MilloGram

WENGER® FEEDS

OUR MISSION: Providing Quality Feed for Quality Food.

Culture of Service

Geoff Finch, President and CEO, The Wenger Group

Snow. Ice. Frozen equipment. Slippery roads. Holiday shutdowns by suppliers. Increased traffic. These winter months are the hardest time of the year to serve our customers. There are ample opportunities to pull our hair out and wonder how in the world we can ever get everything done.

But through the challenging conditions, I virtually always see our people pull together to get the job done. I know I am biased, but I believe our team members do a great job doing whatever is needed to ensure that the animals on our customers' farms remain well fed. I admire and appreciate their tenacity and commitment, especially in tough times.

Also helping keep service levels up are the many investments we have made in increasing our milling capacity in recent years. Larger mixers and pellet mills in particular have helped us continue to serve our customers as their operations grow.

I believe this dedicated service mentality is much more common in our great agricultural industry than in other sectors. Knowing that we play a vital part in helping produce the safest, most abundant, most affordable food supply anywhere in the world drives us collectively to higher levels of performance.

Broadening our scope, we can also think of service to people. Robert Greenleaf coined the phrase "servant leadership" back in 1970, and it holds true today—there is much power to be unleashed in people when we encourage, support and empower them to best utilize their abilities. Achieving true servant leadership is not easy, as it requires a significant focus away from our own needs, to prioritizing the performance and fulfillment of others. Servant leadership is not always easy, but it is something to which we aspire here at The Wenger Group.

Speaking of service, I want to recognize Jim Adams for all he has done for Wenger's over the years (Barry has also written an article recognizing Jim on the next page). Jim recently announced that he will be retiring in early 2018. For over 37 years, Jim has served our company tirelessly, assuming many roles for us, including CEO. In addition, from a broader perspective, Jim has been a leader and ambassador for our industry through decades of progress. His leadership has been very much appreciated, and we have all benefitted from his service. Thank you very much, Jim, and we wish you the best in retirement!!

In this Issue

Jim Adams Retires after 37 Years of Service

F. Barry Shaw, Executive Chairman of the Board

Jim Adams will be retiring sometime after the first of the year. How does one explain in a few paragraphs what Jim has meant to me, the Wenger organization, and our industry in a few short paragraphs? Jim was hired at Wenger's in 1980 as a formulator for poultry and swine feeds. He developed a feed and bird health quality assurance laboratory that same year. Since then, he served as President (2004 until 2014) & CEO (2007 until 2016) of Wenger's Feed Mill, Inc. In that capacity,

he led the Manufacturing and Transportation Departments as well as the Sales and Marketing group, and Nutrition Services and Quality Departments. Jim has been key to the growth and success The Wenger Group enjoys today.

Jim's exemplary leadership is greatly valued by many—both within the company and externally with agricultural entities and the community. Jim is a true servant leader. Servant leadership goes back at least 2,000 years, but Robert K. Greenleaf initiated the modern servant leadership movement in 1970, with the publication of his essay, "The Servant as Leader." Wikipedia defines it this way. "The servant-leader shares power, puts the needs of others first, and helps people develop and perform as highly as possible."

Jim has been both mentor and friend to many at Wenger's throughout his tenure. Anyone having a question or looking for advice never hesitated to knock on Jim's door. They came away with not only a resolution but also with additional insight and knowledge of the situation. Jim makes his job look easy, but it is a result of his perfection, attention to detail, and expertise that make it appear that way. Behind that "ease" is an extremely diligent and dedicated person putting forth whatever is needed to perform his duties and ensuring those who report to him are doing the same.

Jim's passion for and dedication to agriculture is evident by his service on many agricultural boards and committees throughout his career. He is currently serving on Team Pennsylvania Agriculture Advisory Committee and Grow Pennsylvania

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Agriculture Advisory Group (Mid-Atlantic Farm Credit). He most recently joined the Board of the US Farmers & Ranchers Alliance. He worked with the poultry industry through three Avian Influenza outbreaks and helped develop the Pennsylvania Egg Quality Assurance Program. He was a member of the Governor's Agriculture Transition Team following the election of Tom Corbett as Governor in 2010. In receiving the George C. Delp Award by The Lancaster Chamber of Commerce and Industry in November, the exclamation point was added to a tremendous career!

He concludes his tenure as Vice Chairman of the Board of The Wenger Group by overseeing all aspects of the company, including the corporate board committees, and directing strategic planning, and Interim COO of Wenger Feeds, LLC.

Jim's presence and expertise will be sincerely missed. On behalf of the entire Wenger Group, I want to say *thank you, Jim*, for a job well done, and wish you the very best in your retirement.

Technology Streamlines VFD Process

The agriculture industry is rapidly changing and with it brings new customer demands, regulation, enhanced procedures, and the need for better record keeping. However, change is also an opportunity to make technological improvements that can enhance communication throughout the company.

Laserfiche is being used throughout the Wenger Feeds organization to speed the transfer of documents, improve business intelligence, and reduce paper usage.

Document Management Coordinator Michelle Lombardo-Smith recently completed a project that greatly improved record keeping and the customer experience for Dutchland Farms, Wenger Feeds' sister division that offers egg marketing and production, pullet growing, and flock services. It has also helped Wenger Feeds customers that contract the flock services of Dutchland Farms and have oversight from Dr. Eric Willinghan or Dr. Bert Payne, the company's contracted veterinarians.

The opportunity for the project began in 2015 with publication of the Food and Drug Administration (FDA) Veterinary Feed Directive (VFD) regulation. The VFD regulation was revised to facilitate its expanded use under FDA's antimicrobial resistance policies. These policies apply to animal agriculture drugs, which are also important in human medicine.

A VFD is a written statement issued by a licensed veterinarian that allows the use of a particular drug or combination of drugs in or on an animal feed. The VFD regulations also required poultry producers to have a working relationship with a veterinarian and a written flock health plan. All this information had to be gathered and managed for Dutchland's team of pullet growers and egg producers.

Enter Document Management Coordinator Michelle Lombardo-Smith, "In 2016, Dutchland Farms implemented a paper process to document the relationship between our customers' farms and Dr. Eric Willinghan. These forms had a long turnaround time to completion. The process required the farm information to be entered, signed by the farm personnel and then an in-person signature of the veterinarian before they were complete. Finally, copies of the signed forms were made and mailed or dropped off at the farm."

To streamline the process, Michelle used Laserfiche, the company's enterprise content management system. She noted, "The result was the redesign of the paper form into an online form. This new Flock Health Plan form provides access at the farm via smartphones using the Laserfiche Mobile App. Forms can be completed in advance, which allows for saving of an off-line copy that can be signed even in places where there is no cell service. Forms can then be uploaded once cell service or Wi-Fi is available. In areas where cell service is good, forms are accessible in real-time and allow for on-site changes to house, farm contact, and other flock information."

Under Michelle's leadership, Laserfiche is being used throughout the Wenger Feeds organization to speed the transfer of documents, improve business intelligence, and reduce paper usage. The improvements for Dutchland growers and producers include quick turnaround for receipt of a completed document and signed copies available to them directly via email. Dutchland was able to significantly reduce the time from farm signature to vet approval/signature of the Flock Health Plans, save on generation of paper copies and mail costs. Use of Laserfiche as the home for the completed forms provides access to anyone on the Dutchland team whether they are in office or on the farm, using the Mobile App.

Michelle noted "This effort owes its success to many team members who saw the need for a solution and were heavily involved in testing. Dutchland is now the first team to take advantage of the Laserfiche Mobile App."

Mycotoxins in Animal Nutrition

DEFINITION AND TYPES OF MYCOTOXINS

Dr. Fausto Solís, Nutrition Services Manager

The term "mycotoxin" is derived from "mykes" meaning fungi and "toxicon" meaning poison. Mycotoxins are toxic metabolites of fungi commonly found in cereal grains. There are over 200 species of molds that produce mycotoxins; however, six are the most important that can affect the health and productivity of animal species. Those mycotoxins that can produce a variety of diseases in poultry and swine are Aflatoxins, Ochratoxin, Deoxynivalenol (DON), T-2, Zearalenone, and Fumonisins.

AFLATOXINS

Aflatoxin is a potent mutagen and hepato-carcinogenic mycotoxin produced by the fungus *Aspergillus flavus* and *Aspergillus parasitius* that affects a wide range of animal species. Chronic exposure to aflatoxin may significantly alter productivity in animals and impose a risk to the consumers from direct exposure to contaminated food commodities. Since the liver is the target organ of aflatoxin in broilers, the contamination with aflatoxin is characterized by a severe hepatic enlargement and fatty infiltration. In poultry, aflatoxin inhibits weight gain, reduces feed efficiency, reduces egg production and egg weight; it may also increase fat in the liver, carcass bruising, poor pigmentation, and liver damage. The performance of the animal is reduced because aflatoxin decreases activities of several enzymes involved in the digestion of starch, protein, lipids, and nucleic acids, and causes immunosuppression. The immunosuppressing effect of aflatoxin may contribute to the outbreaks of many diseases and failures of vaccination.

Even though swine species are less susceptible to aflatoxin than poultry, the maximum level allowed in feed and ingredients by the Food and Drug Administration (FDA) is 20 ppb.

OCHRATOXINS

Ochratoxins are mycotoxins produced by the fungi *Aspergillus* and *Penicillium*. Signs of ochratoxin toxicity in poultry include weakness, anemia, decreased feed consumption, reduced growth rate and egg production, poor feathering, and excessive mortality at high dietary concentrations. Increases in the relative weights of liver, spleen, pancreas, proventriculus, gizzard, and testes in poultry are also observed in ochratoxin toxicity. Ochratoxins interfere with the synthesis of DNA, RNA, and protein and carbohydrate metabolism. Ochratoxin may also cause loss of pigmentation because it reduces the synthesis of carotenoids in broilers; this effect is more severe than that caused by aflatoxin. The most characteristic effect of an ochratoxin toxicity is the hypertrophy, inflammation, and malfunction of kidneys in both poultry and swine.

DON AND T-2

DON (vomitoxin) and T-2 belong to the group of mycotoxins called trichothecenes, which are the most potent inhibitors of protein synthesis followed by a secondary disruption of DNA and RNA synthesis. Toxic effects of this group of mycotoxins include oral lesions, growth retardation, abnormal feathering, decreased egg production and eggshell quality, regression of the bursa of Fabricius, changes in liver, abnormal blood coagulation, and immunosuppression. Concentrations of T-2 that cause oral lesions are lower (0.4 ppm) than concentrations that decrease chick performance (3–4 ppm) whereas ducks are affected when the dietary concentration is as low as 0.4 ppm.

The level of DON that affects chick performance is still debated; some researchers report toxic effects at 16 ppm, whereas others report no toxic effect until dietary concentrations exceeded 116 ppm of DON.

On the other hand, pigs are the most susceptible species to DON. In several studies, it has been demonstrated that DON at concentrations ranging from 1 to 7 ppm significantly alters several key functions of the intestinal tract including decreasing villus surface area available for absorption and altering the permeability of the intestinal tract.

DON level above 1.5 ppm of feed in pigs primarily decrease feed intake, immune suppression, and, at higher concentrations, a complete feed refusal might be observed in this type of animal. In addition, higher levels of DON fed to pigs have shown to reduce average daily gain (ADG) and reduce feed efficiency.

ZEARALENONE

Zearalenone is a mycotoxin produced by the fungi *Fusarium graminearum* and *Fusarium culmorum* in cereals, which have estrogenic and anabolic actions in the reproductive tract. Zearalenone has hematotoxic (blood toxicity), hepatotoxic (liver toxicity), and immunotoxicological effects (immune system) as well as carcinogenic, mutagenic, and genotoxic activity. It appears that zearalenone does not have important effects in

poultry species; however, it has been shown that there is breed specific susceptibility to mycotoxins, and, in some species of poultry, an increase of the bursa of Fabrisius with 30 ppm of zearalenone has been observed; in general, turkeys have shown to be less resistant to zearalenone than chickens.

The main symptoms described in swine are anestrous and reduced litter size, edema of the vagina, mammary gland enlargement, swelling and reddening of the vulva in gilts. In several studies, zearalenone has shown to increase the size of the uterus and ovary weights in pigs, which prove the estrogenic effect of zearalenone on the reproductive system of pigs. Zearalenone acts on the secretion of the Follicle Stimulant Hormone (FSH), which depresses the maturation of ovarian follicles during the pre-ovulatory stage. Greater levels of FSH in gilts has been observed with 2 ppm of zearalenone. Higher levels of zearalenone (3.2 ppm) increased the size of the liver and kidneys in swine.

FUMONISINS

Fumonisins are mycotoxins produced by the fungus *Fusarium*. Although the most susceptible animals to fumonisins are horses and swine, mild to moderate toxicity has been reported in chicks, ducks, and turkeys fed rations containing 75–400 ppm. It has been reported that in diets with more than 150 ppm, liver pathology such as hyperplasia might be observed in ducklings and turkeys. It has been demonstrated that feed intake is reduced in turkeys fed 50 ppm, which suggests that turkeys are more susceptible than chickens to fumonisins.

Swine are very susceptible to fumonisins with the porcine pulmonary edema, which causes very serious pneumonia and respiratory distress as the most pronounced diseases in diets containing 10 ppm of fumonisins; at this level of contamination, decreased ADG and feed efficiency in post-weaned piglets has been observed.

INTERACTIONS AMONG MYCOTOXINS AND MYCOTOXIN PREVALENCE

In general, contaminated feeds usually contain more than one mycotoxin. Most of the studies showed a synergistic or additive interaction of mycotoxin on animal performance. Combination of mycotoxins, at concentrations that individually should not cause negative effects, may negatively affect animals.

In a survey done by Biomin in 2016, it was observed that 83% of the corn has at least one of the six more common mycotoxins and 58% of the samples are contaminated with multiple mycotoxins (≥2 mycotoxins). According to a 3-yr global survey, the most prevalent (65% of finished feed) mycotoxin in North American feedstuffs is deoxynivalenol (DON) known for its feed intake suppression and immunomodulatory effects in pigs when present in diets at or over 1 ppm.

Mycotoxins can be a complicated and technical subject, but Wenger Feeds monitors toxin levels throughout the year and makes adjustments to our proprietary diets as needed. Please talk to your account leader for more information.

FACTORS AFFECTING MYCOTOXIN INCIDENCE AND MANAGING MYCOTOXINS

Some environmental factors such as high temperature, low rainfall, high moisture levels, and insect infestation may make the grain prone to mycotoxin contamination.

The prevention of mycotoxins should begin by preventing and controlling the fungi producing the mycotoxins. Fungi survive and grow in dark and humid environments; so, lowering the moisture content of plant seeds after harvesting and storage is one of the major steps to prevent mycotoxins. Additionally, high temperatures are favorable for the proliferation of fungi and their metabolites (mycotoxins); therefore, it is advisable to store commodities at low temperature whenever possible. Some chemical compounds such as fungicides and preservatives have shown to be effective against fungus development. A routine insect control program helps to prevent insect infestation in stored bulk. After the grains have been infected, a common way to prevent mycotoxin diseases in animals is to use adsorbent compounds such as detoxifying agents based on aluminosilicate (clays), yeasts, diatomaceous earth, and enzymes. There are some studies showing that these compounds may bind mycotoxin molecules and prevent contamination by taking them out of the organism. In other studies, it has been shown that hydrothermal treatments, including pelleting, may reduce the mycotoxin population and alleviate mycotoxin effects.

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