

ALFALFA'S ROLE IN SUSTAINABLE AGRICULTURE

Alfalfa has the potential to play a prominent role in agricultural sustainability. Below are a few key points as to how that is possible.

SOIL HEALTH BENEFITS

- Decreased need for soil cultivation, resulting in decreased erosion, improved soil aggregation, and increased carbon sequestration
 - » Increases resiliency to environmental stresses
- Deep taproots help increase water and nutrient infiltration, while promoting a healthy rhizosphere
- Help with soaking up excessive nutrients such as nitrates and other chemicals like heavy metals

WILDLIFE AND INSECT DIVERSIFICATION

- A single field of alfalfa can be home to hundreds of different species of arthropods
 - » Creates a stable environment, as well as food source and cover for insects
- Wildlife are often found in alfalfa fields, preying on smaller mammals found within its dense canopy or foraging on the alfalfa itself

PEST ROTATIONS

- Alfalfa can help break up pest cycles that would normally appear in continuous cropping systems
- Non-host crop to many of the insect pests and diseases that commonly afflict corn and soybeans
- Alters weed communities, suppressing those that are most commonly found in annual crops
- Often decreases need for herbicides, particularly after establishment

DECREASES SYNTHETIC FERTILIZER INPUTS

- Because alfalfa is a perennial legume, it creates a symbiosis with nitrogen-fixing *Rhizobia*
- Creates a nitrogen credit to be used for the next crop, decreasing need for additional nitrogen application
- Still requires other nutrients to be applied, such as phosphorous, potassium, and sulfur
- Usually estimate that it can provide on average 120-150 lbs nitrogen/ acre
 - » Dependent on age and health of stand, as well as soil type and environment

IMPORTANT ROLE IN LIVESTOCK DIETS

- The single most important forage legume for dairy cattle
- Can help maximize dairy production due to its high quality and palatability
- Has improved intake and digestion compared to many of its counterparts
- Lower risk of rumen acidosis compared to high-starch feeds like corn and corn silage

ECONOMIC SENSE

- Helps to diversify on-farm economic portfolio
- Higher yields are now achievable due to new technological advancements
- Undersander and Barnett (2008) found that due to decreased nitrogen needs and improved corn yields after alfalfa, producers can realize a net profit of almost \$33/ acre when alfalfa is included in short rotations with corn

HOW HARVXTRA® ALFALFA FITS INTO SUSTAINABILITY

- HarvXtra® Alfalfa technology provides farmers more options and flexibility compared to conventional alfalfa
- The ability for many to decrease an entire cutting can decrease harvest-associated costs, as well as decrease the amount of fuel and resources used in managing alfalfa
 - » Wheel traffic is also decreased, which improves overall health and productivity of stand
- The improved digestibility of HarvXtra® Alfalfa has the potential to improve overall on-farm profitability, whether it be due to higher forage quality resulting in higher hay value, or improved digestibility and intake by consuming livestock
- Yield potential can increase by up to 20% when extending harvest windows, improving overall profitability and production per acre