



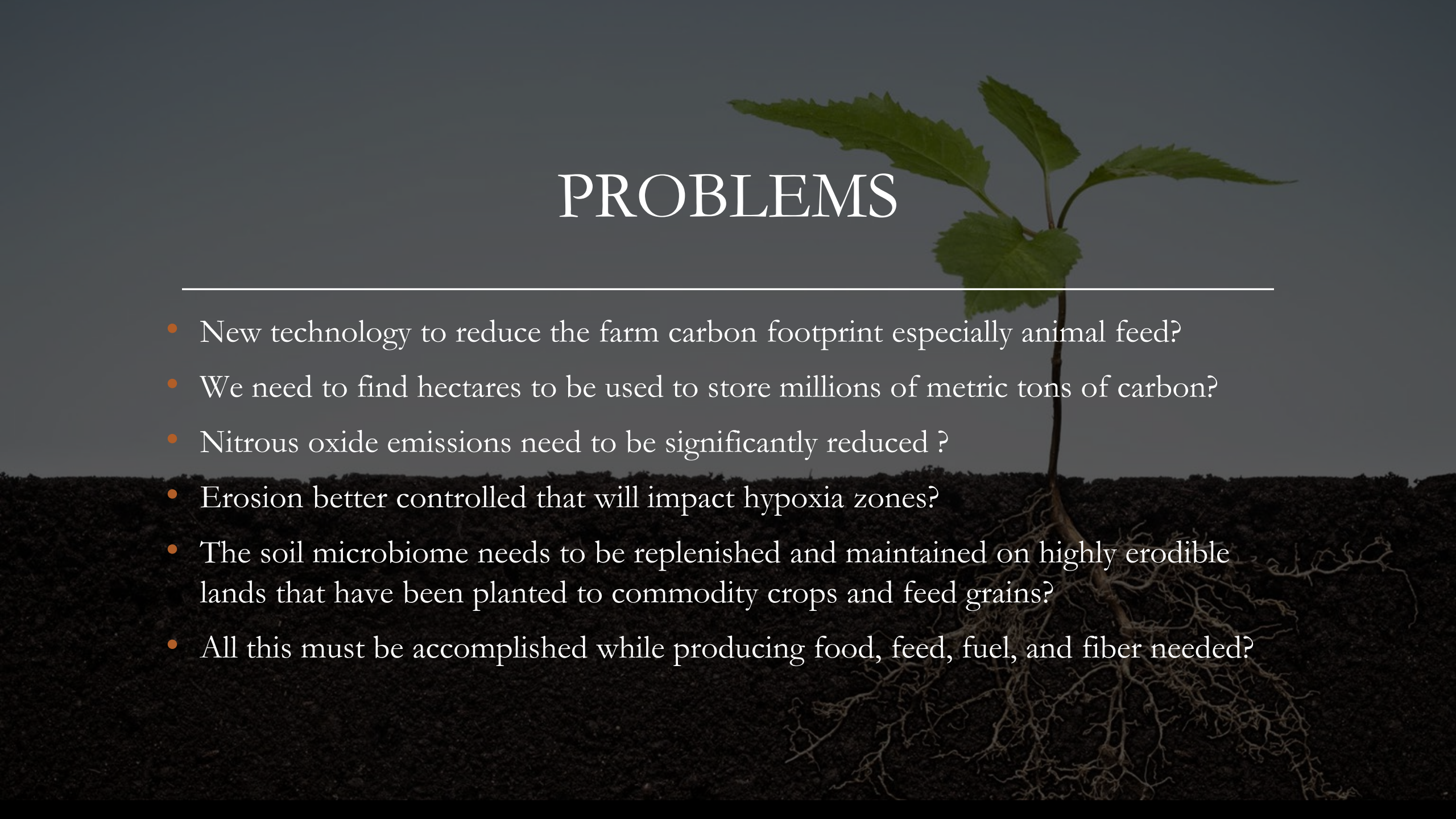
The New Corn

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PROBLEMS



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- New technology to reduce the farm carbon footprint especially animal feed?
 - We need to find hectares to be used to store millions of metric tons of carbon?
 - Nitrous oxide emissions need to be significantly reduced ?
 - Erosion better controlled that will impact hypoxia zones?
 - The soil microbiome needs to be replenished and maintained on highly erodible lands that have been planted to commodity crops and feed grains?
 - All this must be accomplished while producing food, feed, fuel, and fiber needed?

Climate Crisis

- According to the Intergovernmental Panel on Climate Change, “carbon sequestration will be a critical strategy to return atmospheric carbon to safe levels.”
- In another report the IPCC stated a shift from annual plants to perennials for food and feed is needed to reduce erosion, fertilizer runoff, and improve carbon sequestration.
- Plants absorb carbon; and the best plants to store carbon are Trees.
- The annual production of corn is not carbon neutral, it produces more GHG's and sequesters little carbon in the soil.
- Twenty-seven million acres of corn are grown on highly erodible land.
- Let's plant trees there instead.

A Challenge to Academic Agricultural Research

- Can Oak trees provide a feed substitute for corn?





THE NEW CORN

- Imagine an orchard, not a forest, of Oak Trees (*Quercus* sp.)
- Each tree is accessible to treat, care for, and harvest acorns.
- With further research & development Acorns could provide a valuable source of feed for livestock from pigs to cattle.
- This idea is not about diversification, it is about developing a potential crop that can mitigate several problems of climate while maintaining production of feed and food.

INCOME STREAMS



Yields Vs. Corn:



Using the same crop yield as on the Price sheet: 178 average bushels/acre corn or approximate 5.0 US tons/a



$178 \times \$5.00 = \$890.00/\text{acre gross}$



Using the same trees/acre in the Oak financial (185) each tree would need to produce 54.0 lbs. of acorns/acre to equal yield by weight or \$4.81 value per tree for equivalent income.

With an annual reduction in production costs of \$112.00/a/yr (ISU)

INCOME STREAMS



Private & Government support programs Vs. Corn:



Carbon sequestration via oak trees would have significantly greater support from both private banks and government programs than corn.



No-till, cover crops destroyed on an annual basis provide little to no carbon sequestration.



Middle rows would be planted to perennial cover crops adding nitrogen to the soil and yielding further support payments.

Acorn Nuts

Estimates based on 7 M/A/yr

Estimates we have determined for carbon sequestration using oak hardwoods range between 1 – 4 MtCo₂/acre per year. The larger number is for acreage taken out of crop production. This equates to Carbon sequestration of 7 – 28 equivalent MtCo₂/yr.

N₂O emission from corn fields in the US is 0.33 MtCo₂ CO₂ equivalents per acre/yr. (NIH). This would equate to reductions of another 2.3 MtCo₂ equivalents per year.

Methane feed reduction potentials are unknown and need extensive study

QUERCUS AGROFORESTRY, INC.

- CRISPR gene editing technology could reduce toxic levels of polyphenolic compounds in Oak trees and harvested acorn nuts.
- This will create unique Oak tree varieties, with protected Utility Patents, suitable for domestic livestock feed, acorn nut flour, and other potential uses.

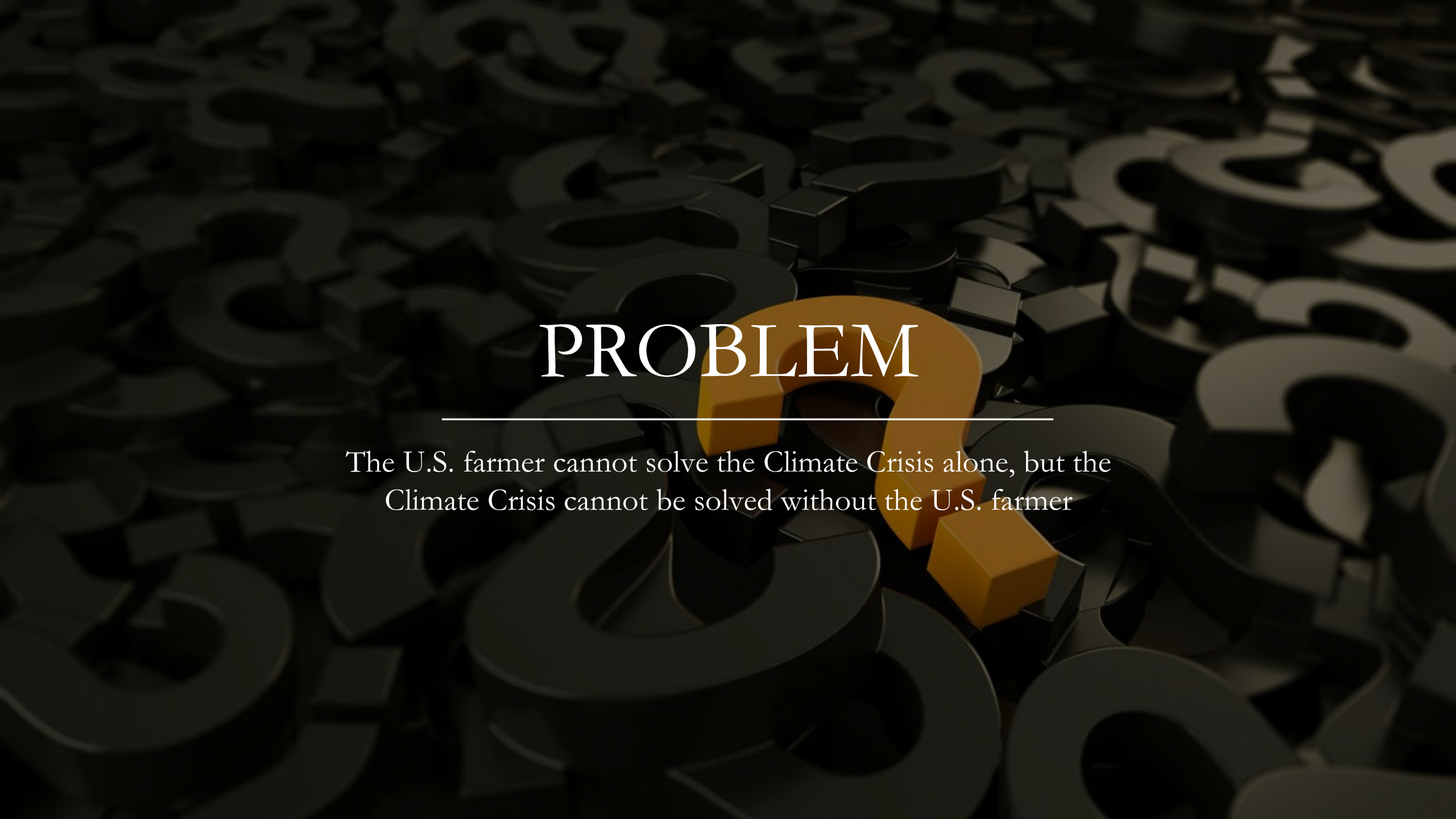


Acorn Nuts

Nutritional Value



- A one ounce serving of dried acorn nuts contains 144 calories, 7% protein, 50% carbs, 29% fat, and 14% fiber.
- In addition, it contains Vitamin E, A, & B6 with iron and potassium.
- A serving of field corn contains 110 calories, the same 7% protein & 51% carbs, but only 2.5% fat, and 3 % fiber.
- Field corn contains virtually no vitamins and 11% riboflavin.



PROBLEM

The U.S. farmer cannot solve the Climate Crisis alone, but the
Climate Crisis cannot be solved without the U.S. farmer

THE NEW CORN –
ACORN NUTS

- JOIN US
CHANGING
AGRICULTURE
- THANK YOU

