Sustainability with SOURCE®

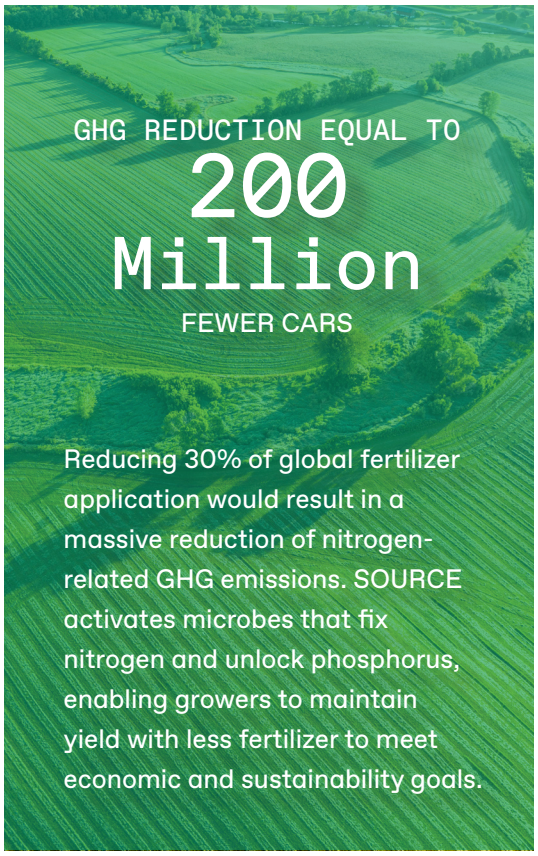
SOURCE®

SOURCE supports growers and the environment

While nitrogen and phosphorus are essential nutrients for crops, overuse of synthetic fertilizer has significant impacts on the environment and local populations. Between production, transportation, runoff, leaching, and emissions, fertilizer takes a large toll on the planet.

The result:

- Nitrogen fertilizer manufacturing creates about 1.1% of the world's GHG emissions annually.
- Nitrate runoff and leaching that can pollute waterways, contaminate drinking water, and lead to eutrophication.
- Excess nitrogen can be released into the atmosphere as nitrous oxide, a GHG with nearly 300 times the warming potential of carbon dioxide.
- Phosphorus, another important nutrient, also has environmental consequences. Excess phosphorus can enter waterways, reducing water quality and creating harmful algal blooms.



REDUCE 25-50 LBS OF N FERTILIZER PER ACRE

SOURCE allows growers to decrease nitrogen and phosphorous use while maintaining yield.

IMPROVE WATER QUALITY

Less fertilizer means cleaner watersheds and drinking water since there is less leaching to pollute ground and surface water.

COMPLEMENT REGENERATIVE PRACTICES

When used with other practices that encourage an active soil microbiome and healthy soil, like cover-cropping and reduced till, SOURCE can aid in creating a more efficient soil system.

DECREASE GHG EMISSIONS

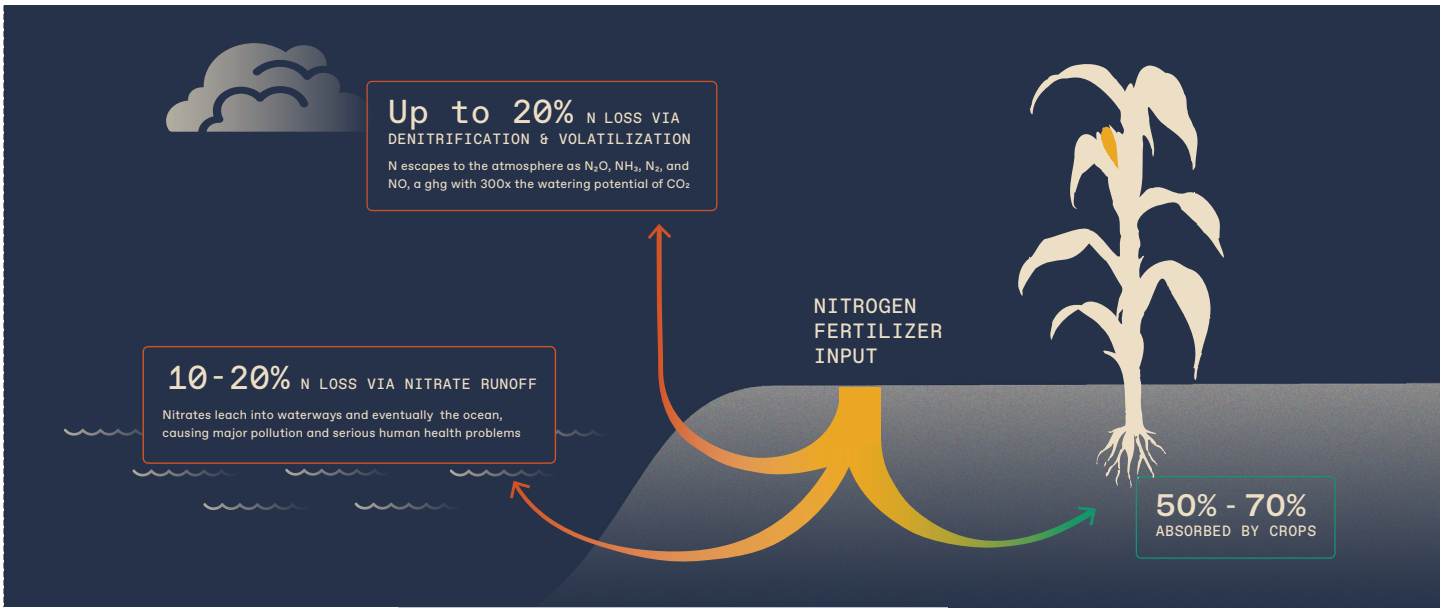
Less applied nitrogen fertilizer means that less nitrous oxide, an extremely potent GHG, is emitted paving the way for potential carbon credits.

source@sound.ag | www.sound.ag

Sound

SOURCE®

Nitrogen: Essential and Problematic



WATER POLLUTION

FRESHWATER NITRATE POLLUTION

In most fields, a portion of nitrogen fertilizer does not get absorbed by plants, resulting in nitrate runoff. This runoff can have adverse health effects for local communities. Nitrate runoff enters rivers, streams and groundwater, the same groundwater relied on for drinking water. A range of adverse health effects have been associated with elevated nitrate levels, including methemoglobinemia (blue baby syndrome) and various cancers.

OCEAN EUTROPHICATION

Excess nitrogen in waterways has extremely detrimental ecological effects. Most notably, the accumulation of nitrogen in waterways results in aquatic algal blooms and “dead zones,” areas where aquatic life cannot survive due to low oxygen levels caused by pollution. This is commonly observed in lakes and in oceans outside of river deltas, like the annual dead zone in the Gulf of Mexico.

GREEN HOUSE GAS EMISSIONS

FERTILIZER PRODUCTION

The production of nitrogen fertilizers is a carbon-intensive process. Because it requires a lot of energy to achieve the high pressures and temperatures needed to produce nitrogen fertilizer, an enormous amount of fossil fuels and natural gas is burned, which in turn emits a great deal of carbon dioxide. Globally, ammonia production results in 1-2% of all carbon dioxide emissions.

VOLATILISATION

When excess nitrogen goes unused in the soil, much of it is released into the atmosphere as nitrous oxide via a process called volatilization. With roughly 300 times the warming potential of carbon dioxide, nitrous oxide is an extremely potent GHG. According to the recent Inventory of U.S. Greenhouse Gas Emissions and Sinks EPA report, “Agricultural soils were the largest anthropogenic source of N2O emissions in 2020, accounting for 316.2 MMT CO2 Eq. (74.2 percent of N2O emissions) and 5.3 percent of total greenhouse gas emissions in the United States.