



COMMERCIAL SCALE EVALUATION OF HIGH PROTEIN ULTRA LOW OLIGOSACCHARIDE (HPULO) SOYBEAN MEAL AT PERDUE FARMS

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Schillinger Genetics has developed soybean lines dramatically higher in available energy and multiple amino acids, commonly referred to as High Protein Ultra Low Oligosaccharide (HPULO) soybeans. From 2009 to 2013, the United Soybean Board (USB) supported a series of successful small scale feeding trials with soybean meal (SBM) from early generation HPULO soybeans. In 2016 as the HPULO soybeans began nearing commercial viability, USB partnered with Perdue Farms in a commercial-scale evaluation.

A Perdue AgriBusiness' soybean processing facility processed about 50,000 bushels of HPULO soybeans and an equivalent amount of commercially-available commodity soybeans. The team evaluated samples of the test and control soybeans and SBMs for protein, oil, amino acids and soluble sugars using wet-chemistry. Then Perdue Farms Vice-President of Technical Services and Nutrition, Dr. Randy Mitchell, used the wet chemistry results to formulate diets with both commodity SBM and HPULO SBM to maximize chickens productive performance with a goal of achieving similar performance between feeding programs.

The trial, which involved over 600,000 broiler chickens, featured 12 side-by-side full production-cycle tests with each replicate having two houses on the same farm with similar equipment. Dr. Mitchell's hypothesis was that the HPULO SBM would reduce feed ingredient costs per ton.

Results proved the hypothesis correct. Then Dr. Mitchell conducted an economic analysis, based on market prices at the time, which indicated the HPULO SBM delivered an additional \$44.40/ton in gross economic applied value. Dr. Mitchell presented these findings to USB's Animal Nutrition Working Group on October 11, 2017. Dr. Mitchell also presented these findings to the USB Board at its February 21, 2018 meeting. See below for May 2018 staff estimate of additional value.

Potential Added-Value from HPULO Soybeans to U.S. Soy Value Chain

	SBM FY16/17 Total (mln.tons)	SBM Fed to Poultry/ Pigs (mln tons)	Added Value/ Ton (\$/ton)	Added Value (\$/year)
Domestic Soybean Meal Consumption	30.3*	26.6*	\$44.40	\$1.20 bln
Exported Meal and Meal from Exported U.S. Soybeans**	34.0	26.1	\$44.40	\$1.10 bln
Total				\$2.30 bln

* Source: 2017 Soybean Meal Demand Analysis, Decision Innovation Solutions

** Source: U.S. Soybean Export Council



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