



## THE SUSTAINABILITY OF U.S. SOYBEAN MEAL

U.S. soybean meal sustainability means doing more with less. And that's what soybean meal does by providing its effective bundle of nutrients—amino acids, energy and choline—in a convenient and continuously improving package.

Since 1980, U.S. farmers have increased the adoption of conservation tillage methods by 143 million acres. The average across all crops is for 63 percent of the land to be in conservation tillage and more than 70 percent of soybean farmers practice some form of conservation tillage every production cycle.

Conservation tillage saves a lot of energy. Back in 1980 the average energy use per bushel of soybeans was 74,000 BTUs per bushel. By 2013 energy use had fallen roughly 50 percent to 37,000 BTU/bushel.

Conservation tillage also makes a huge difference in soil erosion. Back in 1980 about a third of a ton of soil eroded for every bushel of soybeans grown. Now that number has declined by over 60 percent.

### INDEX OF PER BUSHEL RESOURCE IMPACTS TO PRODUCE SOYBEANS (U.S. YEAR 2000 = 1)

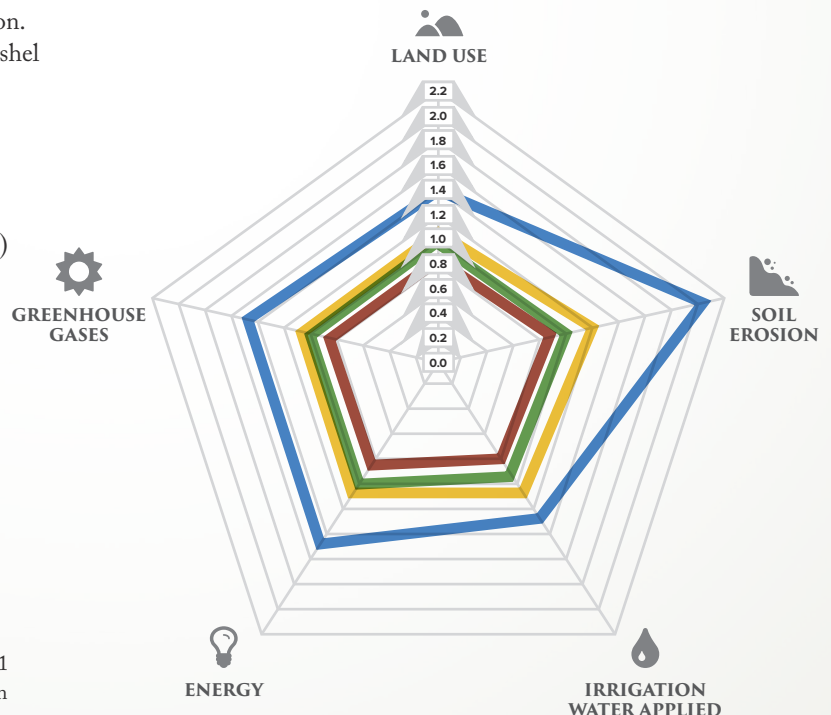
Year	2000*	Unit - Per Bushel
Land Use	0.027	Planted Acres
Soil Erosion	0.131	Tons
Irrigation Water Applied	0.766	Acre Inches
Energy	44,840	Btus
Greenhouse Gases	8.2	Pounds CO <sub>2</sub> e

\*Five-year average 1996 - 2000

**Note:** Data are presented in index form, where the year 2000 = 1 and a 0.1 point change is equal to 10% difference. Index values allow for comparison of change across multiple dimensions with differing units of measure.

And better management has improved farmers' ability to raise more soybeans using less water and land while reducing pollution and pesticide use. Irrigated water use per bushel has dropped by over 40 percent since 1980. The amount of land required to grow a bushel of soybeans has dropped by over 35 percent in that same time period. And greenhouse gas (GHG) emissions per bushel have fallen nearly 50 percent.

Most farms and ranches in the U.S. are family owned and operated. To stay on those farms and ranches doing more with less becomes a way of life, whether it is continuous improvement of the soil or ways to reduce energy and pesticide use. We've made some good progress and we're working to continuously improve.



- 5 YEAR AVERAGE 1980-1984
- 5 YEAR AVERAGE 1990-1994
- 5 YEAR AVERAGE 2000-2004
- 5 YEAR AVERAGE 2009-2013

**i** For more information visit [www.soymeal.org](http://www.soymeal.org) or contact: Philip Lobo, SmithBucklin/United Soybean Board (314)579-1582 or [plobo@smithbucklin.com](mailto:plobo@smithbucklin.com).

