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

Independent university and industry scientists[1] have discovered a breakthrough way for farmers and food companies to improve farm sector revenue and food sustainability GHG metrics, starting with soybean variety selection.

In 2017, agriculture statisticians and nutritionists developed a way to know which soybeans have the highest nutritional value in livestock feed.[2] In 2021, the team pieced separate data together and found a hidden secret to reversing decades of sliding soybean protein and improving sustainability metrics: Corn and soybeans naturally work together in livestock diets to reduce livestock GHG emissions. Because soybeans and corn are the 'feed foundation' of the global livestock system, this finding can help improve future family farm revenue and food system sustainability.

High Soybean Protein Improves Corn Sales and Farm Sector Revenue

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.

44% Protein Soybean Meal
Formula Cost: $191.20

SBM used/ton: 437.22 lbs
Corn used/ton: 1,481.49 lbs
Fat used/ton: 20.87 lbs

50% Protein Soybean Meal
Formula Cost: $180.72

SBM used/ton: 372.67 lbs
Corn used/ton: 1,563.53 lbs
Fat used/ton: 2.54 lbs

Feed Value Increases When Soy Protein Improves

When soybean protein increases, less is needed per ton of feed. However, the feed 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, 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.

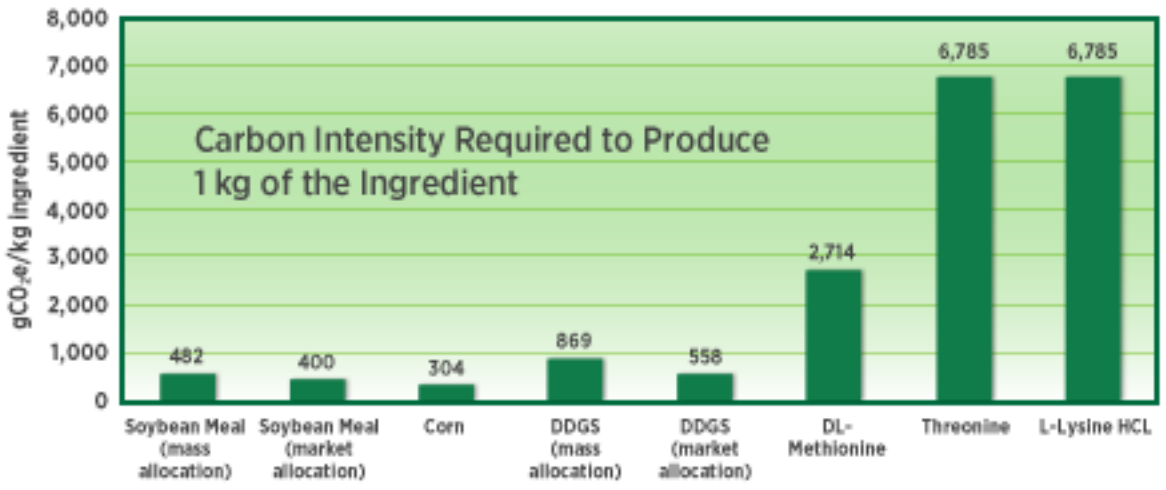
	SWINE		POULTRY		
Crude Protein (%)	Value ($M)	Added SBM Value vs CP=44	Value ($M)	Added Value vs CP=44	Total Added SBM Value ($M)
44	$2,288	---	$5,821	---	---
48	$2,427	$139	$6,032	$211	$350

- Based on feed usage and prices for 2018 market year, using public and commercial data
- Assumes all swine and poultry feed diets use increased crude protein soybean meal

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: 2343-2349. https://doi.org/10.2134/agronj2017.11.0624

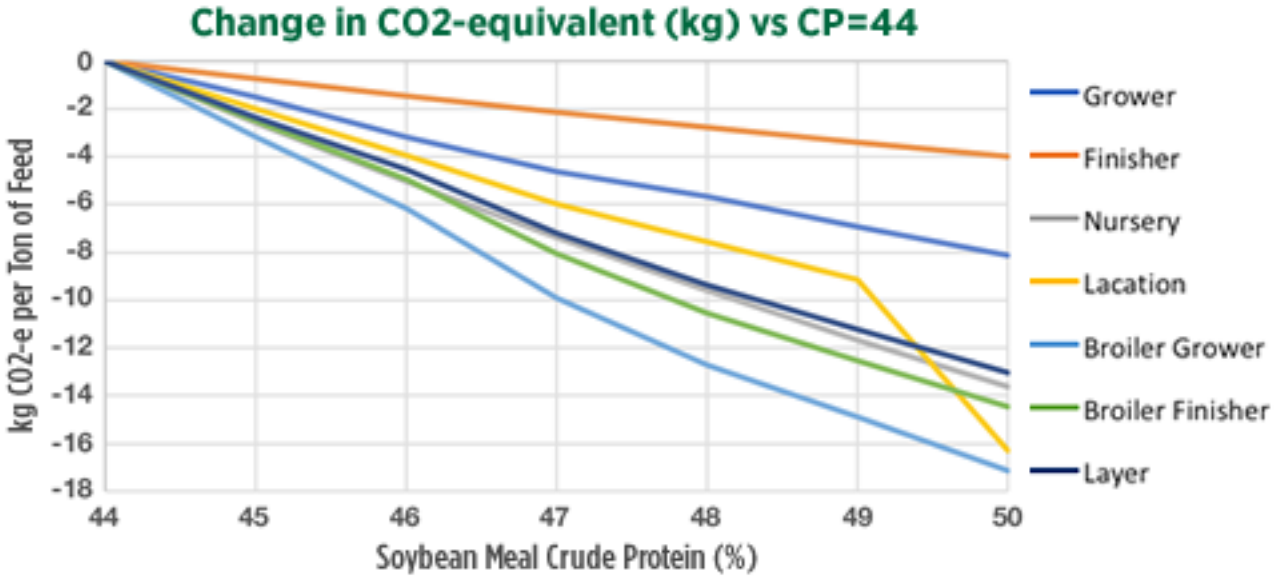
Natural Feed Reduces Livestock GHGs

Since 1990, synthetic amino acids gradually began to replace soybeans in livestock feed. This trend impacts lifecycle greenhouse gas emissions from livestock production, in addition to 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

FieldRise scientists combined GHG data from Benevides and others with the effect that better soybeans have on ingredients in livestock diets. They found that when soybean meal quality increases, DDGS and synthetics are reduced. Overall feed corn demand goes up, and greenhouse gasses are reduced. This finding is a breakthrough because it identifies a practical way to improve feed quality and reduce greenhouse gasses at the same time. That means farmers and their customers can advance mutual success in new ways by working together from Seed to Feed.



CO2-equivalent decrease vs. 44% crude protein: up to **4.5%** in poultry diets up to **4.6%** in swine diets

Take Action

It's easy to be proactive. Here's how you can help.

Farmers can find soybeans that deliver maximum feed value and boost corn demand at **ProActivism.com**. You can also sign up to join other farms in future value-sharing negotiations with feed buyers.

Farmers and Foodies can take action for farm, food, and energy sustainability by visiting **ProActivism.com**. That's where you can register to receive a confidential sustainability survey and personal report on how your family compares to others.

Organizations now have a practical and affordable way to measure and advance farm and food sustainability practices faster and cheaper. Please visit **FieldRise.com** for more information about improving sustainability metrics in partnership with farmers.

FieldRise

3 Pahola Thathiana Benavides, Hao Cai, Michael Wang, Nick Bajjalieh, 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

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