Feed additives – 5 amino acids for pig and broiler production: DL-Methionine, L-Lysine, L-Threonine, L-Tryptophan and L-Valine

An Evonik case study

Supplementing animal feed with essential amino acids can save significant amounts of feed raw materials, resulting in minimized use of arable land for crop production and thus, fewer CO2eq emissions.

Furthermore, feed supplementation with these essential amino acids reduces both nitrogen and greenhouse gas emissions resulting from feeding and excretion.

Animal feed is specifically formulated to meet the physiological nutrition needs of animals, particularly the necessary shares of essential amino acids. Lack of certain amino acids in animal feed can be compensated either by adding a higher percentage of protein-rich feed components such as oil seed, or by fortifying the feed with essential amino acids produced by Evonik for this purpose.

In this case study, a supplemented feed mix incl. cristalline amino acids is compared to two non-supplemented feed mixes based on soybean as protein rich feed ingredient in one case and soybean and rapeseed in the second case. This is conducted for both animals, broiler and pigs. This study presents an update of Evonik’s LCA on feed additives from 2011, now including L-Valine (ValAMINO®) as fifth limiting amino acid in addition to DL-Methionine (MetAMINO®), L-Lysine (Biolys®), L-Threonine (ThreAMINO®) and L-Tryptophan (TrypAMINO®).

Full study available at: www.icca-chem.org/energy-climate

This case study illustrates how the reduction of greenhouse gas (GHG) emissions can be enabled by chemical products, as part of a series of case studies brought to you by ICCA. Chemical industry members offered Life Cycle Assessment (LCA) case studies for the purpose of showing illustrative examples on how to calculate avoided greenhouse gas emissions. The avoided emission calculations were based on the guidelines developed by ICCA and WBSCD (World Business Council for Sustainable Development) - Chemical Sector, with the support of Arthur D. Little and Ecofys. Other life cycle environmental impacts such as water and land use change were outside the scope and usually not considered.

For more information, please visit www.icca-chem.org