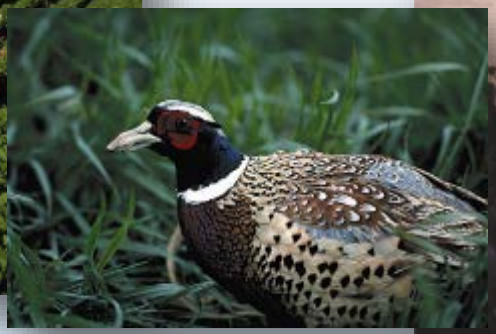
Conservation Technology Information Center



CTIC champions, promotes and provides information on technologies and sustainable agricultural systems that conserve and enhance soil, water, air and wildlife resources and are productive and profitable.

A Public/Private Partnership

Members

- **Corporations**, **Institutions** (media, commodity groups, conservation organizations, associations), **Individuals**

Advisors & Partners

- Federal agencies, universities, extension, research institutions

What We Do

Connect

Inform

Champion

CONSERVATION *IN ACTION* TOURS

Annual tour showcasing innovative, successful conservation farmers

2008 – Indiana
2009 – Illinois
2010 – Virginia
2011 – Ohio
2012 – Mississippi Delta
2013 – Indian Creek watershed, Illinois
2014 – Everglades Agricultural Area, Florida
2015 – Minnesota

www.ctic.org/CIATours/

Tour Leader

Mosaic

BAYER

Bayer CropScience

JOHN DEERE

SOIL HEALTH PARTNERSHIP

MONSANTO

Simplot

The Nature Conservancy

Protecting nature. Preserving life.

Agri Drain CORPORATION

syngenta

AGRICULTURAL RETAILERS ASSOCIATION

www.ctic.org/CIATours/

CTIC

The Fertilizer Institute

Nourish, Replenish, Grow

CERTIFIED CROP ADVISER

With pioneer spirit and innovative technology, Idaho farmers optimize the use of precious irrigation water, protect air quality and manage nutrients wisely to sustainably produce more than 180 crops.

Idaho's value chain ranges from raw commodities to fully processed food and extends from a thriving Buy/Local/Idaho preferred to a comprehensive global export market!

Irrigation

- “If it’s green, it’s watered.”

www.ctic.org/CIATours/

Soil Health

- Managing roots
- Soil biology

www.ctic.org/CIATours/

Minimizing Disturbance

- No-till & minimum till on dryland

www.ctic.org/CIATours/

Residue Management

www.ctic.org/CIATours/

Dixon Farms

- Canal water delivery system
- Snowpack estimates
- Irrigation systems

www.ctic.org/CIATours/

Dixon Farms

- Semi-permanent drip irrigation in mint
- Collaboration with equipment manufactures
- Persistence in implementing conservation

www.ctic.org/CIATours/

M&M Feedlot

- Air quality: Ammonia permit by rule system

www.ctic.org/CIATours/

M&M Feedlot

- Nutrient Management: Composting system

www.ctic.org/CIATours/

M&M Feedlot

www.ctic.org/CIATours/

M&M Feedlot

- Water Management: Floodplains & constructed wetlands

www.ctic.org/CIATours/

- Bayer CropScience's North American headquarters for seed production

www.ctic.org/CIATours/

Arena Valley Farm

- Soil Conservation: Producing potatoes & preserving soil health
- Crop rotations, equipment and cover crops

www.ctic.org/CIATours/

Arena Valley Farm

Potato Research Plots:

- Nitrogen efficiency
- Variety development
- Biological pest control
- Following the 4Rs of Nutrient Stewardship on a large scale

www.ctic.org/CIATours/

Arena Valley Farm

- Potato harvest demonstration

www.ctic.org/CIATours/

McIntrye Farm

- Soil Health: Cover crops & grazing
- Soil Pit
- Rainfall simulator

www.ctic.org/CIATours/

Mother nature begins the soil healing process

McIntyre Farms manages for soil health by following 5 basic principals

1. Minimize soil disturbance
2. Maximize diversity of plants in rotation / cover crops
3. Keep living roots in the soil as much as possible
4. Keep the soil covered
5. Utilization of animals to process residue as often as possible

Minimize Soil Disturbance

- Three Types of Disturbance
  - Physical (Tillage, Compaction)
  - Chemical (Fertilizer, Pesticides, Herbicides, Fungicides)
  - Biological (Overgrazing)
- Our soil is a Biology Lab not a Chemistry Set

What can we Influence on our Farms

- Soil Organic Matter
- Soil Structure
- Infiltration rate
- Nutrient and water holding capacity & availability

Diversity Above Ground

- Look outside the box of what has been normal and comfortable for you
- Some have great rotations but we can all improve and try other things
- If we do not fail at least once in a season we have not tried hard enough
- Diversity brings resilience to your Soil and to your Finances
- McIntyre Farms Rotation ex.

  Alfalfa 5y – Cover crop – Corn – Wheat – Cover crop – Peas.

  Alfalfa 5y – Cover crop - Corn – Turnip Seed – Cover crop – Peas – Wheat

Living Roots ALL Year Long

- Lengthen Rotation
  - Add different crop types- corn, millet. . .
  - Cover crop after harvest
- Select Shorter Season Varieties
  - Choose 10 day short season corn then you currently plant
  - Only need 6 - 8 weeks to provide benefit
- Interseed into Growing Crops
  - Planting cover crop before harvesting of cash crop
  - Cover crop cocktail mixes will help advance life in the soil as many years as the species in the mix

Cover Crops

Inter seeded Cover Crop into Established Pasture

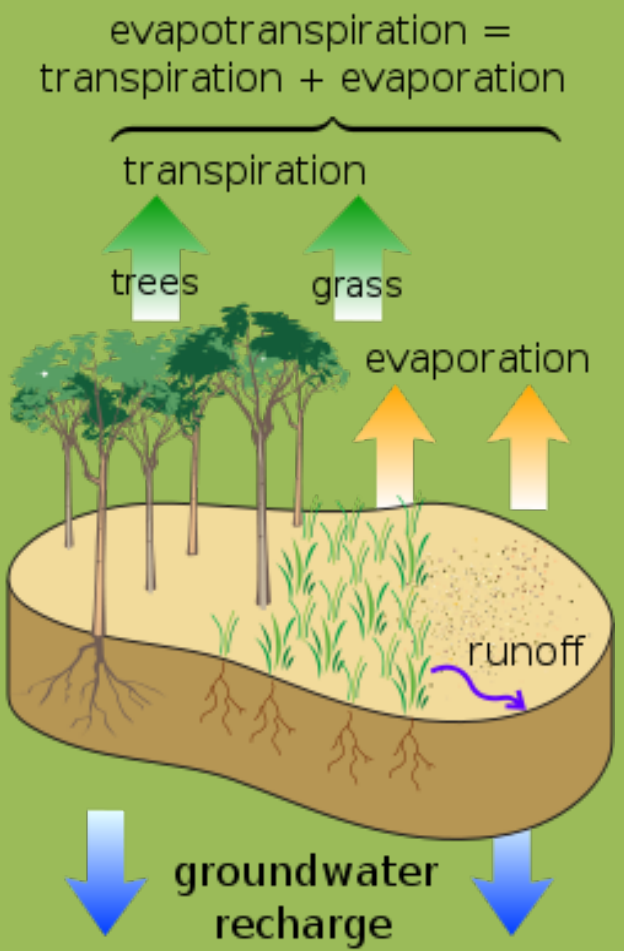
Owl Boxes

Soil Armor

Nothing left

Using Cattle to Incorporate. We want it dead or live.

Evapotranspiration (ET)



McIntyre Farms: 2013

Marsing, ID

Cover crop mix: Radish, Turnip, Sudangrass, Millet, Buckwheat, Oats, Soybean, Rape, volunteer wheat

Planted: 8/10/2013. Grazed beginning on 10-17-13,

End grazed: Dec 17, 2013; grazed for 61 days

No till drilled cover crop mix into winter wheat stubble

Clipped 13,684 lbs DM/ ac

23.1 % DM

John Deere 1560 Drill

300 head of bred range cows on 3-acre paddocks per day
Stock density: ~106,000 lbs / acre

Previous crop: No till winter wheat
Planned crops spring 2014: grain corn

Ungrazed vs Grazed

Managed grazing improves nutrient cycling by proper distribution of manure and urine

72% forage utilization

April 29, 2014 evaluating soil of the cover crop field:

Worms underneath decomposing cow pie.

165 worms per cubic foot. 7.2 million worms per acre.


No-Till planted Corn 95 day length DeKalb May 5, 2014
Harvested October 10, 2014 269 bushel field average

Cover Cropping on McIntyre Farms

- Cocktail Mix into established pasture
- Cocktail Mix straight behind the combine in small grains
- Integrating cover crops with cash crops
  - Turnips into standing corn
  - Clover into standing corn

- “Worldly wisdom teaches that it is better for reputation to fail conventionally than to succeed unconventionally.” – John Maynard Keynes
- Have the courage to step out and do something different
- Try one thing this season that you previously “thought” would not work.
- Just Do IT! It is better to have tried and failed than to have never tried at all.
- Seed does not grow in the bag! We only have so many seasons to try before it is over.
- Not all can or will be no till with their current crop rotations but practicing these principles as much as possible will bring better soil health to your soil.