AgSpeak™

Vol. 5, No. 2

Engineering New Products to Make Your Life Easier

WATERING • FEEDING • CONTROLS • VENTILATION

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VAL-CO

We begin 2021 with faith and new hope for better times ahead. The challenges of 2020 may not be fully behind us, but we have all adapted and found that we can succeed by overcoming adversity.

As growers, as dealers, as an equipment manufacturer, we must all measure ourselves against competition to identify opportunities to differentiate ourselves. Success will come to those who have better people, better products, and provide a better customer experience.

VAL-CO is committed to having the most knowledgeable people and that starts with our sales team. A background in live production provides deep industry insight for each of our Territory Sales Managers. In this issue of AgSpeak, Trey Martin shares information on how *Salmonella* is controlled in the turkey industry.

Our product development continued at full speed during 2020 and now we are introducing the Ventra XT™ whole house controller and V-Fan™ product lines with industry-leading features that set us apart from the competition. You can also read about the differentiating features of our Heat-Rite™ tube heaters in this edition.

Phil Risser
President & CEO
Valco Industries, Inc.

How Teamwork Controls *Salmonella*

by Trey Martin

When it comes to food safety, everyone has a role to play. Farmers and integrators often work closely together to ensure that the birds live a healthy life and are processed in sanitary conditions. The entire food chain is designed to reduce *Salmonella* contamination, but let's face it, the fact is that live or uncooked poultry is going to have some traces of *Salmonella* present. Growers and integrators have a responsibility to take precautions that ensure the level of contamination is reduced - and ultimately eliminated - prior to consumption, and consumers have a responsibility to protect their own health through proper food handling.

Let's look at how *Salmonella* is managed in turkeys.

A *Salmonella*-free process starts long before the turkeys are hatched and arrive at their home for the next several weeks. Between flocks, growers should diligently and meticulously clean the farm. How? Wash and scrub the barn to ensure that all organic matter is removed. Flush and sanitize water lines to remove biofilm build up. Empty feed pans of leftover feed, then wash and sanitize them. Blow dust particles from fans, heaters, walls, and ceilings, as bacteria thrive in these areas. Remove and replace litter with fresh shavings,

or use a litter treatment such as windrowing.

After the sanitation process is complete, the turkey integrators will bring in a team to visually inspect the process and take swabs from areas all over the house and test them to ensure these areas are within acceptable ranges. Once the farm passes inspection, the turkeys arrive where they are cared for and given good clean feed, water, and air to breathe.

By completing this process, the *Salmonella* levels are greatly reduced prior to the turkeys ever arriving at the farm, significantly reducing their exposure. To further decrease a turkey poult's susceptibility, integrators issue *Salmonella* vaccinations. There are two options for vaccination.

As noted in this article, the first option is to vaccinate the breeder flocks with Inactivated Vaccines, or "killed vaccines". This allows immunity to pass from the hen/mother turkey to the poult through a process known as "vertical transmission". The second option is to administer a Live Vaccine to the poults on the day they hatch. This can help fight off any *Salmonella* they may come in contact with while their immune system is developing.

Finally, integrators monitor *Salmonella* levels within the processing plant once the turkeys arrive for slaughter. Internal teams, along with USDA, monitor *Salmonella* at multiple points within the process to ensure levels are meeting the scientific standards. Also, similar to the measures taken by farmers, there are verified sanitation steps that take place daily to ensure the final product is not introduced to *Salmonella* during these final steps prior to being shipped to the grocery stores, restaurants, and other marketing platforms.

Most importantly, to ensure there are no food-borne illnesses stemming from *Salmonella* exposure, is for the consumer to prepare their meal in a manner that meets the scientific guidelines. For turkey (poultry), the meat should have an internal temperature of at least 165° F as *Salmonella* cannot survive at this temperature.

Consumer safety is a top priority throughout the food chain. Each step is dependent on the others to ensure high quality products. Consumers can always rest assured that a properly handled and cooked meal is a safe one.

Pigs

10 Interesting Facts About Pigs

1. Newborn piglets learn to run to their mother's voices.
2. Adult pigs can run at speeds up to 11 Miles Per Hour. Not that they would… but they could! Wild pigs can run 30 mph!
3. The highest density of tactile receptors is in the snout, making it incredibly muscular and incredibly sensitive. A pig's sense of smell is over 2000 times stronger than humans'!
4. Pigs are the oldest domesticated animal, domesticated over 6000 years ago. The Chinese were the first to raise them for food, and are still the top pig producers and consumers today!
5. Pigs exist on every continent except Antarctica.
6. Commercial pig production dates back to the 1800s. Farmers used the new Erie Canal to ship pigs back to the East Coast. Pigs were often called "Mortgage Lifters" because the profits from hog production was enough for farmers to pay for their new homesteads in the Midwest.
7. Big Bill, a Poland-China, set the record for the World's Largest Pig in 1933. He was 5 feet tall, 9 feet long, and weighed a whopping 2,552 pounds. (Big Bill lived in Tennessee.)
8. The largest litter of piglets ever born included 37 piglets, out of which 36 were born alive, and 33 survived.
9. Bacon is one of the world's oldest meats. Dating back to 1500 B.C., bacon has been a favorite for millennia. The phrase "bring home the bacon" originated during the 12th Century when a church in England offered a side of bacon to any man who could swear before the church that he had not had a fight with his wife for a year. Any man that could bring home the bacon was then highly respected among the community. Today bacon is big business, with over 2 billion pounds of bacon being produced annually in the United States.
10. Pigs are almost as loud as jet engines. Pigs can scream up to 130 decibels! With jet engines coming in at 150 decibels compared to diesel engines at 80 decibels, you can imagine how noisy a group of pigs can be if they decide to cause a commotion. It all depends on distance from the source, of course.

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- May be eligible for Energy Rebates in certain areas

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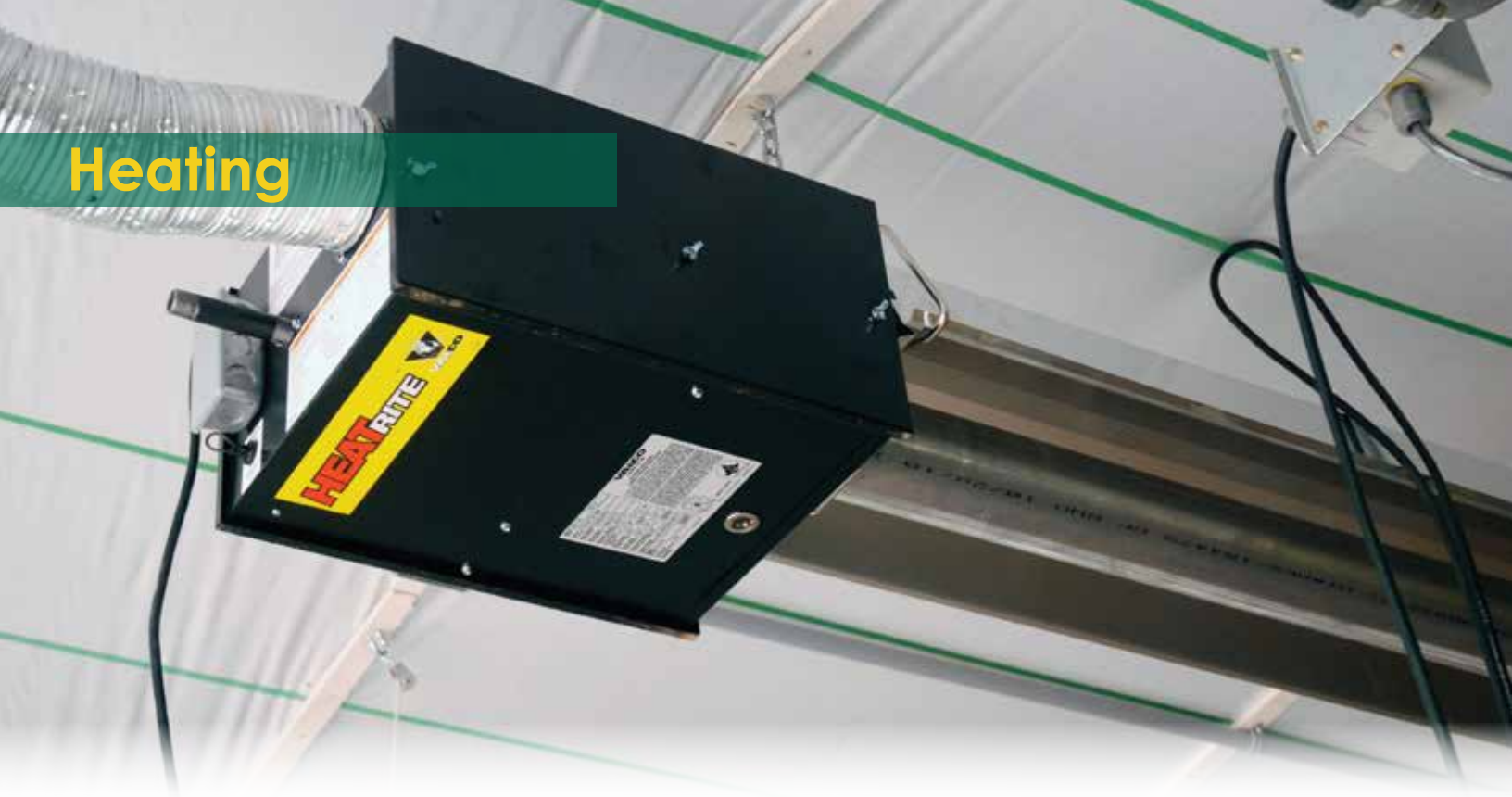
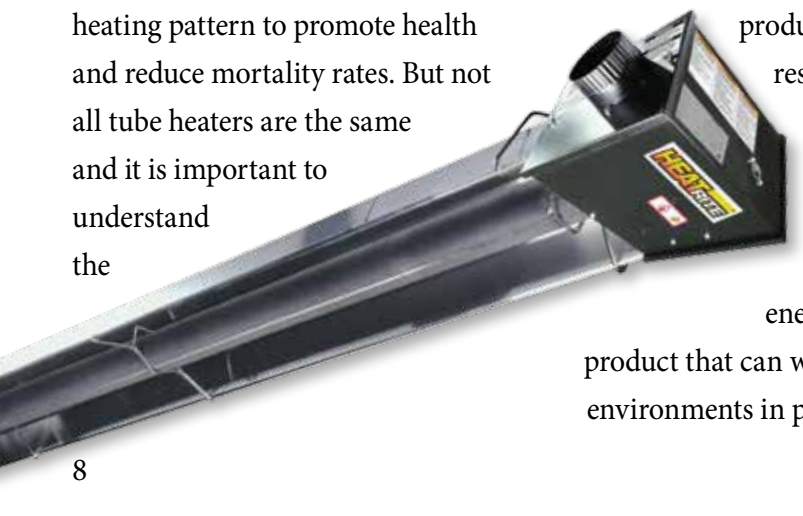


The Heat-Rite™ Advantage: What Separates VAL-CO Heat-Rite Tube Heaters from the Rest

Special thanks to Roberts Gordon

In today's market there are numerous products available to heat a barn. Experienced farmers know some products are better than others and that the most effective and efficient way to heat a barn is with tube heaters.

Introduced to the agriculture market over 25 years ago, tube heaters have been proven to be a reliable heating method that provides the best heating pattern to promote health and reduce mortality rates. But not all tube heaters are the same and it is important to understand the differentiating factors that separate some tube heating manufacturers from the rest.



As energy costs continue to climb, farmers must find ways to stay profitable without sacrificing productivity. Of course, it is not good practice to simply turn the temperature down. We know lower temperatures reduce productivity and can result in poor feed conversion and lower body weights. Instead, we need an energy efficient product that can withstand the harsh environments in poultry and hog houses while maintaining temperature set points.

The ideal approach when choosing a tube heater is to find one that combines high-quality materials with an innovative design to provide an energy efficient, long-lasting, industrial-grade heater. This article will walk through important factors to consider before you select which tube heater is best for you.

Warranty:

The warranty for most tube heaters is listed in the installation manual. It is important to read the fine print - some manufacturers will give different warranties for different parts of the heater, such as a 5-year warranty

on the tubes, but only a 12-month warranty on the burner components. The tubing on a system typically will far outlast any electrical component inside of the burner. A 12-month warranty on components will only get you through a single heating season, and unfortunately, is somewhat of a common warranty. The best warranty in the market is a 3-year tip to tip warranty that is offered by only a few manufacturers. The harsh environment of a chick or hog house wreaks havoc on equipment. Factoring the warranty into your decision will provide piece of mind.

Heater Design:

The burner housing protects all the internal components required to operate the heater. It makes perfect sense to have a heater with a durable sealed enclosure that will protect the components inside of it to keep the heater running. The finish or material should help fight corrosion. The best finish offered today is a powder coat finish. Other common finishes seen around the industry include stainless steel, galvanized, or a paint spray finish, none of which are ideal for the harsh corrosive environment they are heating. A powder coat finish keeps moisture and other corrosive substances off the raw metal to increase the longevity. Stainless steel, however, is durable and will perform almost as well as a powder coat finish.

It is equally important that the burner features seals on all of the access doors. Seals are designed to keep dirt, dust, and insects out of the burner.

Another key feature that is only offered by select manufacturers is an internal partition that separates the combustion air from the electrical compartment. This key feature offers additional protection to help keep dust and other debris off of electrical components keeping them clean.

It is inevitable that the electrical components inside of your burner will fail at some point. Keeping them as clean as possible will prevent untimely break downs and increase the longevity the heater.

Radiant Tubing:

Two key factors to consider when comparing different types of tubing is durability, and the emissivity rating. Emissivity is simply the measurement of a materials ability to emit radiant heat. The higher the emissivity, the more radiant heat that material will emit which of course boosts efficiency and performance of the heater. Most radiant tubes are made of heat-treated aluminized steel, hot rolled steel, or stainless steel. The most cost-effective option is hot rolled steel. HRS does an excellent job at emitting radiant heat with an emissivity rating of .80 (out of a perfect 1.0 rating). However, it lacks corrosion resistance and unfortunately does not stand up to the test of time inside of a chicken or hog house. HT aluminized steel is a highly corrosive resistant material that also has a high emissivity rating of .80. Stainless steel of course is excellent at resisting corrosion. However, SS is a very poor emitter of radiant energy with an emissivity rating of only .44. As a result the majority the heat produced is not transferred into radiant heat and ends up getting blown right out the exhaust. This severely affects the performance of the heater and ends up costing you more money to heat the space.

Another important feature is focused around safety. There are a few manufacturers that provide an ALUMITHERM® burner tube. The burner tube is the first tube on a heater that bolts to the burner. ALUMITHERM® consists of a mixture of aluminized steel and titanium alloy. This increases the strength and longevity of the tube. And since the majority of a tube heater's heat is in the first section of tube, it is important to ensure safe and effective operation.

Reflectors:

The purpose of the reflector is to redirect the radiant heat downwards toward the floor. The type of material used, the shape/design, and the position of the reflector relevant to the radiant tube are all key factors to consider.

There are primarily 3 types of reflector materials, mill-finished aluminum, polished aluminum, and stainless steel. To understand which material is better at deflecting radiant heat you must know the reflectivity rating of them. Reflectivity is a measurement of a materials ability to reflect radiant

heat. Just like the tubing emissivity, the higher the number the more radiant heat that material will deflect. The reflectivity rating of a polished aluminum reflector vs. a mill finish aluminum reflector is actually the same at .91 (out of perfect 1.0). There is some confusion in the market that a polished reflector is better. But that is not the case because infrared heat is not visible light, therefore a polished reflector gives no advantage over mill finished. This would be very different if infrared was visible. Stainless steel reflectors although very durable and rigid, unfortunately provides a poor reflectivity rating or only (.66). As a result, stainless steel reflectors simply do not deflect as much radiant heat down to the floor.

Stainless steel does have an edge on aluminum when it comes to corrosion resistance and it is a more rigid material. But aluminum is also highly corrosion resistant and has been proven to withstand the harsh environment of a chicken or hog house.

The next consideration would be the position of the tube under the reflector. Some tube heaters have reflectors that do not fully curve around the sides of the tube. This means that the tube sits below the plane (bottom edge of the reflector) resulting in a loss of convective heat and making the heater less effective at producing useable radiant heat (a reduction in thermal efficiency). The convective heat loss will also create a hotter temperature above the heater potentially resulting in damage to the ceiling above the heater if the proper clearance to combustibles is not maintained.

The most efficient design positions the tube above the plane of the reflector thus drastically reducing convective heat loss and converting more radiant energy into useable heat. This will also reduce the clearances to combustibles above the heater.

Finally, the shape and design of the reflector. Ideally the reflector should have a parabolic shape with a "V" shaped indent just above the center of the tube. This shape is ideal for deflecting the maximum amount of radiant energy emitted from the tube back down towards the floor where the heat is needed. Other reflector designs deflect a large amount of radiant energy back into the tube and allow convective heat to escape from the sides of the reflector creating energy loss and a hotter tube that not only reduces the lifespan, but also increases the exhaust temperature, adding to the energy loss.

Look for a reflector that has 9 - 12 gradual bends that mimic a curved parabolic shape. The more bends a reflector has the better it is at maximizing the amount of radiant energy emitted by the tube back down to the floor level. The width of the high efficiency reflector, the amount of bends, and the position of the tube all work towards providing the maximum amount of radiant heat to put heat where it is needed the most, the floor!

Safety!

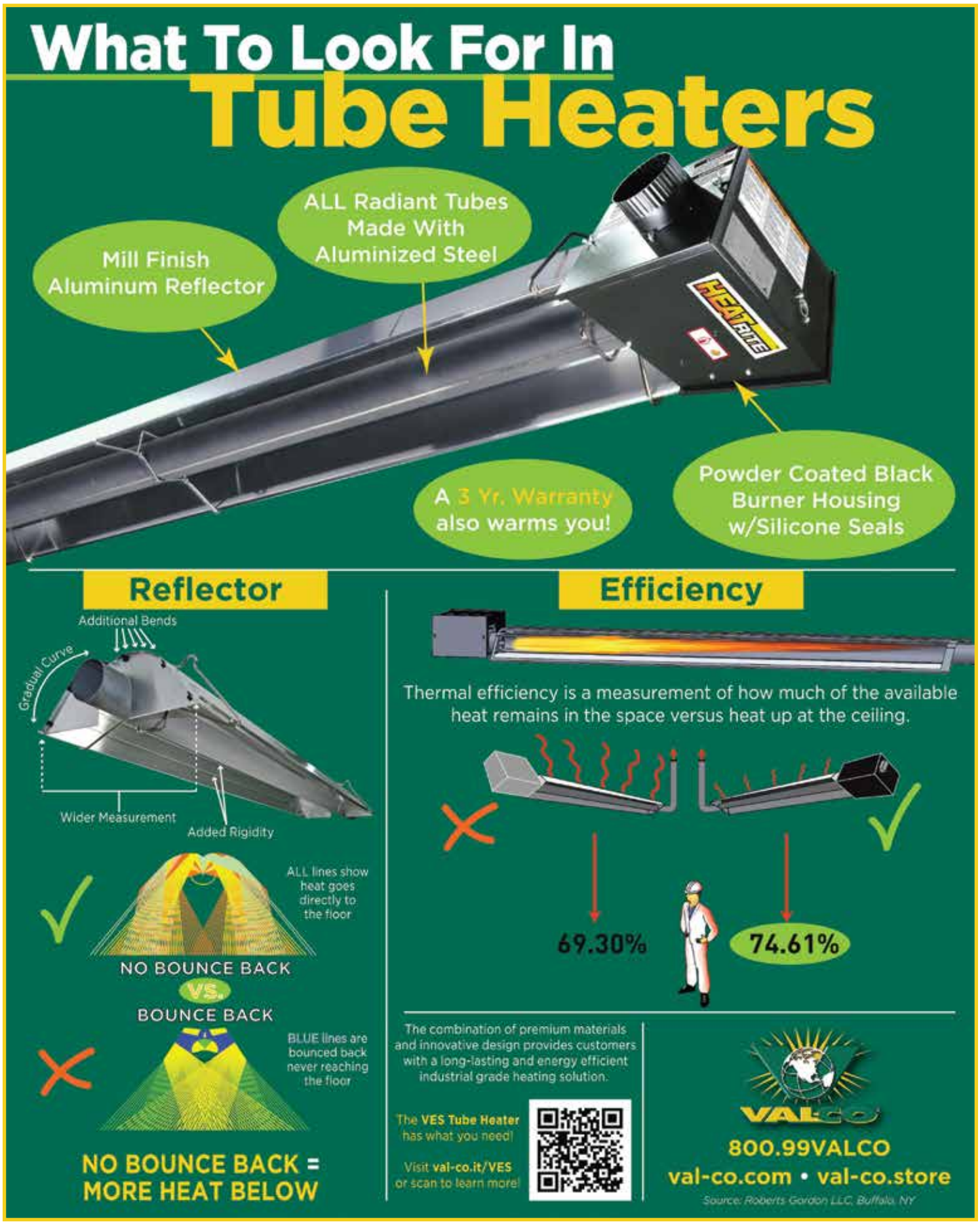
Safety is the most important factor to consider. Most manufactures do an excellent job at staying up with the latest standards. But some manufacturers unfortunately will take short cuts. To be in full compliance with the standards it is required to have a third party (CSA) visit the manufacturer's facility to witness testing. The strictest standard for tube heaters is ANSI Z83.20. The ANSI standard requires more safety regulations than any other tube heater standard in North America. The specific standard that the heater is approved to will be listed in the equipment specifications. It is highly recommended to ensure that your tube heater is approved by CSA to be in compliance with the ANSI Z83.20 standard and also is suitable for brooder heaters (CSA 2.20).

Ask your sales person if the equipment you are purchasing was factory tested before it left the factory. This is an important step to ensure safe and proper operation before the heater is installed.

Knowledge and Support:

Having the right size tube heaters in the right place in your barn is key in creating the ideal environment. Work with a team who knows how tube heaters are applied and how they work. If you do have a problem, it is nice to know that the company you purchased the heating equipment from has your back and will support the product long-term.

And now... a helpful infographic on choosing Tube Heaters



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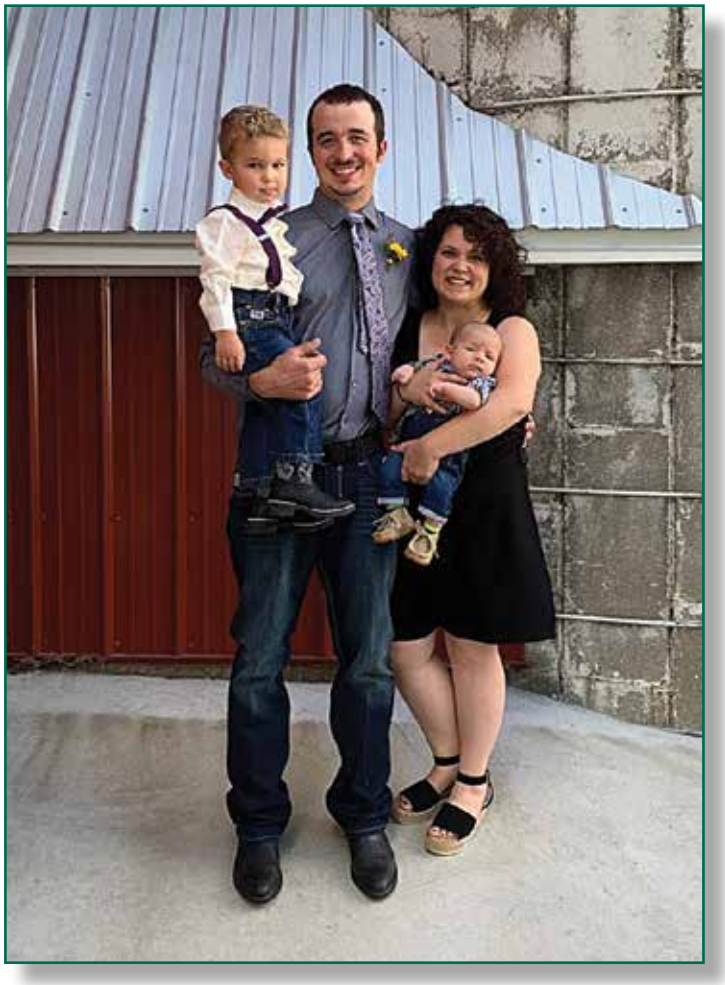
Grower Spotlight

King's Poultry Farm - Reuben King

Reuben King, a 29-year old poultry farmer and business owner, has made a name for himself in Bradford, OH.

For 22 years, Reuben has helped out the family slaughtering chickens. His parents, William and Marilyn King, started raising and processing chickens by hand in the barnyard in 1983. They purchased an automatic picker and fixed up the old milk house in the barn to process their own birds. To keep their five sons busy during the summers, they built a small plant and started doing custom poultry processing – slaughtering chickens for neighbors in the community, often small-batch pasture raised flocks of about five to ten birds.

Once old enough, Reuben and his brother, Levi, took over growing the contract farming side of the business. As part of that initiative, Reuben helped his brother begin raising chickens. In 2014, Levi had bought his first barn, fixed it up, then tragically lost it in a fire three years later. It has since been rebuilt, as well as two more that Reuben just completed this year.



Reuben has used a full Val package in his barns including Fuze Feeders, Val Watering as well as a VAL-CO Ventilation Package. He praises the ease of use and return on investment. "Performance has been excellent. Normally, we raise a 5.5 pound bird in 45 days. This past flock [in the new houses] we raised a 6.5 pound bird in 45 days."

His success can't be fully attributed to the equipment. He walks through his house at least twice per day to check on the health and comfort of the birds and depends heavily on his controller to keep him aware of any environmental changes in the barns. And if anything comes up with the equipment? "Tech support is just a phone call away, and I'm lucky to be so close to your office, because they don't think twice about stopping by if necessary."

The family business now focuses on the full poultry production chain – from growing, to slaughter, to full retail. There are more and more contract growers joining the company for retail sales and wholesale sales supplied to both the on-site store – King's Poultry Farm Country Market – and local stores in the area.

Reuben faces some unique challenges in his niche market. Given that his processing facility specializes in small-batch, pasture-raised chicken, the plant capacity fluctuates significantly throughout the year. 60—70% of their business is custom, brought in from nearby growers.

And if he could offer his advice to fellow farmers? "Watch your install teams. They'll try to cut corners, but you're spending so much money already, you want the best quality work you can get."

In The Spotlight

Employees

Name:
Trey Martin

Position:
Territory Sales Rep

Where were you born? Selma, AL

Hobbies: Golf, hunting, spending time outdoors, spending time with my wife and daughter.

Favorite family tradition: Going to Gatlinburg for summer vacation

First Job: High school - Plant Nursery General Laborer / After College - Broiler Technician for Tyson Foods

Biggest pet peeve: Everything needs to be placed in "it's spot"

Describe yourself in 5 words:
Honest, Integrity, Christian, Good-Listener, Hard-worker

If you were an animal, what would you be?
A tiger of course (Auburn)

If you could share a meal with anyone, living or dead, who would it be and why?
My wife's late mother (we call her Mama Vicki). To be able to learn more about her and to eat her fried chicken, I hear it was amazing.

What changes have you seen in your years in the industry?
I would say efficiency and modifications to processes to meet the new end-user standards [i.e. No Antibiotics Ever (NAE)]

What technology do you see coming in the industry?
I think the COVID pandemic has opened the eyes of a mostly hands-on industry to a more virtual platform (i.e. virtual training sessions) and it will not surprise me if this continues

What excites you about your work and makes it easy for you to come to everyday?
Being able to work with great people within our company and industry.

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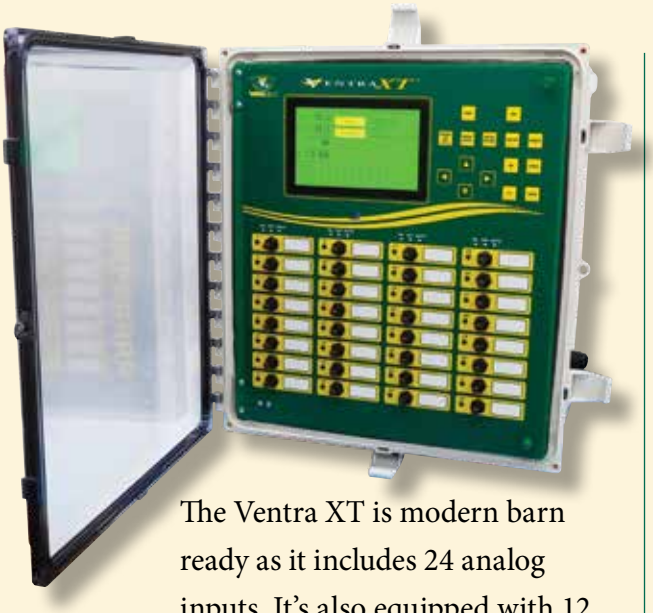
Products

Ventra XT™ Controller



VAL-CO® is proud to introduce the latest state-of-the-art **Ventra XT** controller. Incorporating swipe screen navigation on a large 7" touchscreen, the Ventra XT employs an intuitive user interface that is very easy to learn. Current Ventra PRO users will see there is little to no learning curve when working with the Ventra XT.

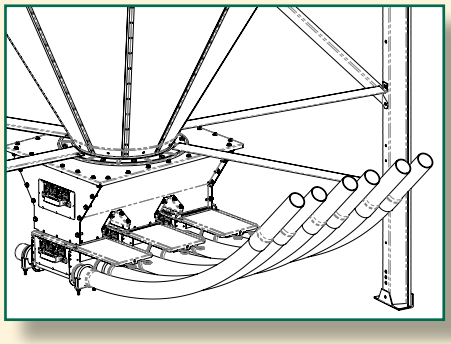
The Ventra XT is modern barn ready as it includes 24 analog inputs. It's also equipped with 12 analog outputs and logic capable of controlling variable heaters, VFD fans, and variable lights to help you obtain greater efficiency. The Ventra XT also has Humidity Control with optional Heat Purge for greater indoor air quality. Check out the innovative Ventra XT and take control!

Triple Upper Boot

VAL-CO has released a new **Triple Upper Boot** designed to provide more feed to more flexible auger lines from one source. When used in conjunction with the double lower boot, up to six auger lines can run from a single feed bin! The 14-gauge galvanized steel boot bolts directly to 6ft, 7ft, and 9ft top collars. On 12ft bins, collars must be drilled.

For use with Auger Models 720, 725, 730, & 735.

Feed your whole house faster with the VAL-CO Triple Boot!



V-Fan™ - 36" Models

VAL-CO® had already stepped up to help achieve the ideal environment with the introduction of the versatile, highly efficient, variable speed **V-Fan**. Now, 36" models are available in **Fiberglass, Galvanized** or **Z-Material.**

The V-Fan motor is not only VFD-driven, but it's also a PMAC motor, yielding greater efficiency than induction motors. A 36" Fiberglass V-Fan delivers over 14,000 CFM @ 0.05" WC at full speed and provides up to 43.0 CFM/Watt @ 0.05" WC!

The V-Fan is direct drive, meaning there are no belts to maintain or bearings to grease. The VFD is located directly on the fan and pre-tuned at the factory, so no adjustments are needed. It is IP66 rated to withstand the harsh environments of agricultural production houses. *BONUS: The V-Fan may be eligible for Energy Rebates in certain areas!*

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