



Caring for You and Your Farm®

**Summer Landowner Seminar
2024**

Myths in Agriculture



What Percent of U.S. Corn & Soy is Used for Biofuels?

- A. 60% or more
- B. 50%
- C. 40%
- D. 30%



Myth: The U.S. Burns Most of Our Grain Production for Fuel

- Why people believe this is true:
 - Surge of the U.S. ethanol & biofuels markets over the past several decades
 - Negative connotations with using food for fuel
- Other common claims:
 - Biofuels are not climate friendly
 - Corn & soybean prices are overly-dependent on biofuel demand; it is not sustainable long-term



Why This is a Myth

- Approximately 35-40% of U.S. corn goes to ethanol production
- Less than 10% of U.S. soybeans are used for biofuel production
- Biofuels lead to co-products used for livestock feed
 - Dried Distillers Grains (DDGs)
 - Soybean Meal



Why This is a Myth

- Corn ethanol is currently 40-50% less emissions-intensive than gasoline
- Biodiesel reduces GHG emissions by up to 85% compared to regular diesel
- Sustainable Aviation Fuel can reduce aviation emissions by over 75%

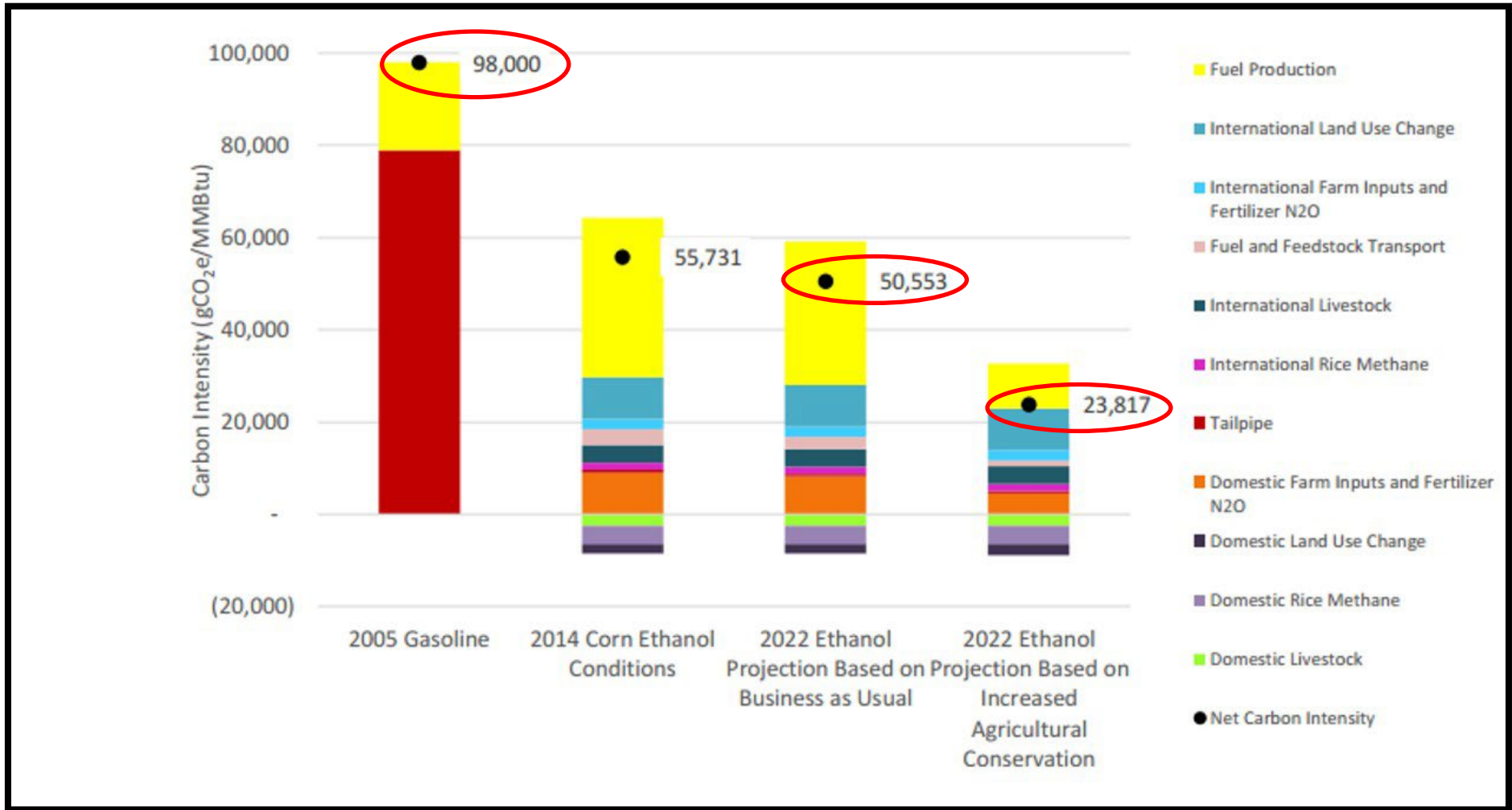


Sources: Harvard, Department of Energy, USDA

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Carbon Intensity of Ethanol



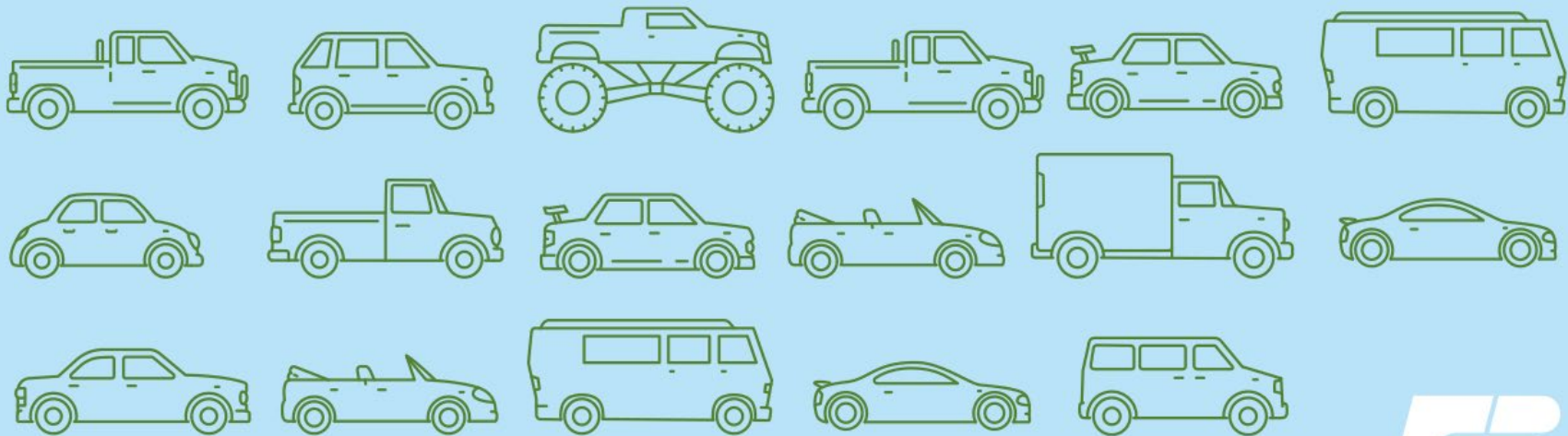
Source: USDA (2017)

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Why This is a Myth

Reduction of GHG emissions from
ETHANOL AND BIODIESEL
in 2022 is equal to
30 MILLION CARS off the road



Source: ERS, 2021



Source: U.S. Economic Research Service

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How Many Farm Operations are Corporate or "Factory" Farms?

- A. 75% or more
- B. 50% or more
- C. 25% or more
- D. Less than 10%



Myth: Corporate or "Factory Farms" are Taking Over Farm Ownership

- Why people believe this is true:
 - Farms are getting larger
 - CAFOs get labeled as factory farms
- Other common claims:
 - "Factory farms" are cruel to animals
 - Disregard to public health, environment and climate issues
 - Has broken our food system
 - Small operations don't have a chance to survive



Why This Is a Myth

- 96% of farms in the United States are Family Owned
 - 1,789,439 small family farms
 - 108,304 mid-size family farms
 - 52,592 large scale family farms
- 45% of farmland acres are still owned by small family farms



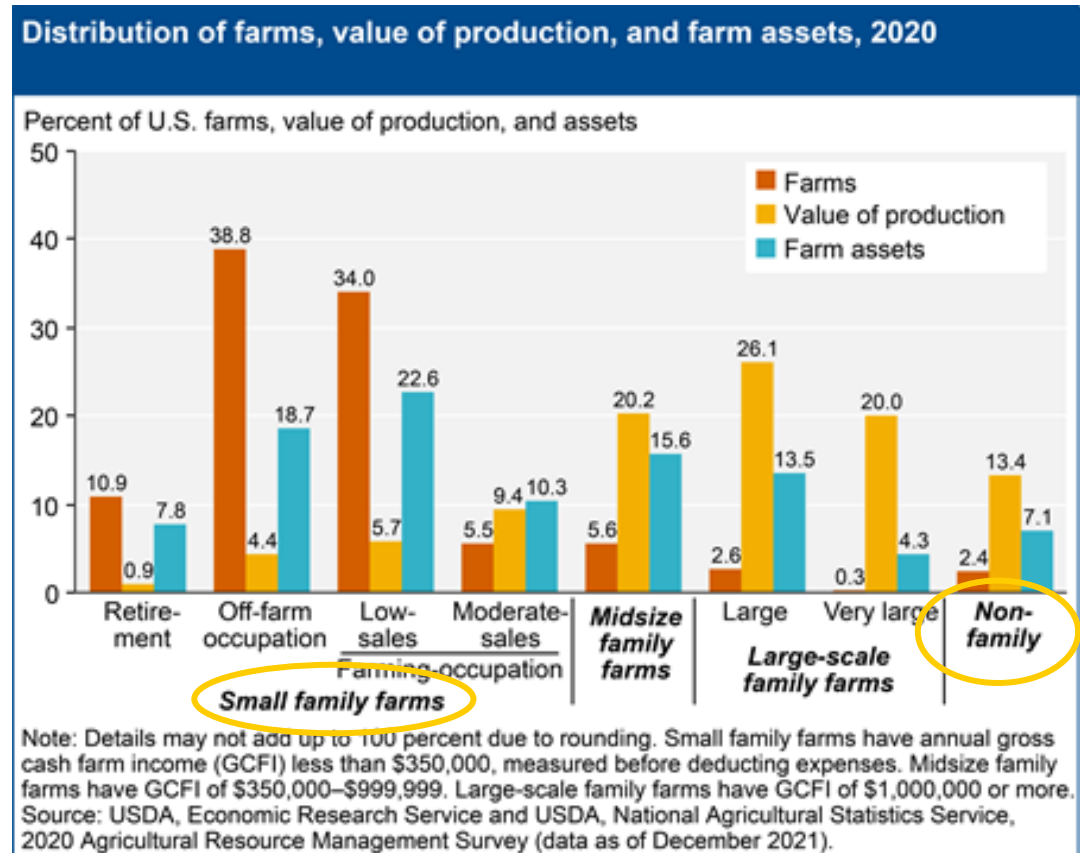
Source: USDA 2017 Census

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Why This Is a Myth

- Family farms range from small to large scale
- Assumption that Confined Animal Feeding Operations mean Corporate or "Factory" Farms
- Livestock are part of the five Soil Health principles
- Farm families are also consumers of these products



Source: USDA ERS

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Modern Ag Destroys Biodiversity

True or False

Biodiversity is defined as the variety of life in the world or in a particular habitat or ecosystem.



Myth: Modern Ag Destroys Biodiversity

- When people think of modern ag, they think of a corn/soybean rotation and turning it black
- They may think of harmful herbicides and insecticides being applied to the soil
- If that were the whole story, it certainly would be detrimental to biodiversity on farms
- In reality, there is so much more to the story that people are missing



Why This is a Myth

Biodiversity is important to agriculture for:

- Better soil health
- Pollinators and beneficial insects
- Genetic diversity of crops and livestock to sustain production levels

All these things are essential for farms to stay viable and maintain their productivity



Why This is a Myth

What are farmers doing to enhance biodiversity?

- Cover crops
- Seed traits for targeted insect control
- Conservation tillage or no-till practices
- Precision farming technology
- Filter strips, buffers, CRP



Which type of farming is better for the environment?

- A) Conventional Tillage B) No-Till
C) Organic D) Livestock Farms



Myth: Organic farming is better for the environment

- Why people believe this to be true
 - Less herbicides or pesticides being applied
 - Reduced fertilizer or less synthetic fertilizers
- Other common claims:
 - Builds soil health
 - Sequesters carbon
 - Fights the effects of Climate Change
 - Boosts biodiversity
 - Supports water conservation



Source:

www.Hertz.ag



Why This is a Myth

While organic farming can provide many benefits, it is not always better for the environment.

- Organic farming requires more intense tillage
- Tillage destroys soil structure, reduces water infiltration, and increases the potential for erosion
- Opening the soil releases carbon being held in the soil, while burning larger amounts of diesel fuel
- There are pesticides approved for organic farming



Source:

www.Hertz.ag



Why This is a Myth

- Crop rotation and cover crops boost biodiversity in any system
- No-till farming helps earthworms and many other beneficial soil organisms to thrive
- Filter strips, waterways, and drainage systems are used in all types of farming to filter nutrients and stop erosion
- Organic farming requires a larger footprint to produce the same yields as traditional farming



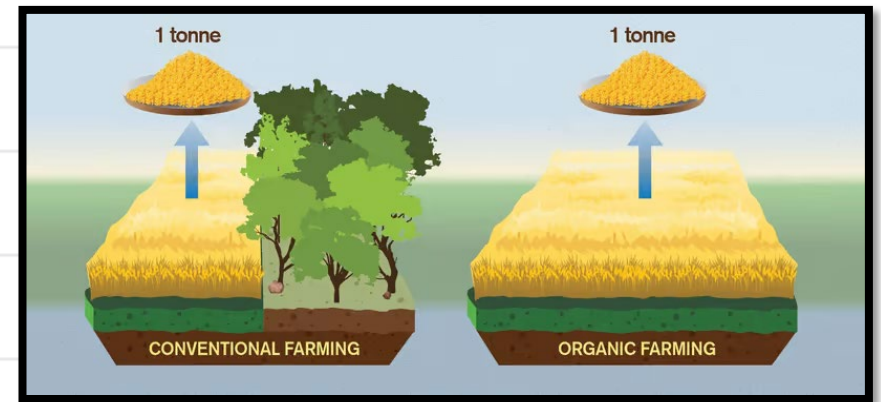
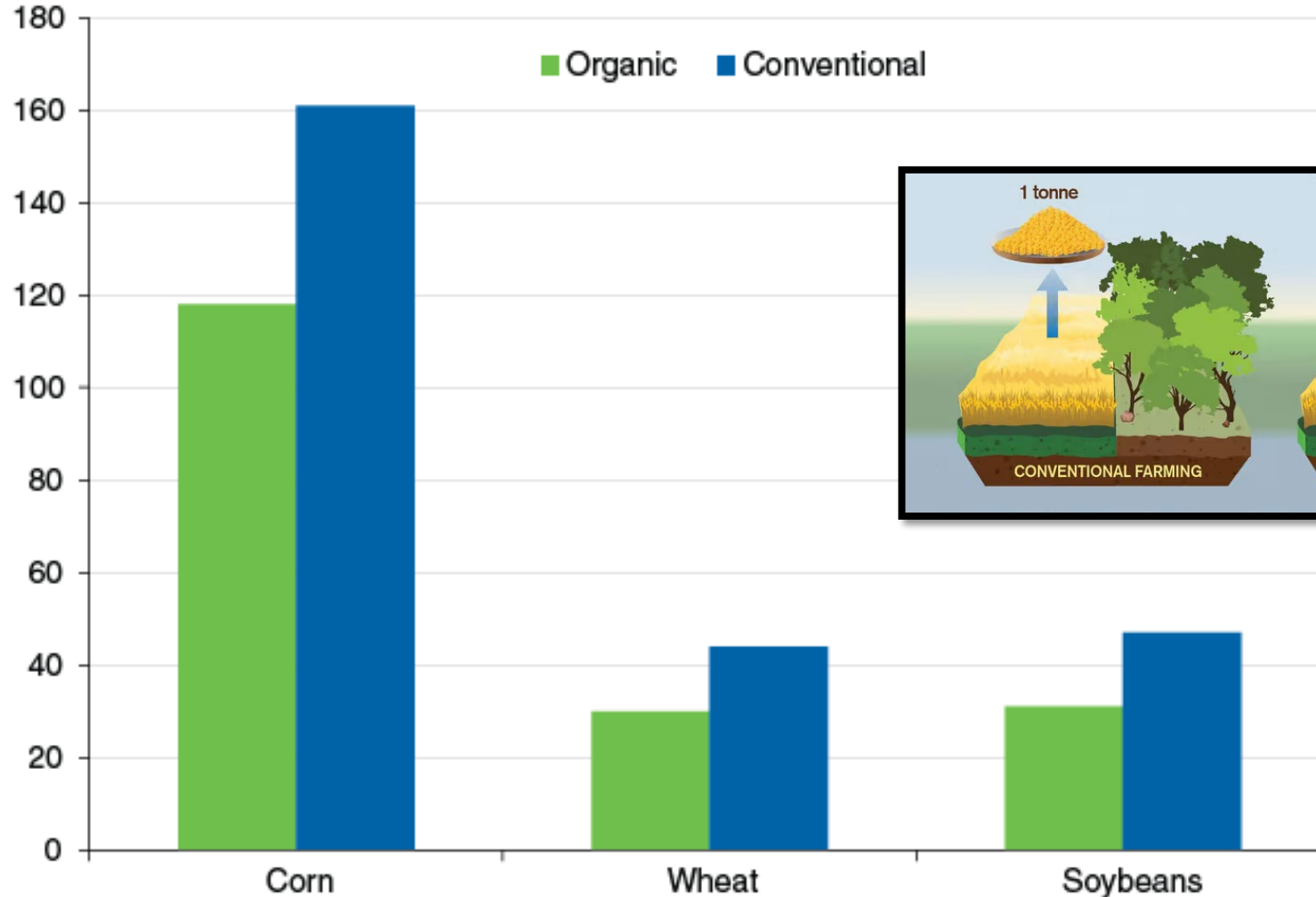
Source:

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Organic vs. Conventional

Bushels per acre



Source: USDA Crop Production Survey

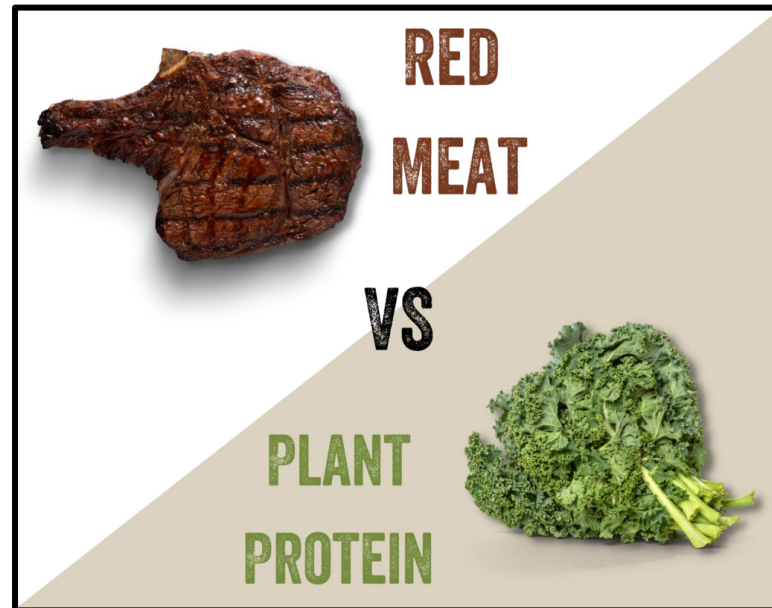
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Will Plant Based Meat Replace Livestock?

A. Yes

B. No



Myth: Plant Based Meat Will Replace Livestock

- Why people believe this is true:
 - People have started shifting their diets to plant based products
 - Livestock are viewed as large contributors to Climate Change
- Other common claims:
 - Plant Based Meat is healthier
 - Antibiotics and Hormones are found in animal proteins
 - Livestock cruelty



Why This Is a Myth

Plant Based Meat Ingredients

- Water
- Pea protein
- Expeller-pressed canola oil
- Refined coconut oil
- Rice protein
- Natural flavors
- Dried yeast
- Cocoa butter
- Methylcellulose
- Potato starch
- Salt
- Potassium chloride
- Beet powder color
- Apple extract
- Pomegranate concentrate
- Sunflower lecithin
- Vinegar
- Lemon juice concentrate
- Zinc sulfate
- Niacinamide (vitamin B3)
- Pyridoxine hydrochloride (vitamin B6)
- Cyanocobalamin (vitamin B12)
- Calcium pantothenate

Animal Protein Ingredients

- Ground beef, pork, or chicken, etc.



Why This Is a Myth

- Hormones can be found in many types of foods
- Antibiotics have withdrawal times prior to slaughter
- People have free choice, and both options have their place within the market

TABLE 1. ESTROGENIC ACTIVITY OF COMMON FOODS (NG/3 OZ SERVING)¹

Food	Estrogenic Activity
Soy flour (defatted)	128,423,201
Tofu	19,306,004
Pinto beans	153,087
White bread	51,029
Peanuts	17,010
Eggs	94
Milk	5.4
Beef from implanted steer	1.2
Beef from non-implanted steer	0.85

¹Units are nanograms of estrone plus estradiol for animal products and isoflavins for plant products per 3 oz of food.

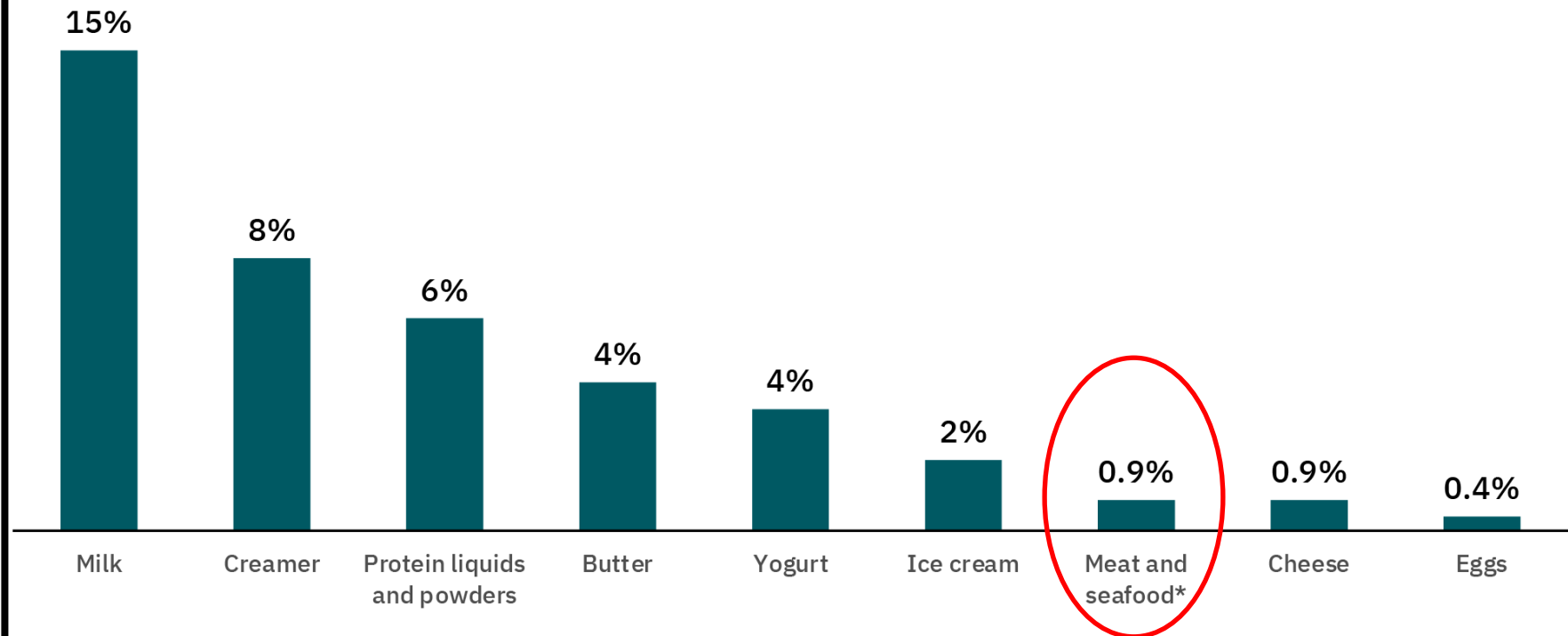
Hoffman and Eversol (1986), Hartman et al. (1998), Shore and Shemesh (2003), USDA-ARS (2002). Adapted from: Loy, 2011



Why This Is a Myth

Plant-based category dollar share of total respective category

2023



Sales data note: The data presented in this graph is based on custom GFI and PBFA plant-based categories that were created by refining standard SPINS categories. Due to the custom nature of these categories, the presented data will not align with standard SPINS categories. *SPINS does not report non-UPC animal-based meat counter sales, only UPC packaged meat sales. To calculate the plant-based meat share of the total meat category, dollar and unit volume assumptions for non-UPC animal-based meat counter sales are added to SPINS UPC animal-based meat sales.

Source: Total market = SPINS Natural Supermarket Channel + SPINS Conventional Multi Outlet Channel + SPINS Convenience Channel
(powered by Circana) | 52 Weeks Ending 12-3-2023

 **SPINS**  / Good Food Institute



Farm Management Companies Raise Rents to Cover Fees

Fact or Myth?



Why This Is a Myth

- The focus is on helping the landowner achieve their goals and objectives
- Farm managers have firsthand knowledge of the market based on:
 - Soil types and productivity ratings
 - Commodity prices
 - Crop inputs
- In many cases, farms are reintroduced to the market
- The farm doesn't always go to the highest bidder



Your goals help determine which lease type is the best fit for your situation.

Lease comparisons put numbers to each lease type and help the landowner make informed decisions.

2024 LEASE COMPARISON

307.9 Acres m/l

ASSUMPTIONS:

Owner's Share on Modified CS 80%
 Cropland Acres 307.0 Corn Base 0.0 Bean Base 0.0

CROP	ACRES	YIELD	\$/BU
Corn	200.0	235	\$5.25
Soybeans	107.0	68	\$12.50

Cash Rent/Tillable Acre \$375 Buildings \$0 CRP \$0

INCOME

	CUSTOM	MODIFIED CROP SHARE	50/50 CROP SHARE	CASH RENT
INCOME				
\$/Acre				
Corn	1234	246,750	197,400	123,375
Soybeans	850	90,950	72,760	45,475
Government Payments	0	0	0	0
Cash Rent - Land	375			115,125
Cash Rent - Buildings	0	0	0	0
CRP	0	0	0	0
TOTAL INCOME	\$337,700	\$270,160	\$168,850	\$115,125

EXPENSES

	CUSTOM	MODIFIED CROP SHARE	50/50 CROP SHARE	CASH RENT
EXPENSES				
\$/Acre				
Com - Seed	120	24,000	24,000	12,000
Fertilizer	255	51,000	51,000	25,500
Hail & Crop Ins.	25	5,000	4,000	2,500
Dry and Store	25	5,000	4,000	2,500
Custom Hire	140	28,000	0	0
Pesticides	90	18,000	18,000	6,000
Soybeans- Seed	65	6,955	6,955	3,478
Fertilizer	80	8,560	8,560	4,280
Pesticides	80	8,560	8,560	2,853
Custom Hire	115	12,305	0	0
Hail & Crop Ins.	20	2,140	1,712	1,070
Storage	5	535	428	268
Property Taxes		18,132	18,132	18,132
Repairs	0	0	0	0
Management Fees		20,262	18,911	11,820
Int. on Operating @ 5%	0.00	0	0	0
Insurance - Liability	250	250	250	250
- Property	0	0	0	0
TOTAL EXPENSES	\$208,699	\$164,508	\$90,650	\$26,441

NET INCOME

\$129,001 \$105,652 \$78,200 \$88,684

NET INCOME/TILLABLE ACRE

\$420.20 \$344.14 \$254.72 \$288.87



There's More To It

It's not just about the cash rent...

- Conservation projects and programs
- Ensure soil fertility is maintained
- Grain marketing
- Farm drainage and tiling projects
- Maintaining and improving your asset
- Complete farm accounting
- Succession Planning



What Foreign Country Owns the Most U.S. Farmland?

- A) Mexico
- B) China
- C) Netherlands
- D) Canada



Myth: China is Buying a Large Percentage of U.S. Farmland

- Why people believe this to be true:
 - Reports in the media of Chinese purchases of land
 - Political positioning to restrict foreign land ownership
- Other common claims:
 - Concerns that China is attempting to control the U.S. food supply or own land for hostile reasons
 - Foreign countries own a significant amount of productive U.S. farmland
 - The amount of foreign investment in U.S. farmland has risen significantly in recent years



Why This is a Myth

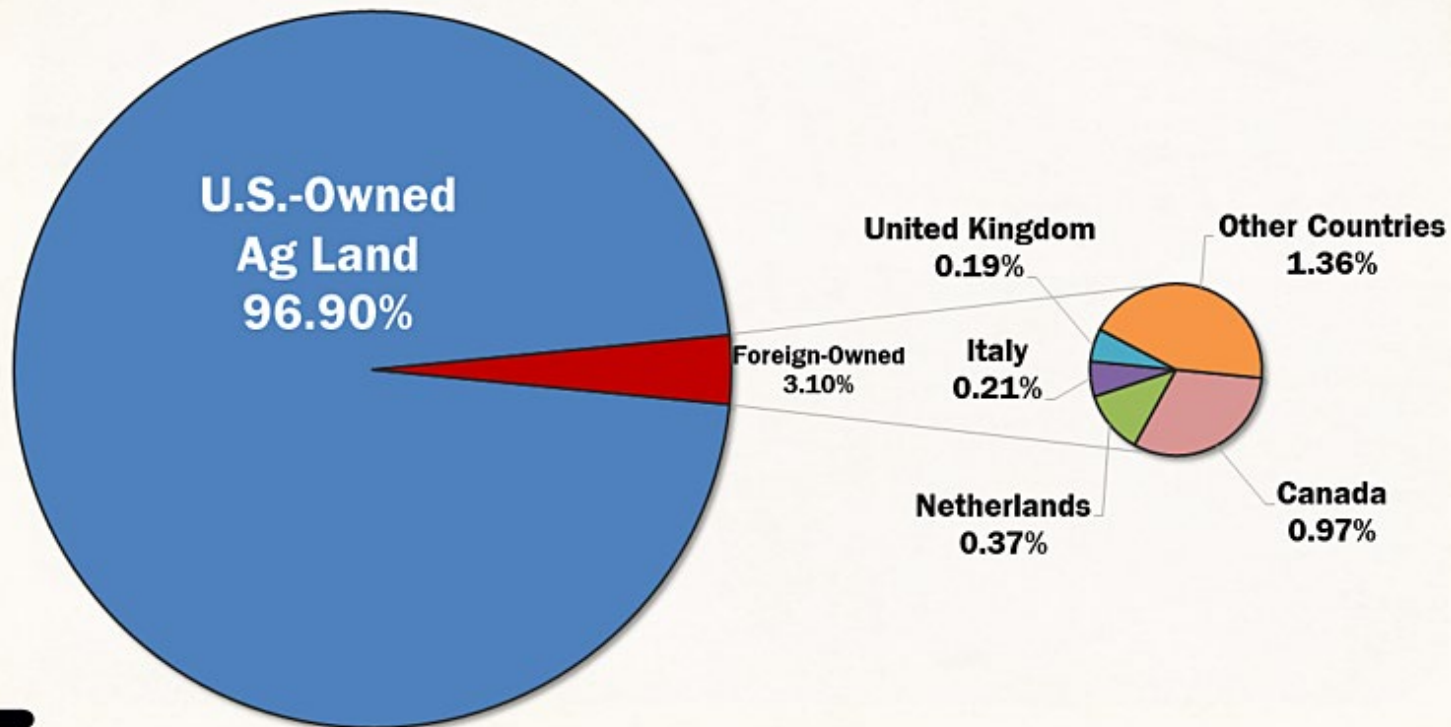
- Only 3.1% of all U.S. ag land is foreign-owned
 - 40.83 million acres out of 1.3 billion total acres
 - Of that, China owns 0.03%
- The majority of foreign-owned ag land is forestland (48%)
- Most foreign-owned ag land is outside of the Midwest
 - Top 3 States: Texas, Maine, and Colorado
- Foreign ag land ownership up by just 2.1% since 1981
 - Corresponds with overall increased interest in farmland as an investment



Why This is a Myth

FIGURE 1: U.S. AGRICULTURAL LAND BY ORIGIN OF OWNER

3.1% of U.S. ag land is foreign owned as of 2021 (40.83 million acres)



AMERICAN FARM BUREAU FEDERATION*

Source: Farm Bureau Calculations, USDA FAS



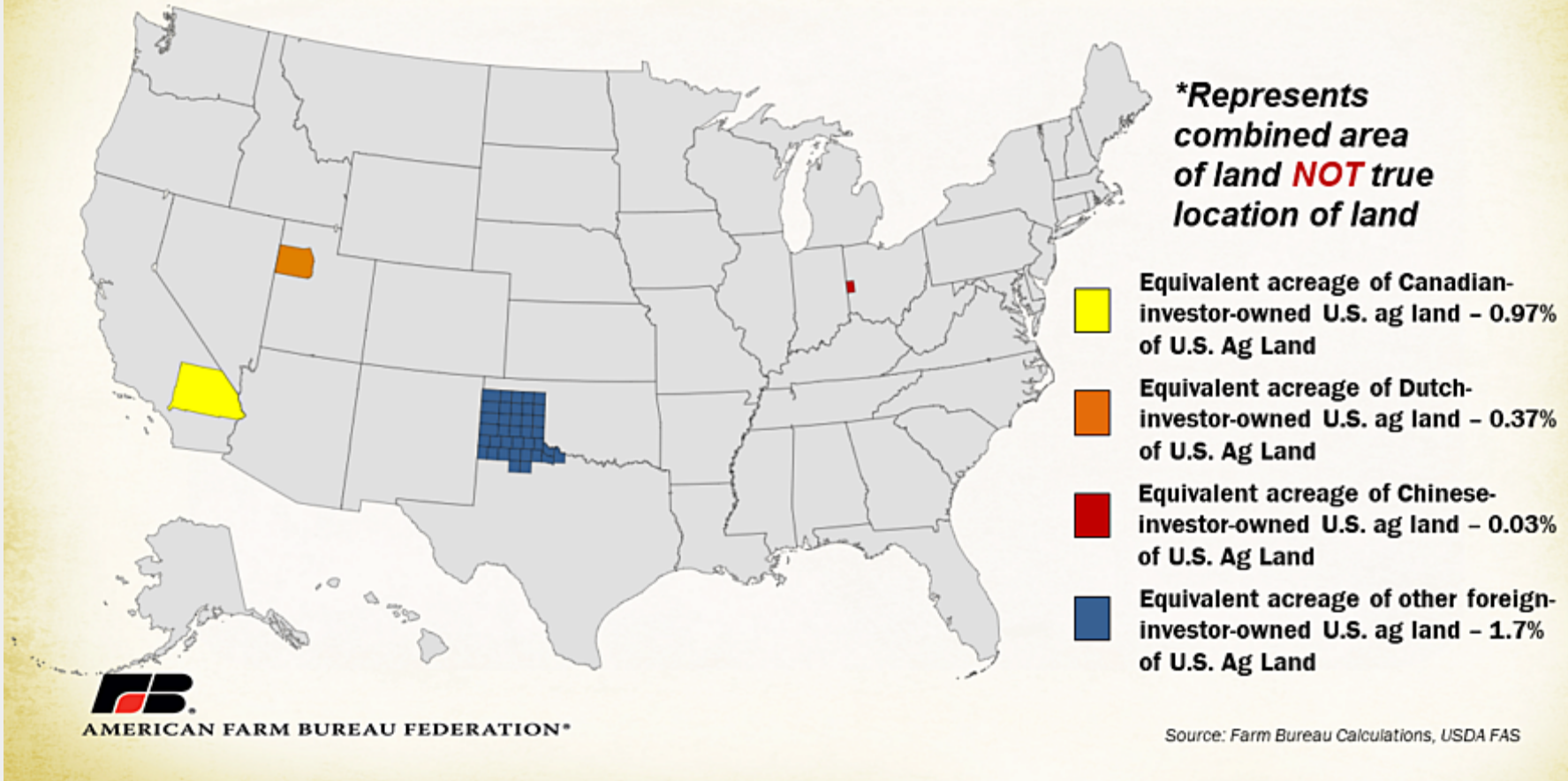
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Why This is a Myth

FIGURE 7: VISUALIZING EQUIVALENTS OF FOREIGN-INVESTOR-HELD U.S. AG LAND

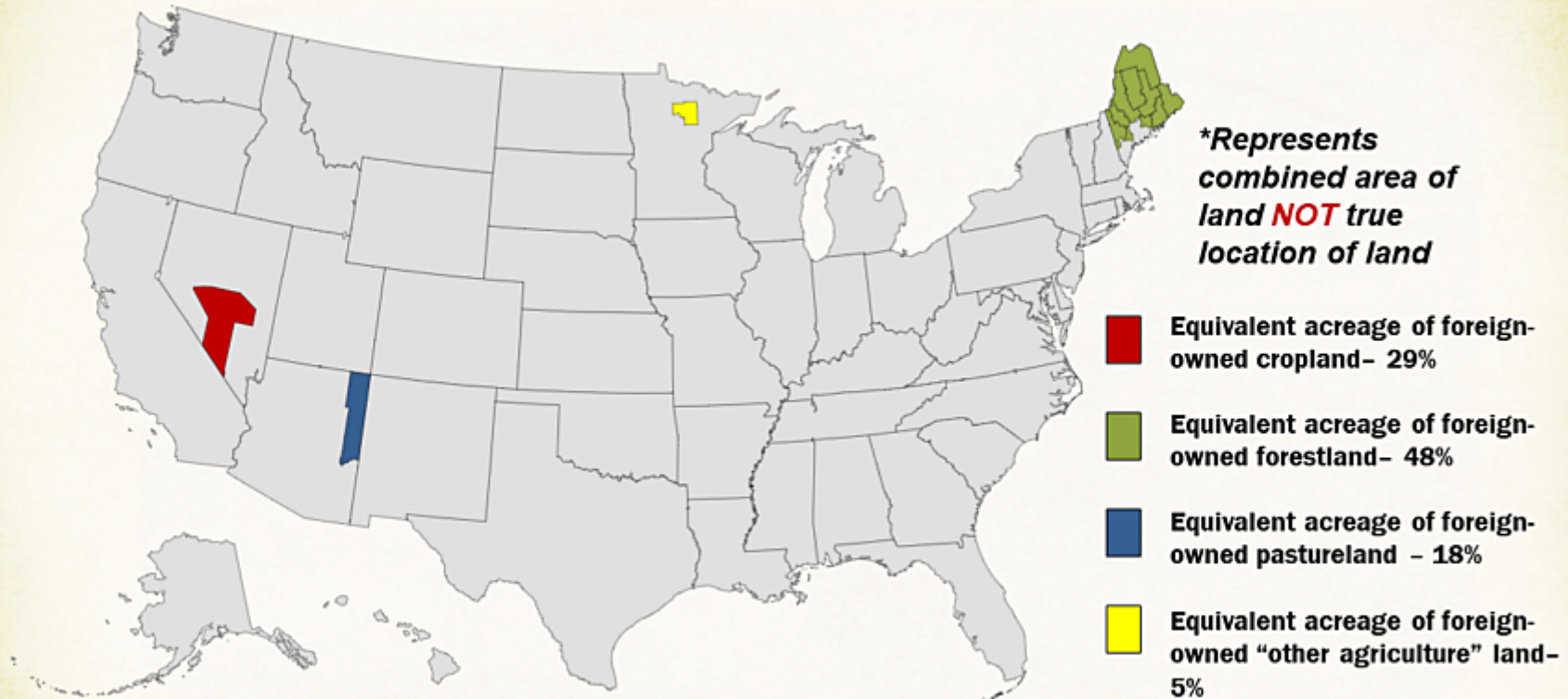
Shaded counties symbolize equivalent acreage of foreign owned U.S. ag land by nationality of foreign investor.



Why This is a Myth

FIGURE 5: VISUALIZING EQUIVALENTS OF FOREIGN-INVESTOR-HELD U.S. AG LAND

Shaded counties symbolize equivalent acreage of foreign owned U.S. ag land by agricultural land type




AMERICAN FARM BUREAU FEDERATION*

Source: Farm Bureau Calculations, USDA FAS



Irrigation is Inefficient

Fact or Myth?



Low Efficiency



Slightly More Efficient



More Efficient



Inline Emitters



Soil Moisture Monitoring



Efficiency Gains

- Improving from flood irrigation (least efficient) to buried dripline (most efficient)
 - 70% less water needed with drip vs flood
- Technology continues to improve
 - Water used to irrigate corn is down 18% since 1998
- Drought tolerant crops are being bred to use water more efficiently
- Reclaiming excess water in holding ponds to reuse is becoming more common



Tile Drainage Increases Flooding



Tile Drainage is Bad for the Environment



Common Myths about Drainage

- Moves water to rivers faster
- Pulls all the water out of the soil
- Dumps fertilizer in surface water
- Creates dead zone in the Gulf



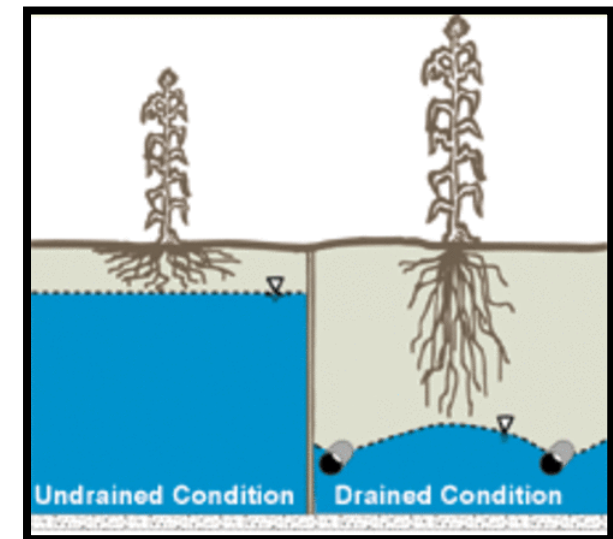
Facts About Tile

- Water moves through soil profile by gravity to tile.
- Only excess water moves into tile – Spring of 2024 was great example it took a lot of rain to soak up soil before tile ran.
- Opens pore space to air - improving root growth and plant health
- Opens space for next rain event - allowing more water to move under the ground rather than eroding the surface



Advantages of Tile

- Reduced erosion
- Enhanced soil aeration and water infiltration
- Improved soil structure
- Higher, more consistent yields
- Less plant stress
- Improved planting and harvest conditions
- Increased land values





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