

E-2 National Webinar Precision Agriculture

Low Carbon Crops and Climate Smart Cultivation

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Precision Farming...

- ▶ It is basically producing more with less by utilizing modern technology

Technology...

- ▶ GPS Guidance System
 - Guides a moving vehicle within a designated area
- ▶ Data Collection
 - Field maps, yield maps, soil maps, moisture, topography and etc.
- ▶ Variable Rate Technology - 2.5 acre grids
 - Fertilizer, seed population, seed variety, pesticides, herbicides, fungicides and etc.

Low Carbon Farming...

- ▶ Produce as many food calories and/or fuel BTU's per acre with the lowest carbon foot-print possible.

Low Carbon Farming Practices...

- ▶ No Till
- ▶ Reduced Tillage
- ▶ Cover Crops
- ▶ Nutrient Timing
- ▶ Nutrient Placement
- ▶ Crop Rotation
- ▶ Utilizing Livestock Waste (Manure)
- ▶ Manure Management
- ▶ Soil Testing and Verification

Key Drivers...

- ▶ Data Collection
- ▶ Improve Efficiency and Profitability
- ▶ Improve Soil Health
- ▶ Access to Emerging Markets (California Low Carbon Fuel Standard)
- ▶ Anticipate Possible Carbon Trading Systems

Example...

1 Acre=200 bushel Corn

200 bushel Corn= 560 gallon ethanol

3,400 lb DDGs-High Protein Animal Feed

200 lb Corn Oil=25 Gallons Bio-Diesel

5.6 Tons Stover $\frac{1}{2}$ or 2.8 Ton For Cellulostic Ethanol

28. X 70 Gal/ton=196 gallons

Results 756 Gallon Ethanol 3,400 lbs feed and 25 Gallons Bio-Diesel

University of Minnesota Study paid by Coca Cola concluded that with this technology and practices this corn field can actually be a carbon sink.