in the Mediation Program are partially funded by a USDA grant.

"The Agricultural Mediation Program has been around since the 1980s; although it has evolved over the years and added additional areas to mediate," says Terri LaBrie, finance and mediation administrator for the department. "Mediation is a great way to resolve disputes outside of the court system. It provides a neutral third party mediator to facilitate a resolution. It's confidential and the fees are minimal compared to litigation. It wouldn't be possible to provide this program without the federal grant."

Mediation is mandatory for any agricultural credit dispute over \$50,000. Mediation is voluntary for any credit dispute under \$50,000. Mediation for the program areas of water drainage, federal lands and oil/gas are all voluntary.

"It's important for our farmers and ranchers to know this program exists with harvest approaching and the continuation of low commodity prices," says LaBrie. "Financial counseling services are also available for clients in mediation. This service is free and is an important tool when looking at options."

Water Drainage Mediation has been added to the eligible areas the department can mediate. Any owner or administrator of property that has a surface or subsurface water drainage issue can request mediation. The process and benefits for all areas of mediation are very similar.

More information on the department's Agricultural Mediation Program and any of the financial programs the department has to offer can be found at <http://sdda.sd.gov/ag-development/> or by calling the Division of Ag Development at 605-773.5436.

## Ag CEO Ag Lenders Conferences Slated

BROOKINGS – SDSU Extension will host Ag CEO Ag Lenders Conferences in three South Dakota communities during the month of October.

"Ag lenders value up-to-date and timely market, financial, and production information. Having this knowledge helps them better assist clients regardless of the situation. Acquiring this knowledge takes time and effort, but the pay-off is having a solid working relationship with clients," said Jack Davis, SDSU Extension Crops Business Management Field Specialist.

Davis explained that like the chief executive officer of any corporation, an Ag CEO is a manager and visionary for their ag enterprise.

"SDSU Extension works with farmers and ranchers on their way to becoming an Ag CEO, by focusing on a "systems approach" to farm and ranch business planning," Davis said. "Ag lenders play an important role in the creation of successful Ag CEOs. SDSU Extension recognizes that ag lenders are important components of successful farm and ranch operations."

This one-day conferences will focus on South Dakota land values, cash rent trends, calf backgrounding costs, beef feedlot issues, crop costs/South Dakota farm's financial trends, grain market analysis and outlook, macroeconomic analysis and livestock market outlooks and analysis.

A discussion session will be included in each day's conference wherein program needs, as they relate to producers and lenders, will be discussed.

### DATES & LOCATIONS

\* Rapid City, Oct. 15, at the SDSU West River Ag Center (1905 Plaza Boulevard)

\* Aberdeen, Oct. 20, at the SDSU Extension Regional Center (13 Second Ave. SE)

\* Sioux Falls, Oct. 22, at the SDSU Extension Regional Center (2001 E. Eighth St.)

For more information, contact Davis at [Jack.davis@sdsdstate.edu](mailto:Jack.davis@sdsdstate.edu) or 605-995-7378. To register for the event, visit <http://iGrow.org/store/>.

## Remove Hay Bales From Right Of Way

PIERRE – The South Dakota Department of Transportation reminds land owners hay remaining in highway ditches after Oct. 1 is deemed illegal.

After Oct. 1, the department will remove or authorize the removal of any illegal hay bales remaining in the public right of way.

Any person wishing to claim ownership of illegal bales must obtain a permit from the South Dakota Department of Transportation. Those permits are issued on a first-come first-served basis and allow permit holders to take ownership of any illegal hay bale.

Permits are available at Department of Transportation area offices in the following communities: Aberdeen, Belle Fourche, Custer, Huron, Mitchell, Mobridge, Pierre, Rapid City, Sioux Falls, Watertown, Winner and Yankton. Phone numbers can be found on the website at <http://www.sddot.com/dot/region/Default.aspx>.

For more information, contact the Division of Operations at 605-773-3571.

## Commentary

# Will It Be Another Indian Summer?

BY RITA BRHEL  
P&D Correspondent

Fall is in the air. I know that summer doesn't officially end until Sept. 23, and even today the mercury is sitting in the mid-90s, but still, it does look like fall already.

The corn, while there is still some green among the stalks, is steadily turning a dry golden-yellow. The irrigation pivots have been turned off – not that they were turned on much this year, with all the rain we had in our local area.

Soybean harvest has begun. I went to a music team meeting last night at our church, and several members were gone, driving the combines in their fields. When I catch glimpses of soybean fields out of my car window, they are all dried up and brown, awaiting the inevitable.

One of our pastures is a black walnut grove. We bought the property with the grove; the idea is that, in 100 years, the trees will be tall and big enough to be sold for high-dollar lumber. For us, mostly the walnut grove blocks the view of town, a buffer between our farm and the urban. While we live on the edge of town, we like to pretend that we live in the country.

Walnut trees are great at attracting squirrels and other wildlife. The sheep and goats don't mind grazing around them, and they do make for nice shade trees in the summer, helping to keep our house and yard cool. The problem with walnut



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trees – besides dropping their nuts, which we only mind if we happen to get hit in the head while walking beneath them – is that they are one of the last trees to leaf out in the spring and definitely the first trees to drop their leaves in the late summer. Some years, like this year, I think perhaps the walnut leaves started falling in mid-summer even.

When probably 75 percent of a property's trees are black walnuts, this early leaf dropping gives the illusion of a premature autumn. Some of our hackberry trees have also been dropping a lot of leaves lately.

No matter how much I water them, my hanging baskets of summer annual flowers are drying up and dying off. But the sedum – a fall flower – is very much in bloom, attracting all of the pollinators left for the season, which includes an occasional butterfly but a whole lot of bees. It's easy to attract bees in the fall as they seek out any nectar source before they go dormant for the winter. Try setting out an open can of soda pop on your porch as an experiment to see how many bees will come to get a sip!

When I was a kid, I showed lambs at Ak-Sar-Ben, an annual multi-state 4-H livestock exposition held in conjunction with the River City Roundup rodeo. It was held during the third weekend of September and the weather always seemed to be that warm sun mixed with a biting north wind, with a lot of bees flying around looking for open soda pop cans.

Now, 20 years later, it seems that most autumns end up being an Indian summer – a slow cool-down from hot and humid summer temperatures to warm, dry conditions. And then the end of October or first of November, though sometimes later into December, 60- and 70-degree days will last until a last cold snap would deliver us into winter. I can't remember a fall that didn't turn out to be an Indian summer for many years. I wonder, what it will do this year?

I hear the warmer falls, and winters, are a product of global warming. Unfortunately, the warmer temperatures tend to come with much less precipitation than when I was a kid. I remember winters when the ground was nearly always covered with drifts of snow, and school being closed for days as the result of blizzards that would dump a foot or more of snow. For the last many years, a snowstorm has been defined as 3-5 inches of snow.

I understand the inconvenience of snowstorms and blizzards, and the convenience of a dry fall for harvest, but I wonder, how much the soil

in our fields and pastures are missing the moisture from a time when there were more distinct weather patterns for the seasons? Still, I do love an Indian summer.



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