Feeding a Growing Population in a Changing Climate

Climate Change refers to significant, long-lasting changes in temperature, precipitation, wind patterns and other measures of climate. Greenhouse Gases, like carbon dioxide, methane and nitrous oxide, are emitted, in part, through human activities, like burning fossil fuels. They trap the Sun’s heat on Earth.

Great strides have been made to reduce the intensity of agriculture’s carbon footprint. Still, agriculture accounts for approximately 13 percent of global greenhouse gas emissions. To sustainably feed 9.6 billion people by 2050 while reducing emissions, we must work collectively to do even more.

That’s where carbon neutral crop production comes in. With the right products and practices, some crop production systems have the potential to absorb and store as much or more greenhouse gases than are emitted from the practices used to produce them. It means that farmers have been and will continue to be a positive force in the fight against climate change.

How We Grow Our Food Helps Tip the Scale: Carbon Neutral Crops

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Potential Impacts of Climate Change

Drought
Severe Weather
Rising Sea Levels
Pest Infestations
Compromised Harvests
Flooding

Carbon Neutral Crop Production

- Data-Enabled Precision Agriculture: Using data science and information technology to make better informed decisions about applying inputs like fertilizer, pesticides and irrigation water.
- Highly Productive Crops: Crops that produce more grain and plant material while absorbing more carbon per acre of land.
- Cover Crops: Crops grown to provide cover to farmland and prevent soil erosion while absorbing carbon between primary crop seasons.
- Biotech Plants: Enables carbon neutral crop production by allowing weeds to be more easily controlled with reduced tillage.
- Improved Plant Breeding: Rapid development of advanced plant varieties, which enable better harvests and more plant material production. This absorbs and stores more carbon per acre, while providing pest and drought tolerance.
- Crop Residue: Parts of the plant that are left on the field after harvest to return carbon to the soil while enhancing soil quality.
- Cover Crops: Crops grown to provide cover to farmland and prevent soil erosion while absorbing carbon between primary crop seasons.
- Reduced Tillage: Tilling disturbs the soil and releases carbon in the soil to the atmosphere. Minimal or no tillage helps protect soil structure and keeps carbon in the soil.

The dynamic duo of carbon neutral crop production: Plants absorb carbon and soil stores it.