MediaRoom

Study from Kemin Industries, Adesco Nutricines and Dow Shows Stored Grains with Myco CURB® ES Liquid Reduce Carbon Footprint

A joint life cycle assessment compared drying and aerating stored grains with using Kemin's solution to treat them

HERENTALS, Belgium (June 8, 2021) – Kemin Industries, a global ingredient manufacturer that strives to sustainably transform the quality of life every day for 80 percent of the world with its products and services, together with its partners Adesco Nutricines (Adesco) and Dow, a global leader in materials science, performed a life cycle assessment of Kemin's Myco CURB® ES Liquid on stored grains, demonstrating that treatment with this solution is more environmentally sustainable than drying or aerating stored grains.

Accelerating greenhouse gas (GHG) emissions worldwide have created elevated concerns about the effects of climate change and the impact of GHGs on the planet. In 2015, the United Nations (UN) adopted 17 Sustainable Development Goals aimed at restoring and promoting social, economic and environmental sustainability. Goal 13 – "Take urgent action to combat climate change and its impacts." – emphasizes that actions need to be integrated into national policies, strategies and planning. Identifying measures to reduce on-farm emissions contributes to this goal.

The growing human population continues to drive global demand for food and feed, which impacts production of major grains. The UN estimates that a 70 percent increase in grain production is required to meet this rising demand, but to keep the environmental footprint associated with agriculture low, a comprehensive plan needs to be in place to limit the impact of increased production activities.

With these factors in mind, Kemin Animal Nutrition and Health – EMENA (Europe, Middle East, North Africa) used the UN's Sustainable Development Goals to help determine its focus areas and responsibilities. Kemin guides its sustainable action using a triple-bottom-line approach that encompasses three overlapping areas: Healthy People, Healthy Planet and Healthy Business.

"These three lenses provide the framework we use to measure the impact of our efforts. Each lens includes both an internal and external scope," said Stefaan Van Dyck, President, Kemin Animal Nutrition and Health – EMENA. "The internal scope addresses, for example, how we can improve our internal operations, sourcing and production processes. The external scope looks at how our solutions (products and services) can sustainably transform lives, animal welfare, the environment and our customers' operations, to name a few."

One of Kemin's suppliers, Dow, has set its own ambitious 2025 Sustainability Goals as well as additional targets to specifically address reducing carbon emissions and eliminating plastic waste. Dow is working with like-minded partners to help lead the transition to a more sustainable planet and society. "As we advance our third set of 10-year sustainability goals, our sustainability journey has evolved from focusing on operational efficiency (our footprint), to product solutions and world challenges (our handprint), to recognizing that only through collaboration can we accelerate our positive impact (blueprint thinking)," said Andrea Blanco Acuña, Marketing Manager, Dow's Feed & Food industries – EMEAI.

A crucial step for Kemin, Adesco and Dow is carbon footprint analysis of stored grains preserved with Kemin's Myco CURB ES Liquid, compared to other grain storage methods.

Life cycle impact assessment should be viewed as a holistic approach in which solutions contribute to sustainability by reducing the CO_2 equivalents (CO_2-eq) per kilogram of food and improving animal productivity, welfare and profitability.

"Life cycle impact assessments must look at the complete value chain, from raw materials to the end-product contributing to a "healthy business". At Kemin, we want the impact of our solutions to enhance the marketability of food produced, and we cannot do this exercise without our suppliers," said Van Dyck.

"This project is an example of Adesco's commitment to helping the industry adopt commercially insightful practices that enable carbon reduction across the feed and food chain," said Jack O'Hare, Managing Director, Adesco. "Good data drives good decisions, and by providing customers with accurate and externally validated information, we can help accelerate adoption of solutions that make a sustainable difference."

"Transitioning to a sustainable future is a business imperative for Dow. As a materials science company, we play an important role in providing scientific expertise and encouraging the incorporation of sustainability principles in our customers' business plans," said Blanco Acuña.

Kemin, Dow and Adesco jointly conducted a gate-to-gate life cycle assessment study to investigate the GHG

emissions in CO_2-eq of barley and wheat using three different methods of grain storage: aeration, drying and preservative addition. The study, which began in July 2019, was conducted based on data compiled by Adesco in Ireland during harvest. The extended storage period is applicable to typical Atlantic climate conditions (West North Europe) with a high average rainfall throughout the year and wetter harvests.

“The results from this study demonstrate that drying and aerating grain create a bigger carbon footprint than treating grains with Myco CURB ES Liquid,” said Carmen Coetzee, Product Manager, Kemin Animal Nutrition and Health – EMENA. “The addition of a mould inhibitor – a preservative based on propionic acid and a synergistic combination of other organic acids, their salts and surfactants – enables a reduction of approximately two to three times the carbon footprint in kilogram CO_2-eq per ton of grain stored, compared to aeration and drying methods, respectively. This information is critical to our customers, who can immediately use these insights to optimize their sustainability impact. For Kemin, this study and its results are a decisive step in defining the life cycle impact assessment of our entire value chain.”

For all the partners involved in this life cycle assessment, external validation was crucial to the study. Blonk Consultants granted certification attesting that the life cycle assessment of this study, in which Myco CURB ES Liquid was used to treat stored grain, met the requirements of ISO 14040 and 14044.

“The results of this groundbreaking life cycle assessment demonstrate that treatment of grain with Myco CURB ES liquid offers the industry an immediate, significant and practical means to reduce the carbon footprint of grain processing and feed production,” said Sean O’Hare, Engineering and Sustainability Manager, Adesco. “Our customers are reassured by recent animal performance studies indicating that using treated grain in their feeds enables them to cut their carbon emissions without loss of feed efficiency or reduced animal performance.”

The joint study carries importance for the food and feed industry.

“Together we could quantify the positive impact of a technical solution in terms of environmental metrics, and this encourages us to keep using data and science in our activities across the value chain,” said Inge Hageman, Global Account Manager, Dow.

Click here for more information on Kemin’s sustainability programme.

For information on Dow sustainability goals, click here.

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About Kemin Industries

Kemin Industries (www.kemin.com) is a global ingredient manufacturer that strives to sustainably transform the quality of life every day for 80 percent of the world with its products and services. The company supplies over 500 specialty ingredients for human, and animal health & nutrition, pet food, aquaculture, nutraceutical, food technologies, crop technologies, textile, biofuel and animal vaccine industries.

For over half a century, Kemin has been dedicated to using applied science to address industry challenges and offer product solutions to customers in more than 120 countries. Kemin provides ingredients to feed a growing population with its commitment to the quality, safety and efficacy of food, feed and health-related products.

Established in 1961, Kemin is a privately held, family-owned-and-operated company with more than 2,800 global employees and operations in 90 countries, including manufacturing facilities in Belgium, Brazil, China, India, Italy, Russia, San Marino, Singapore, South Africa and the United States.

About Dow

Dow (NYSE: DOW) combines global breadth, asset integration and scale, focused innovation and leading business positions to achieve profitable growth. The Company’s ambition is to become the most innovative, customer centric, inclusive and sustainable materials science company, with a purpose to deliver a sustainable future for the world through our materials science expertise and collaboration with our partners. Dow’s portfolio of plastics, industrial intermediates, coatings and silicones businesses delivers a broad range of differentiated science-based products and solutions for its customers in high-growth market segments, such as packaging, infrastructure, mobility and consumer care. Dow operates 106 manufacturing sites in 31 countries and employs approximately 35,700 people. Dow delivered sales of approximately $39 billion in 2020. References to Dow or the Company mean Dow Inc. and its subsidiaries. For more information, please visit www.dow.com or follow @DowNewsroom on Twitter.

About Adesco

Established in 2006, Adesco Nutricines is an agri-technology and services business that is dedicated to helping Ireland's feed and grain industry improve efficiencies and reduce carbon emissions attributed to the production of food for domestic and export markets.

As a trusted partner of Ireland's leading grain processors and feed mills, Adesco has, for more than 15 years, helped them adopt innovative technologies and solutions that improve raw material quality and yield, achieve process efficiencies and reduce carbon footprint of their products.

Working across the feed-to-food chain, Adesco has renewed its commitment to research and development initiatives that will enable farmers, grain processors and feed and food producers better meet the ongoing challenges of climate change in a competitive global market environment.

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