MilloGram

WENGER® FEEDS

OUR MISSION: Providing Quality Feed for Quality Food.

Welcome Phil Rohrbaugh

F. Barry Shaw, Executive Chairman of the Board

I am pleased to announce that on June 15, 2018, Phil Rohrbaugh was named President and Chief Executive Officer of The Wenger Group by the Board of Directors. Phil will also serve as Executive Vice Chairman of the Board of Directors.

As you know, I assumed the role of President and CEO in March, when Geoff Finch resigned. However, it was always my intention to fill that role on an interim basis while leading the organization through this transition and establishing some key direction and strategic priorities. I will remain in a governance role as Executive Chairman of the Board of Directors.

I am happy to see Phil assume responsibility for The Wenger Group and its companies including Wenger Feeds, LLC.

Phil was most recently the Chief Operating Officer of Fulton Financial Corporation, where he retired in March 2018 after a six-year tenure. Prior to Fulton, Phil worked in leadership positions for large professional services firms in a variety of roles including Vice Chairman. His varied experience in agribusiness, manufacturing, distribution, retail, banking, insurance, and technology will be an asset to our team and all our divisions.

Phil will be a great asset in enabling us to continue to deliver exceptional results to you, our customers.

Phil is familiar with our organization having first served us in the 1980s in a financial advisory capacity, and many of you may also know him from his service to our industry and our community. He is currently on the Board of Directors of a large regional manufacturing company and the Lancaster County Career and Technology Center in Mount Joy. He previously served as a trustee of Lancaster Bible College and continues to serve on their Finance Committee.

Phil has the background, skills, and experience to lead us in addressing key areas, and his values align with the core values of our company. Phil will be a great asset in enabling us to continue to deliver exceptional results to you, our customers.

In this Issue

The Spotted Lanternfly and WFM Transport

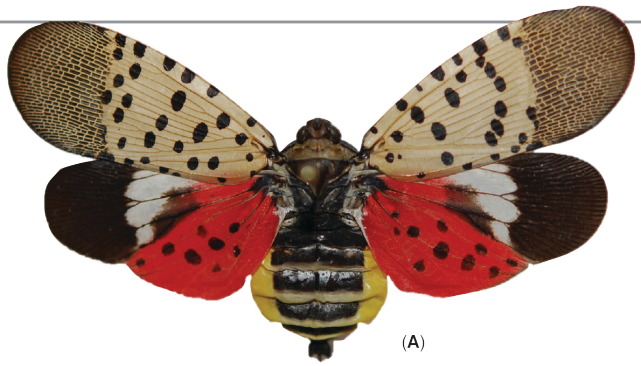
Wenger's Transportation division, WFM Transport, is aiding in the effort to contain the Spotted Lanternfly, an invasive insect that has been discovered in Berks County, Pennsylvania. Native to China, India, and Vietnam, the lanternfly attacks many hosts including grapes, apples, stone fruits, and the tree of heaven and has the potential to greatly impact the grape, fruit tree, and logging industries. The Pennsylvania Department of Agriculture notes that early detection is vital for the protection of Pennsylvania businesses and agriculture.

(The Spotted Lanternfly) has the potential to greatly impact the grape, fruit tree, and logging industries.

Pennsylvania has designated a quarantine zone that encompasses 13 counties and over 3,000 square miles. This is up from just 174 square miles in 2016. WFM Transport has stepped up to help as the company has a high concentration of growers in the quarantine zone. Transportation Manager, Chris Salisbury, explains, "The Spotted Lanternfly will lay its eggs on almost any surface including wheel wells, train cars and trailers. Penn State, along with the PA Department of Agriculture, has put together information and training to help us prevent the spread of this pest. John Patterson, Dutchland Warehouse Supervisor, has been designated a trainer and has trained several team members. The division will be sending team members to regional training soon and will then roll information and preventive steps out to our driver force." For more information: www.agriculture.pa.gov/spottedlanternfly

Graphic reprinted with permission

Pest Alert


(A)

Spotted Lanternfly

***Lycorma delicatula* (WHITE)**
(Hemiptera: Fulgoridae)

The Spotted Lanternfly, *Lycorma delicatula* (White), an invasive planthopper, has been discovered in Berks County, Pennsylvania. It is native to China, India, Vietnam, and introduced to Korea where it has become a major pest. This insect attacks many hosts including grapes, apples, stone fruits, and tree of heaven and has the potential to greatly impact the grape, fruit tree, and logging industries. Early detection is vital for the protection of Pennsylvania businesses and agriculture.


(B)


(C)


(D)*


(E)*


(F)


(G)


(H)


(I)

*Photos courtesy of Park et al. 2009, Biological Characteristics of Lycorma delicatula and the Control Effects of Some Insecticides.

(A) Spotted Lanternfly showing the fore and hind wings (B) Resting against bark (C) Lateral view (D) Early nymphs (E) Late nymphs (F) Feeding on wild *Vitis* sp. (G) Weeping sap trail on tree (H) Egg mass covered in waxy coating (I) Old hatched egg mass on a trunk.

Mike Lutz Retires after 40 Years of Service

J. Michael Lutz will be retiring at the end of June after more than 42 years of service to The Wenger Group. Mike joined Wenger Feeds in June 1976 to computerize its financial and layer records operations. Mike wrote programs for the new IBM system and was instrumental in forming the information technology (IT) infrastructure for the company.

On behalf of the entire Wenger Group, thank you, Mike, for a job well done, and we wish you the very best in your retirement.

In 1981, Mike took on the role of Corporate Treasurer and Controller in addition to managing company information systems. As the company grew, Mike transitioned into the role of Chief Financial Officer. In that capacity, Mike led both the Finance Team and the Information Technology Team as the company grew from one milling location to seven. He has been key to the growth and success The Wenger Group enjoys today.

Mike was named to the Board of Directors in 1991 and named Treasurer and Assistant Secretary the following year. Mike has also represented The Wenger Group at Affinity Insurance, Ltd. since 2008, where he served on the Board of Directors, Underwriting, and Member Review Committees. He is also currently on the Board of Directors/ Finance Committee at the North Museum Corporation in Lancaster.

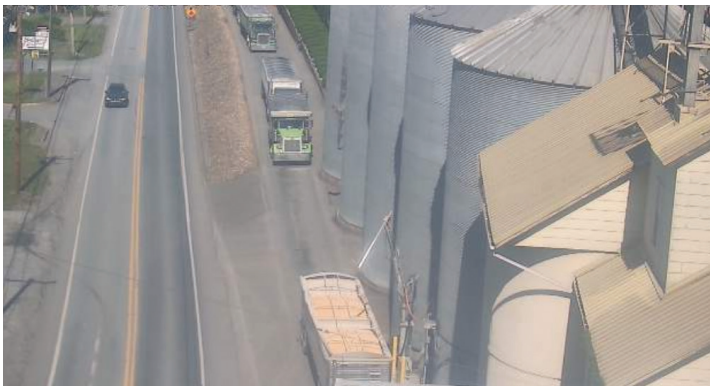
Mike's expertise will be sincerely missed. On behalf of the entire Wenger Group, thank you, Mike, for a job well done, and we wish you the very best in your retirement.

New Cameras Aid in Delivery Planning

New cameras have arrived for Wenger Feeds' Massey and Hempfield Mills. Installation is being planned for July.

The two new cameras join ones at Rheems, Mount Joy, Shippensburg, Muncy, and Spring Glen so that every location will now be covered. The cameras are pointed at each location's grain receiving area and help vendors plan their deliveries. They are especially valuable for local deliveries as vendors can check before leaving the farm and plan their delivery for a down time.

Auto-probes have also helped speed delivery times as the trucks can be probed and samples tested prior to entering the receiving area.



(Upper right) The first camera was installed at Rheems in 2011. Being the largest location, the Rheems Mill also has the busiest grain receiving area. The auto probe at the Rheems Mill is visible in the lower right corner. The Rheems camera was upgraded earlier this year at the same time that a camera was installed at the Spring Glen location (pictured lower right).

Use of Phytogenics in Animal Nutrition

Fausto Solis, Ph.D., Nutrition Services Manager

Wenger Feeds has been researching antibiotic alternatives as a result of changes in customer preference and legislation that limited antiobiotic use in animal feeds. You can read more about this legislative change and how it affects your business at our web site: https://www.wengerfeeds.com/veterinary-feed-directive-what-you-need-to-know/

Phytogenics, products like herbs, spices, and essential oils from plant sources, are among the most promising antibiotic alternatives to maintain animal health and feed efficiency. Depending on the active ingredients, phytogenics have antioxidant, antimicrobial, gastrointestinal tract development, and growth promoting properties.

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ANTIOXIDANT PROPERTIES

Phytogenics can prevent fat oxidation in the feed and improve the absorption of fat-soluble nutrients such as vitamins A, D3, E, and K. The addition of these compounds may reduce vitamin E as an antioxidant in the improvement of oxidative stability in feed and carcass meat.

In scientific studies, some compounds extracted from mint plants, rosemary, oregano, thyme, sage plant, ginger, curcuma, anise, green tea, red pepper, chili, and artemisia have shown to protect the feed and carcass (Burt, 2004).

Thymol, for example, is a compound found in thyme that prevents chicken meat oxidation for up to 60 days, and its addition reduced the peroxide values from 35 to 10 meq O2/kg. High peroxide values in the feed negatively impact animal performance. An increase in feed conversion from 1.82 to 1.89 occured when the peroxide value was increased from 0 to 150 (McGill et al., 2011). In addition, the same study also shows that adding 125 ppm of antioxidant prevented the negative effect of peroxide value on chicken performance.

The anti-oxidative activity of plant sources arises from phenolic compounds in those phytogenics such as rosmarinic acid, rosmarol, thymol, and carvacrol (Burt, 2004).

ANTIMICROBIAL

Phenolic acids, flavonoids, tannins, stilbenes, curcuminoids, coumarins, lignans, quinones, carvacrol, thymol, eugenol, perillaldehyde, cinnamaldehyde, cinnamic acid, and volatile fatty acids are active ingredients of phytogenics that, at very low concentration, have shown to inhibit the growth of *E. coli*, *Clostridium perfringens* and *Salmonella* (Burt, 2004). In addition, they have shown to be effective against fungi, yeasts, worms (Khalaji et al., 2011), and the coccidiosis-causing agent, *Eimeria* (Hume et al., 2006).

Carvacrol, for example, is a hydrophobic compound found in oregano that dissolves in and disintegrates the bacterial membrane structure at a very low concentration causing ion leakage and lowering the energy synthesis (Khalaji et al., 2011). After carvacrol disintegrates and disrupts the permeability of the bacterial membrane, the increased leakage of essential protons such as potassium (K) and hydrogen (H) inhibits several enzyme activities leaving the bacteria unable to reproduce and survive.

GASTROINTESTINAL TRACT DEVELOPMENT

The microflora of poultry and swine is formed of both pathogenic and beneficial bacteria. Several studies have shown that increasing the beneficial bacteria population in the gastrointestinal tract improves animal well-being, and performance.

The supplementation of phytogenic products in chicken diets has shown to stabilize the ecosystem of gastrointestinal microbiota. For example, essential oils from oregano, red pepper, and cinnamon decrease *E.coli* and *Clostridium perfringens*, in the rectal content (Jamroz et al., 2003).

It is believed that volatile fatty acids from phytogenics exert a major part of their biological efficacy mainly through stabilizing the intestinal microflora and suppressing the formation of biogenic amines. The formation of biogenic amines by microbiota is undesirable not only because of their toxicity but also because they reduce essential limiting amino acids such as lysine and methionine. Consequently, relief from microbial fermentation in the small intestine may improve the supply status of limiting essential nutrients.

Most of the available reports show increased villi length and crypt depth in the jejunum and colon for broilers and pigs treated with phytogenic feed additives (Khalaji et al., 2011). For example, camellia plant extract improved the ileum structure

as indicated by an increase in villi length and crypt depth (Khalaji et al., 2011). The increase in villi length has been associated with an increased population of beneficial bacteria such as lactobacilli and bifidobacteria in broiler intestines. Additionally, phytogenic products stimulate digestive enzyme (trypsin and amylase) production and activity, and induce a higher secretion of bile acids.

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In addition, dietary spices induce changes in cell membrane fluidity and permeability properties resulting in increased absorption of micronutrients from the small intestine (Peinado et al., 2012).

GROWTH PROMOTERS (BETTER PERFORMANCE)

As discussed, the addition of phytogenics in feed may prevent the challenge from pathogens and enhance the gastrointestinal development, which may contribute to improve animal performance. This is particularly true in the starter phases of poultry and pigs, when there is a high susceptibility to digestive disorders.

Phytogenics have shown to alleviate the stress and reduce the energy required of the animals during critical phases. This makes essential nutrients more available for absorption, which helps animals to grow better within their genetic potential. For example, black cumin seeds supplemented in feed at 1 or 3% significantly increased final body weight and decreased feed conversion of laying hens (El-Bagir et al., 2006). The improvement could be due to the high oil content in black cumin seeds or its effects in nutrient digestibility and gizzard relative weight.

In other studies, the daily weight gain was increased and feed conversion ratio of chickens was reduced when chickens received a diet supplemented with a mixture 300 mg/kg of feed containing capsaicin, cinnamaldehyde, and carvacrol (Jamroz et al, 2003). Then, it was proven that the addition of 400 mg of anise oil/ kg of feed improved the daily live weight gain by approximately 15% compared with that of the control group (Ciftici et al., 2005).

RESEARCH

We know that finding effective alternatives to improve animal health is important to our customers and to their customers. We continue to utilize our research houses to test new ingredients, feed formulas, and management techniques and bring those innovations to our customer base. If you would like more information on our research, please contact your Account Leader.

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OUR MISSION:
Providing Quality Feed for Quality Food.

■ **GRAIN RECEIVING CAMERAS**
If you haul corn or soybeans to our milling locations, check our grain receiving cameras. Use the icon at wengerfeeds.com or click on "Grain Receiving" under the About tab.

■ **GO GREEN:** Receive your Millogram by e-mail. Send your request to cc@wengerfeeds.com. Be sure to include your mailing address.

2018 CALENDAR CORRECTION:
The Wenger Group May 2018 Calendar should read "In Yellowstone, more people are injured by bison than by bears."