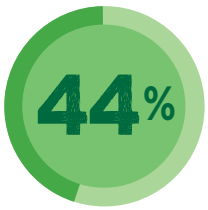
SCIENTISTS FIND 'GIANT LEAP FORWARD' IN FAMILY FARM AND GLOBAL FOOD SUSTAINABILITY

Independent university and industry scientists[1] have discovered that increasing soybean protein in livestock diets can help family farmers recapture billions in feed sales lost to synthetic substitutes, improve livestock production, and cut CO_2 and nitrogen emissions by millions of tons. The gains are measurable by comparing livestock diets.

In 2017, agriculture statisticians and nutritionists discovered soybean feed value is predictable in livestock diets.[2] In 2021, the team found a natural way to reverse decades of sliding soybean protein and improving sustainability metrics: Corn and soybeans naturally work together in livestock diets to reduce livestock emissions. Because soybeans and corn are the 'feed foundation' of the global livestock system, this finding can improve family farm revenue and food system sustainability.

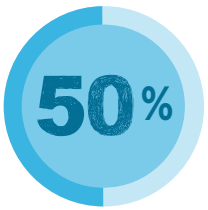
High Soybean Protein Improves Corn Sales

When soybean meal protein increases, the amount needed naturally goes down. That means corn demand naturally goes up, along with farm sector value. Better soybean protein also decreases livestock feed costs. Here's how an Iowa pig diet changes when soybean meal protein increases from 44 percent to 50 percent:



44% Protein Soybean Meal
Formula Cost: *$161.14*

SBM used/ton: 159.25 lbs
Corn used/ton: 1,528.99 lbs
Fat used/ton: 24.24 lbs



50% Protein Soybean Meal
Formula Cost: *$156.29*

SBM used/ton: 158.52 lbs
Corn used/ton: 1,711.06 lbs
Fat used/ton: –

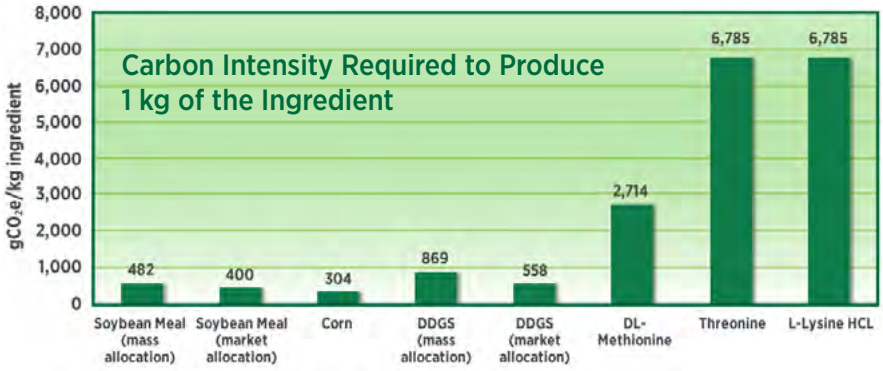
Feed Value Increases When Soybean Meal Protein Improves

When soybean protein increases, slightly less is needed per ton of feed. However, the value of the soybeans increases, and feed costs decrease too. Today, farmers aren't paid directly for higher soybean quality like they are with other crops or livestock products, but quality impacts farm revenue today in the form of smaller elevator checks and billions of dollars in family farm revenue lost to synthetic amino acids and distillers dry grains with solubles (DDGS) from ethanol plants.

1 Dr. Bart Borg, Dr. Dean Boyd, Dr. Shawn Conley, Dr. Paul Mitchell, John Osthus
2 Mourtzinis, S., Borg, B.S., Naeve, S.L ., Osthus, J. and Conley, S.P. (2018), Characterizing Soybean Meal Value Variation across the United States: A Swine Case Study. Agronomy Journal, 110: 23 43 -23 49. https://doi.org/10.2134/agronj2017.11.0624

Natural Feed Reduces Livestock GHGs

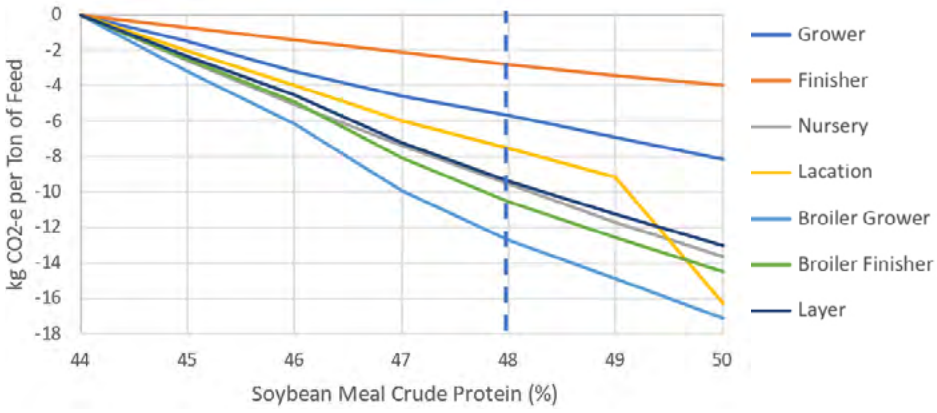
Since 1990, synthetic amino acids and DDGS gradually began to replace soybeans in livestock feed. That trend impacts lifecycle greenhouse gas emissions from livestock production, and displaces family farm revenue. A 2020 Argonne laboratory study found greenhouse gases and carbon intensity are significantly higher with synthetic feed compared to natural ingredients. This finding matters to sustainability managers because about 90% of GHG emissions from pigs and poultry come from producing the feed.[3]



Higher Soybean Protein Reduces GHGs

Independent university and commercial scientists combined data from Benevides and other researchers. They found that when soybean meal quality increases, DDGS and amino acids are reduced. Overall feed corn demand goes up, and greenhouse gasses are reduced. This finding identifies a practical way to improve feed quality and reduce greenhouse gasses and nitrogen at the same time. That means farmers and their customers can advance mutual success in new ways by working together from Seed to Feed.

Change in CO_2-equivalent (kg) vs CP=44



44% CP compared to 50% CP in IOWA PIG DIETS:

% delta CO_2 eq: **11.5%**

% delta nitrogen: **7.9%**

Sources: Mourtzinis et al; Benavides et al; Dr. Paul Mitchell, Dr. Bart Borg, Dr. Dean Boyd, Dr. Shawn Conley, John Osthus; Public and commercial nutrition data.

Take Action

Proactivism is a volunteer grassroots mission to help farmers recover billions in lost sales to synthetic feed, increase livestock health and productivity, protect ecosystems, and fight malnutrition. Everyone's help is needed to spread the news about how we can feed more people and protect ecosystems. Field science and communication support are also available.

BLUESPRING Ecosystem Services

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3 Pahola Thathiana Benavides, Hao Cai, Michael Wang, Nick B ajjalieh, Life -cycle analysis of soybean meal, distiller-dried grains with solubles, and synthetic amino acid-based animal feeds for swine and poultry production, Animal Feed Science and Technology, Volume 268, 2020, 114607, ISSN 0377-8401, https://doi.org/10.1016/j.anifeedsci.2020.114607