2023 NRCS Conservation Webinar – Organic Livestock Production

Organic Livestock & Conservation – Building Healthy Systems

June 6th, 2023

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Outline

- Organic Farming – What is it?, Common ground; conventional & ORG Ag
- USDA National Organic Program – NOP
- Tools/therapies available for veterinary use
- Prevention/Health promotion on organic dairies
- Health benefits of grazing
- Parasite control – An example of holistic approach to health
- Health = Everything working together

What is Organic? (Farming)

Organic Farming Is **NOT;**

Input Substitution – *i.e. Garlic instead of Penicillin, Essential Oils for pest control*

Farming by Neglect – *i.e. "Let Nature Take It's Course", No inputs for nutritional support or soil fertility*

Organic Farming Is – A Fresh way of thinking; Observe, Question, Experiment, Observe, ***Share***

Agriculture is the Foundation of Civilization

Common Ground

- All FARMERS (PRODUCERS) Share Goals, Values and ***Challenges***;

Production of Safe, Wholesome, High Quality Food

Sustainability and Environmental Stewardship

Excellent Animal Welfare

Profitability

Positive Relations with other People

Adapting to Change

Cooperating instead of Competing

National Organic Program - NOP

Definitions

- Certified organic – produced under USDA National Organic Program (NOP), Certifiers
- National Organic Standards Board (NOSB) – 15 Appointed volunteers
- National List – (Approved & Prohibited substances)
- FDA – ultimate authority, AAFCO – feed materials
- State officials – Departments of Agric., Commerce
- Alternative Labels; Grass-fed, Antibiotic-free, ‘Natural’, Regenerative, etc.

Herd Health - Most organic livestock farms experience fewer health problems with their animals under organic management than when they were conventional

- Prevention is the key to Organic Herd Health management
  - Higher forage/less grain feeding, Grazing – exercise, and soil health all positively impact immunity and health
- Tools are available in case prevention is not enough
  - Most vitamin preparations, mineral supplements and vaccines are allowed
  - Specific synthetic materials are allowed (such as electrolytes, dextrose, flunixin, and others)
  - Natural products are often used (herbal tinctures, colostrum-based whey products, topical liniments and salves, etc.)

IN GENERAL:

All natural materials are allowed

&

- **All synthetics are prohibited**

  (unless petitioned to NOSB and subsequently allowed by the Secretary)

Natural Treatments – Farmer Remedies

- Butter for Frothy (Pasture) Bloat – oil as surfactant

- Sugar for Retained Placenta – tOSU work with dextrose/metritis
- Apple cider vinegar (ACV) and molasses for ketosis

Conventional Medicines Allowed for OP

- Vitamins and Minerals – feed, inject.
- Vaccines
- Electrolytes – Calcium, Saline, etc.
- Dextrose
- Aspirin
- Topicals- Iodine and alcohol (disinfect), mineral oil, glycerine (teat dip)
- 2007 Approvals – flunixin, xylazine, etc.
- Emergency only – poloxalene, fenbendazole, moxidectin

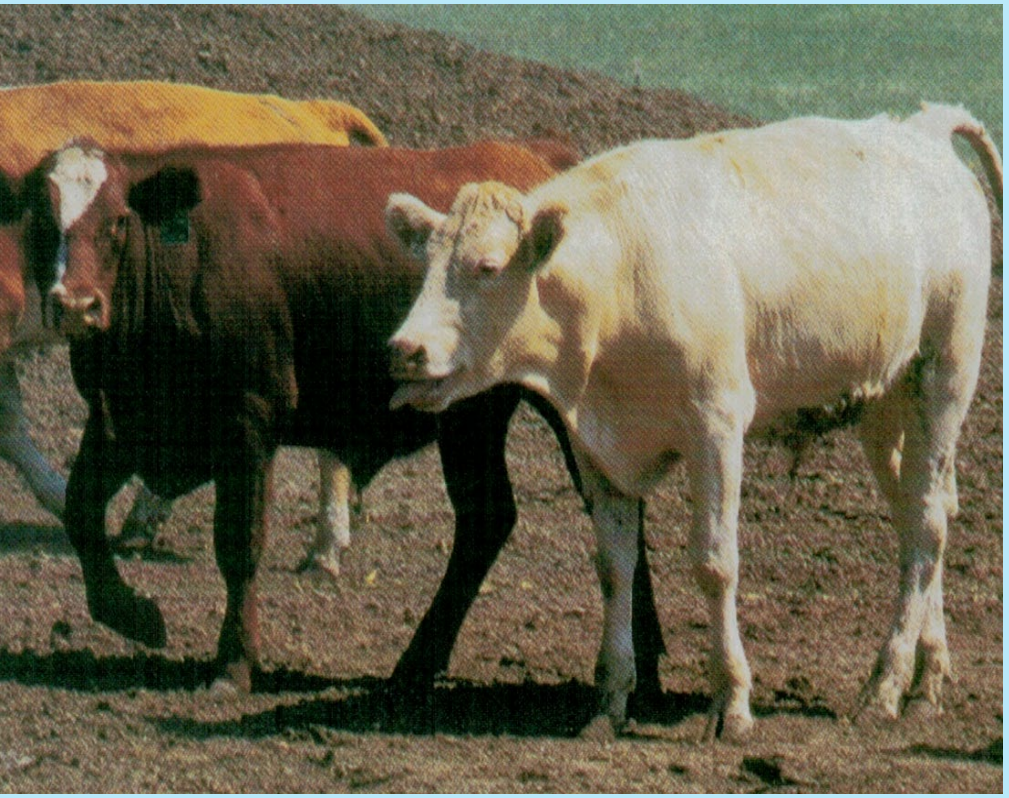
NOP List (of allowed synthetics)

§205.603 Synthetic substances allowed for use in organic livestock production. (www.ecfr.gov)

(9) **Flunixin** (CAS #-38677-85-9)—in accordance with approved labeling; except that for use under 7 CFR part 205, the NOP requires a withdrawal period of at least **two-times** that required by the FDA.

(23) **Xylazine** (CAS #-7361-61-7)—federal law restricts this drug to use by or on the lawful written or oral order of a licensed veterinarian, in full compliance with the AMDUCA and 21 CFR part 530 of the Food and Drug Administration regulations. Also, for use under 7 CFR part 205, the NOP requires:

- (i) Use by or on the lawful written order of a **licensed veterinarian**;
- (ii) The existence of an **emergency**; and
- (iii) A **meat withdrawal** period of at least **8 days** after administering to livestock intended for slaughter; and a **milk discard** period of at least **4 days** after administering to dairy animals. *(emphasis **Added**)*



Respiratory Infection

Antibacterial tincture; Garlic (or other)

Flunixin, Vitamin C – IV

Whey, Antiserum, Amplimune/Immunoboost

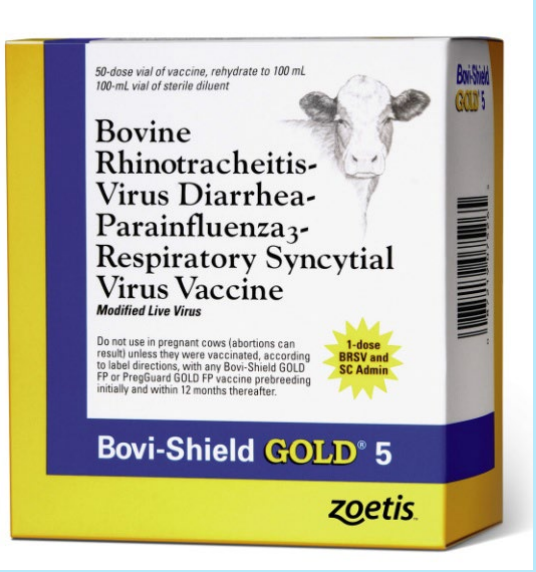
Oral Aloe vera – pellets or liquid

+/– Expectorant herbs – wild cherry bark, mullein leaf, slippery elm (tea)

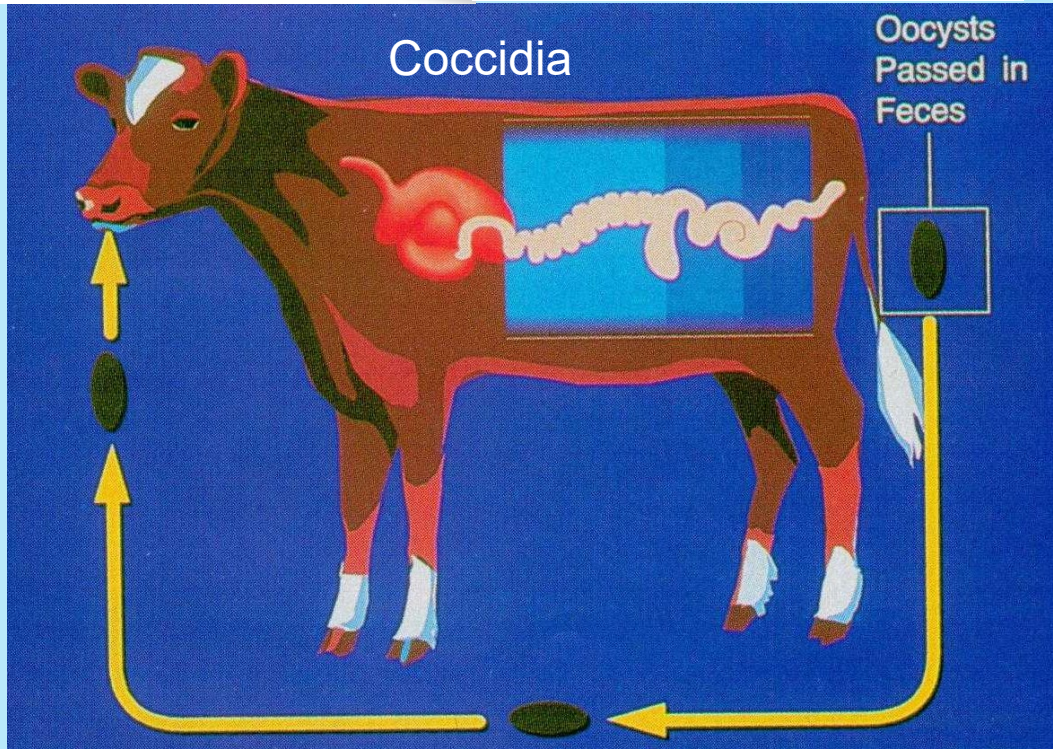
Antibacterial - tincture, Anti-inflammatory - flunixin, Antioxidant – Vitamin C,
Immune modulating/supportive – amplimune, antiserum, aloe vera
+/- Additional supportive care – fluids, probiotics, energy and/or mineral supplementation

Pneumonia Prevention

- **Ventilation** – Clean, Dry & Comfortable
- Colostrum and **Vaccination**
- Nutrition and Immune Support
- Parasite Control – Post Weaning
- **Biosecurity**, Isolation & Segregation




Deep bedding, Shade cloth



HOLISTIC VIEWPOINT

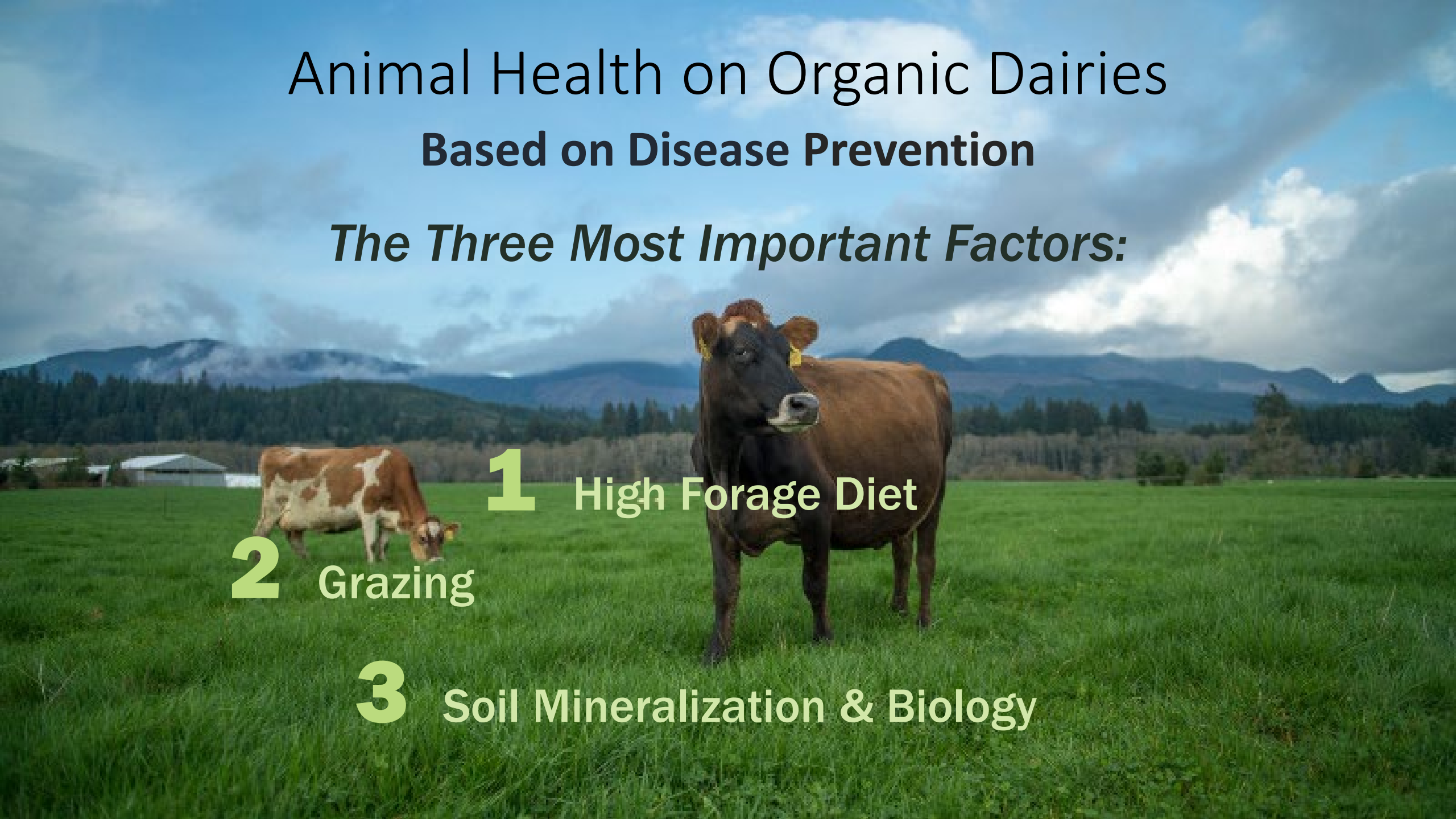
Individual well-being is the result of interactions that occur between all the parts of a natural system

Organic agriculture should seek a holistic approach to management – always consider the “whole system” and not individual parts in isolation

Animal Health on Organic Dairies

Based on Disease Prevention

The Three Most Important Factors:



1. High Forage Diet
2. Grazing
3. Soil Mineralization & Biology

High Forage = Less Grain

Limit grain to 1% BW

Less grain = less milk

Requires;

High Forage Quality

Exc. Grazing Mgt.

Suitable Genetics

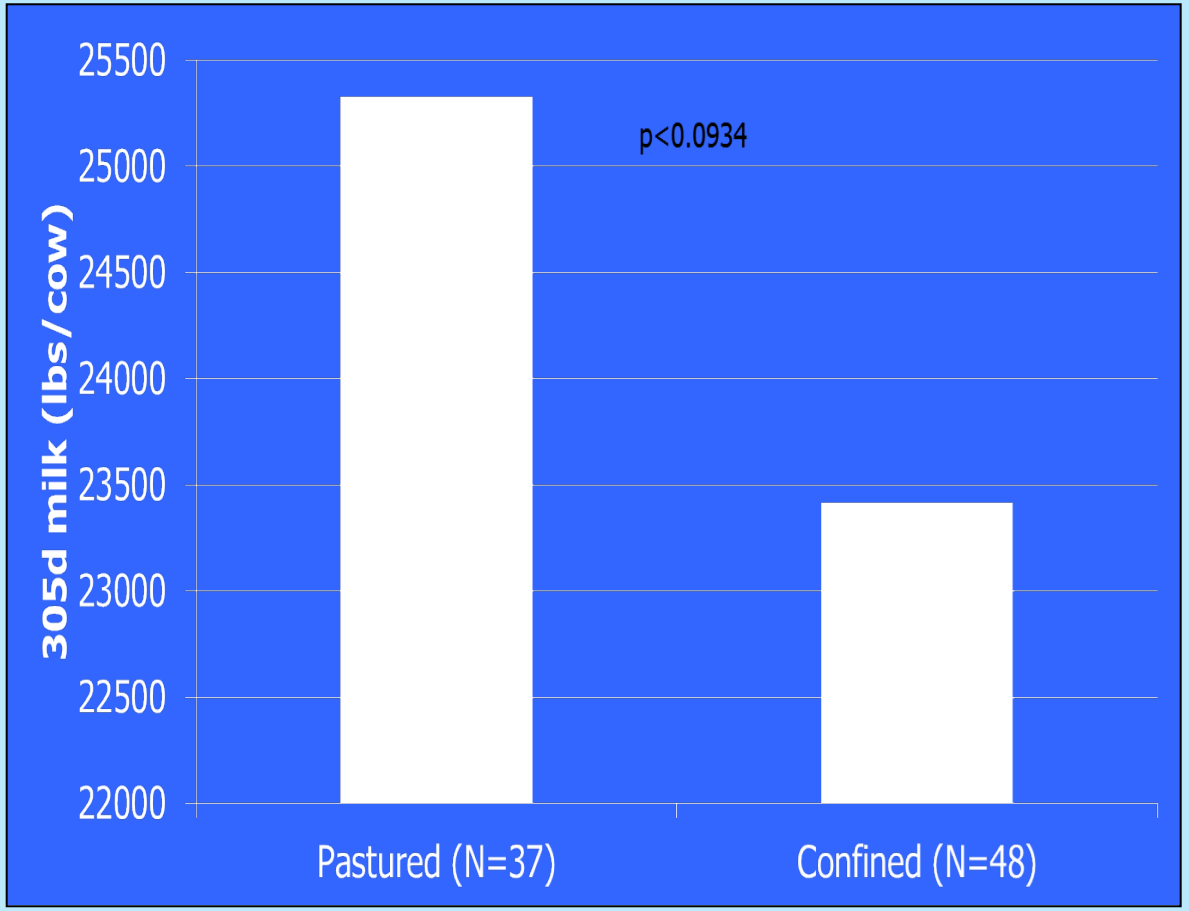
NOP Grazing Rule - Highlights

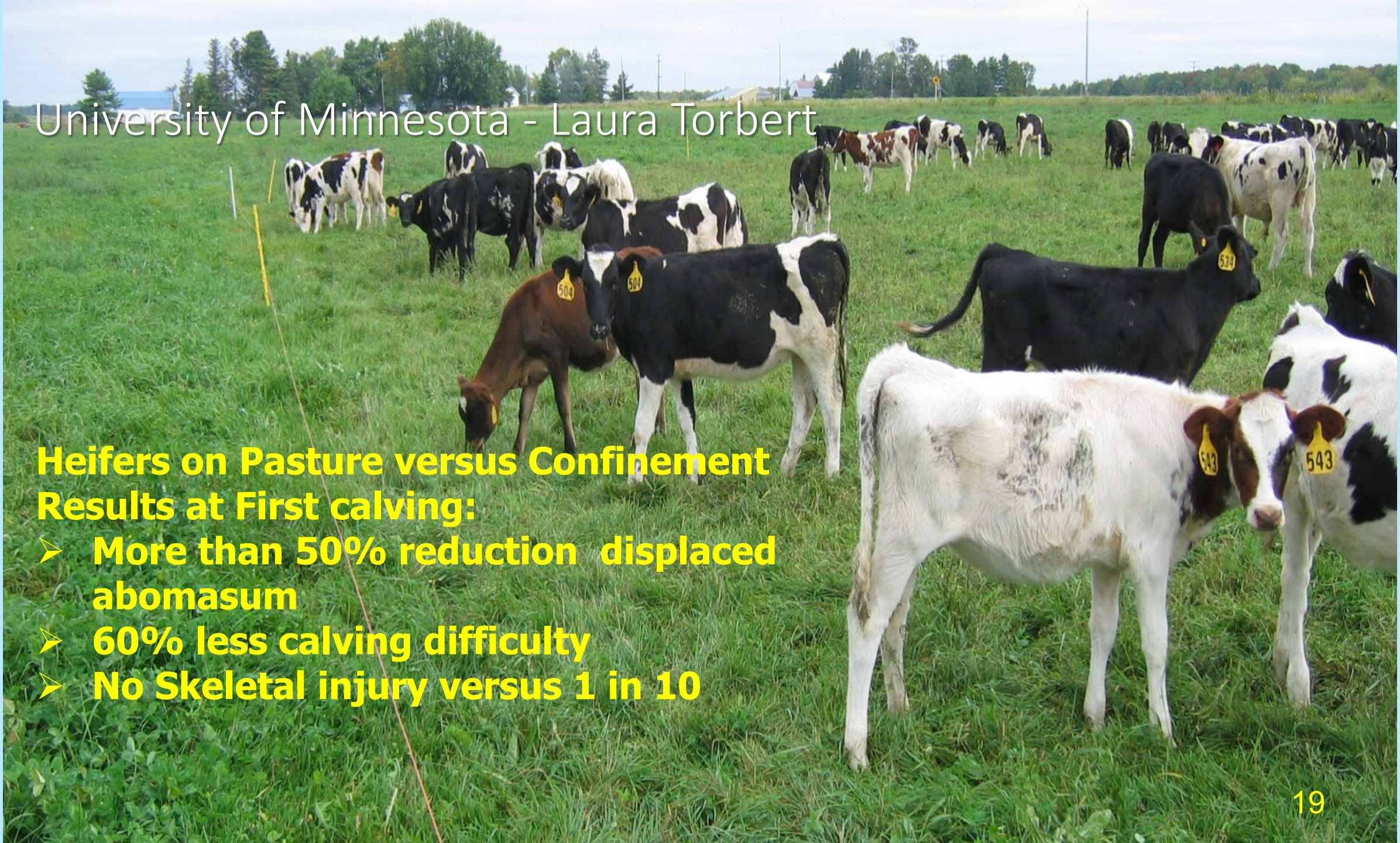
- Grazing Season – 120 Days Minimum, Differs by Region
- Average Dry Matter Intake (DMI) – Must Average 30% for Grazing Season
- Must document DMI – For each Class of Livestock (i.e. Dry Cows, heifers, Milking)
- Heifers over 6 Months of Age must be grazed
- Exceptions for Drought – Check with Certifier

Summary of UW- Madison Study - https://cias.wisc.edu/livestock/pastured-heifers-grow-well-and-have-productive-first-lactations/ https://smallfarms.cornell.edu/2011/01/health-benefits-of-grazing-dairy-heifers/

- Stocking strategy impacts animals and pasture in current season and beyond
- Pastured heifers more productive than those raised in confinement

First Lactation Performance (10 yr avg)




University of Minnesota - Laura Torbert
Heifers on Pasture versus Confinement
Results at First calving:
More than 50% reduction displaced abomasum
60% less calving difficulty
No Skeletal injury versus 1 in 10
504
509
534
543
543

PRINCIPLE

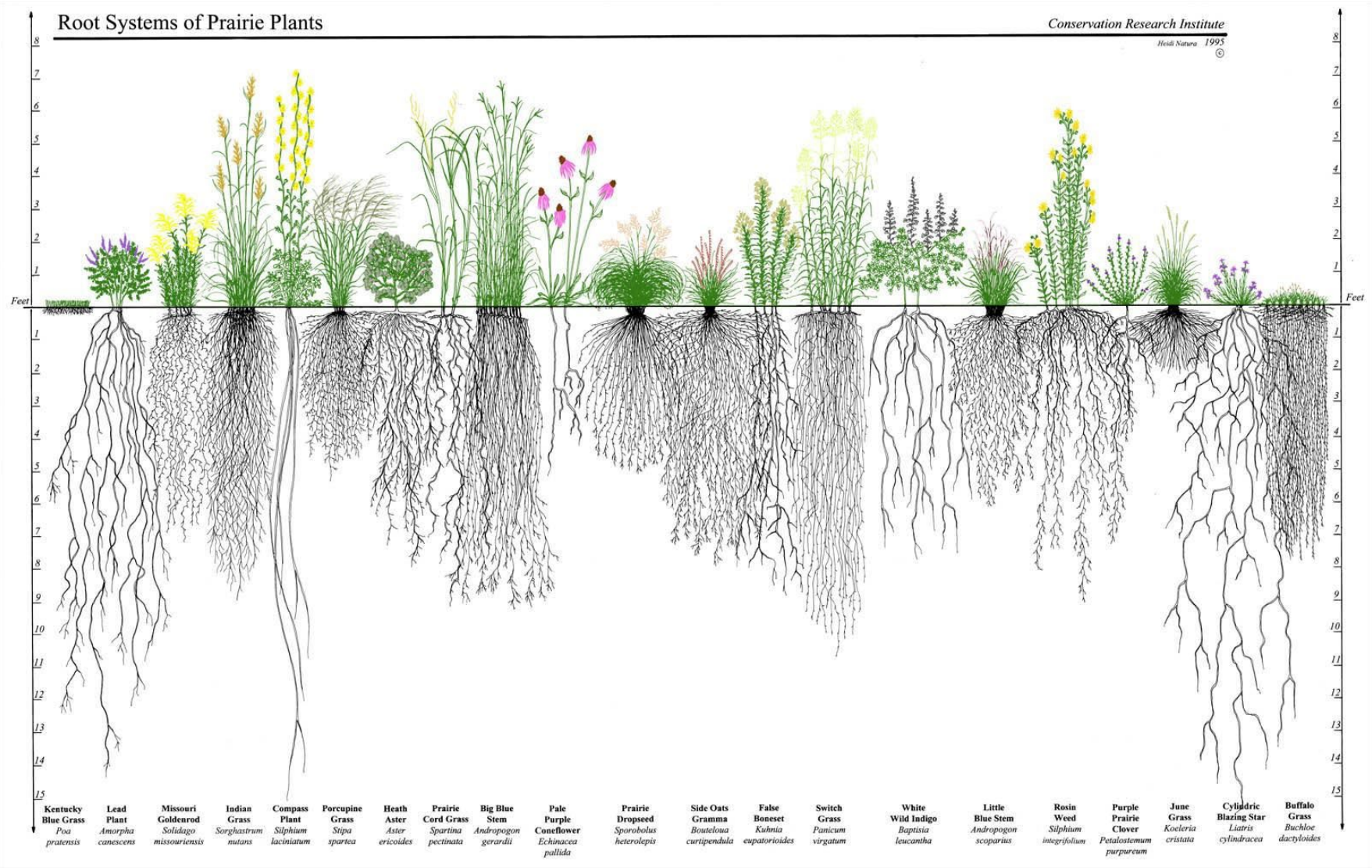
Excellent grazing management:

1. Provides high quality forage
2. Minimizes disease (i.e. parasites)
3. Increases beneficial nutrients in meat and milk
4. Promotes healthy soil/C sequestration
5. Improves profitability

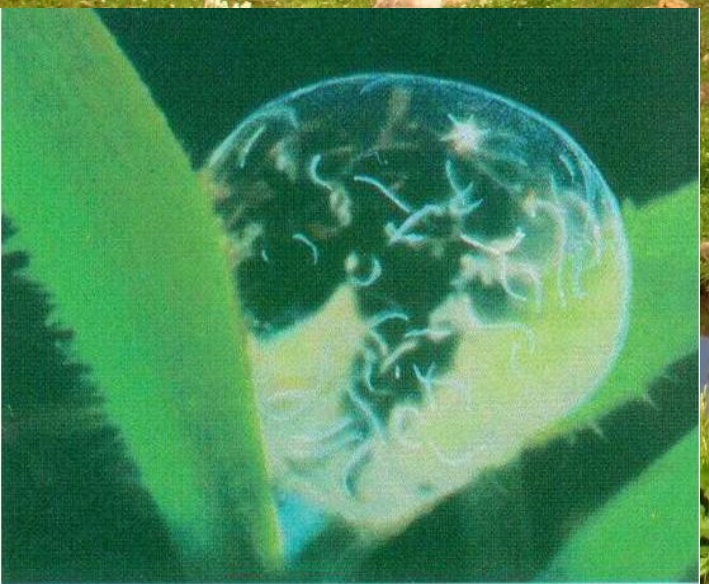
THE LIVING SOIL

- Bacteria
- Soil Fungi
- Soil Protozoa
- Nematodes
- Arthropods
- Earthworms
- Others

INCREASED – BIOLOGY, INTERACTIONS, CARBON FLOW, **CARBON SEQUESTRATION = CLIMATE CHANGE SOLUTION**



Parasite Management in Organic Livestock



Parasite Biology - Worms

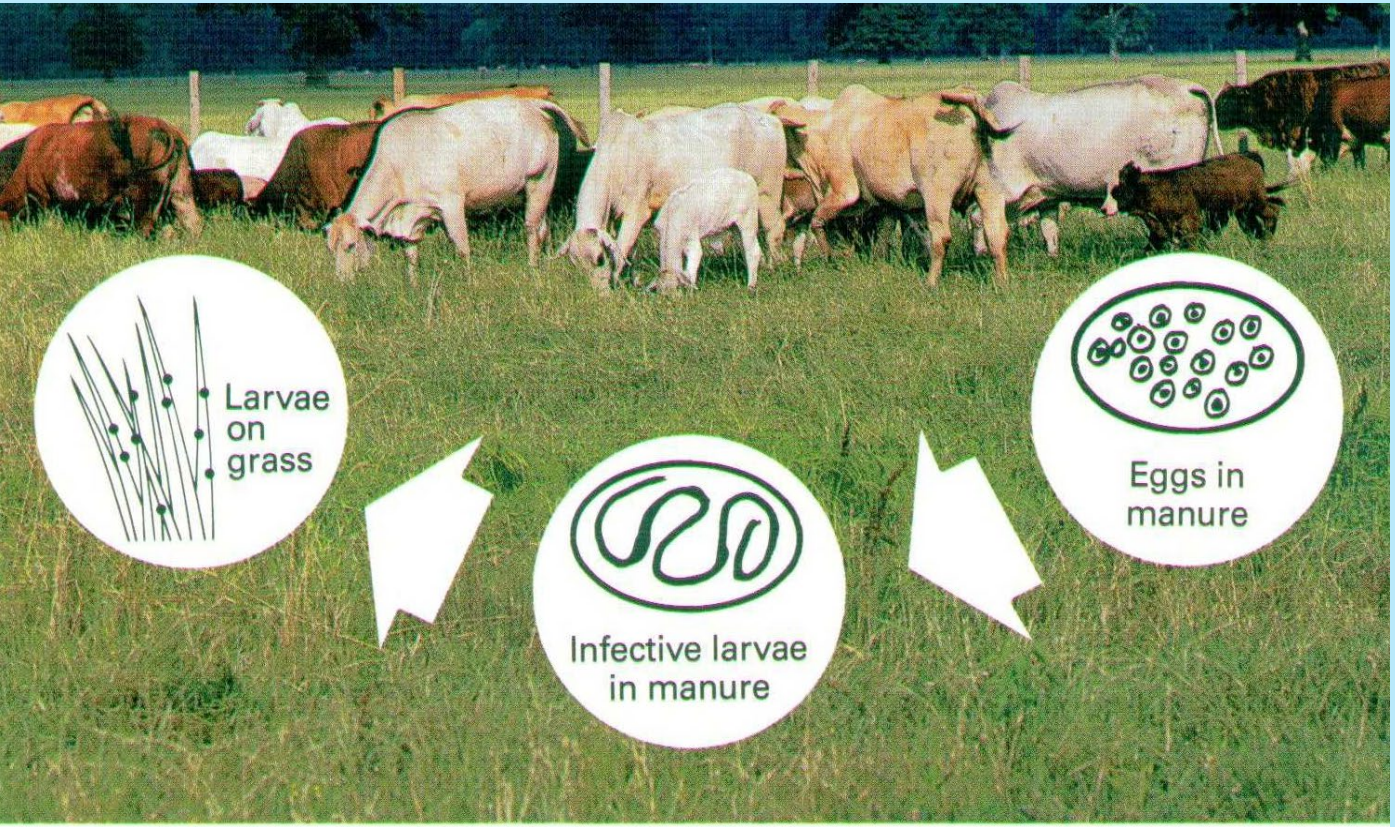
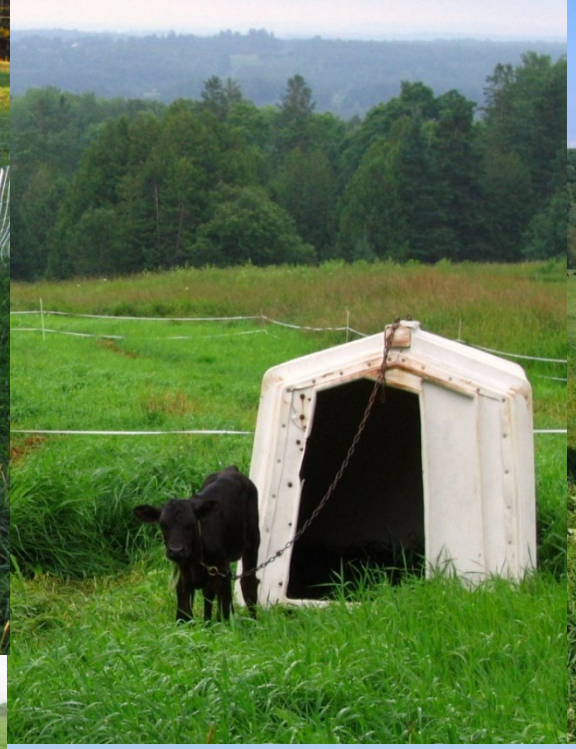


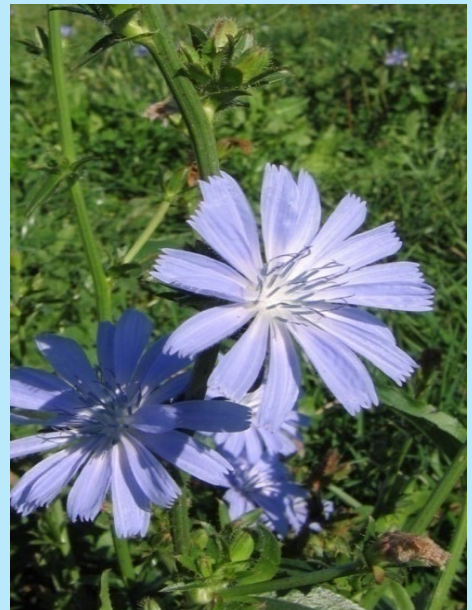
Figure 4. Using water droplets and films of moisture, larvae move up blades of grass and become available to grazing cattle.

- Many different worms
- Different organs –mainly GI tract
- Roundworms are the most economically important parasites
- Similar life cycles
- Eggs shed in feces
- Eggs mature into infective larvae
- Larvae ingested during grazing
- Develop into adults in the animal (3wk-mo)



Holistic Management of Parasites

- ✓ Support immunity through proper nutrition (milk), kelp, DE
- ✓ **Good grazing management to reduce exposure**
- ✓ Avoid damage to natural controls (dung beetles)
- ✓ Pasture Plant Diversity
- ✓ Genetic Selection – Cull problem calves
- ✓ Strategic/Emergency application of herbal/synthetic dewormers to reduce parasite load and pasture contamination

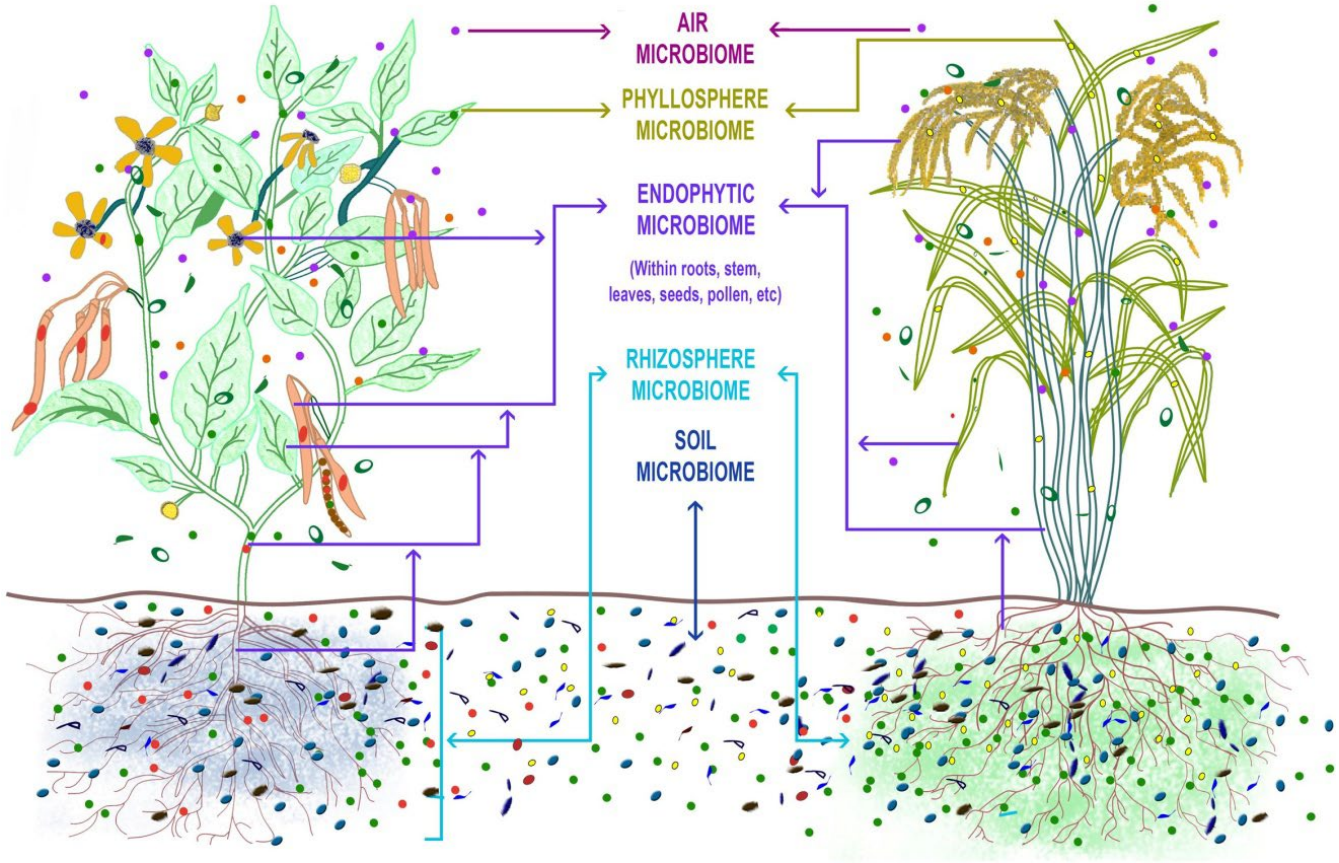


MICROBIOMES

FROM GREEK (mikrós) = SMALL AND (bíos) = LIFE

SOIL AND THE HUMAN GUT MICROBIOME

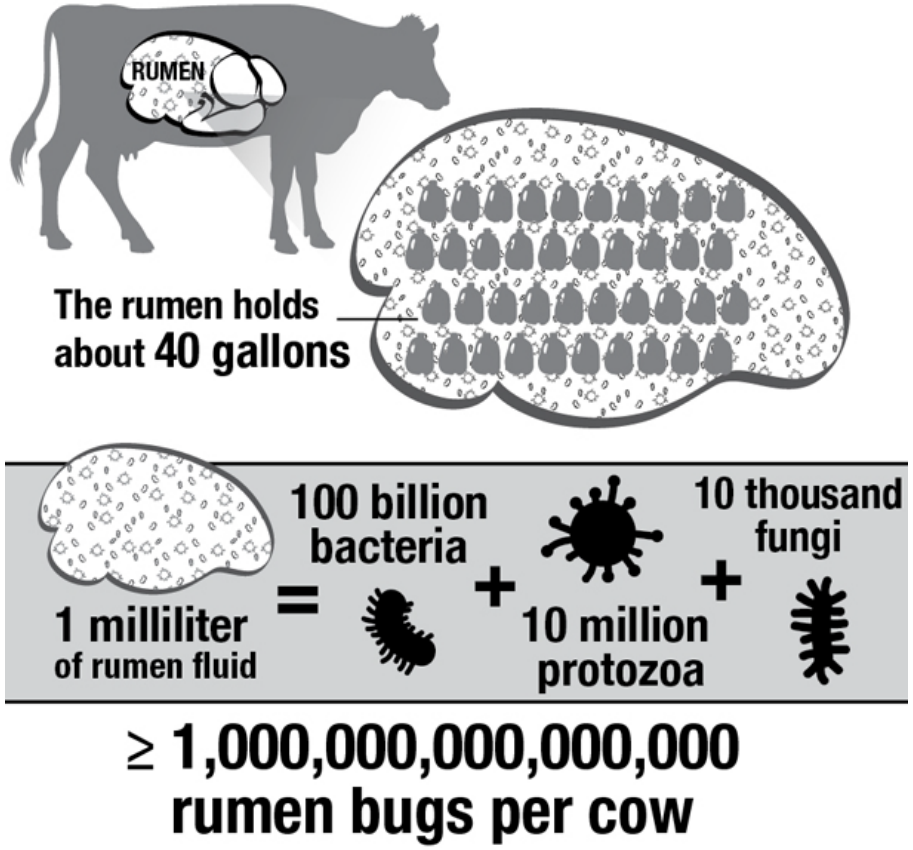
- Increased use of agrochemicals, low plant biodiversity and rigorous soil management practices have a negative effect on the biodiversity of crop epiphytes and endophytes.
- A loss of soil biodiversity has been observed in many rural areas.
- Excessive hygienic measures, little contact with soil and natural environments, antibiotics and a low fiber diet of processed food have led to a loss of beneficial microbes.

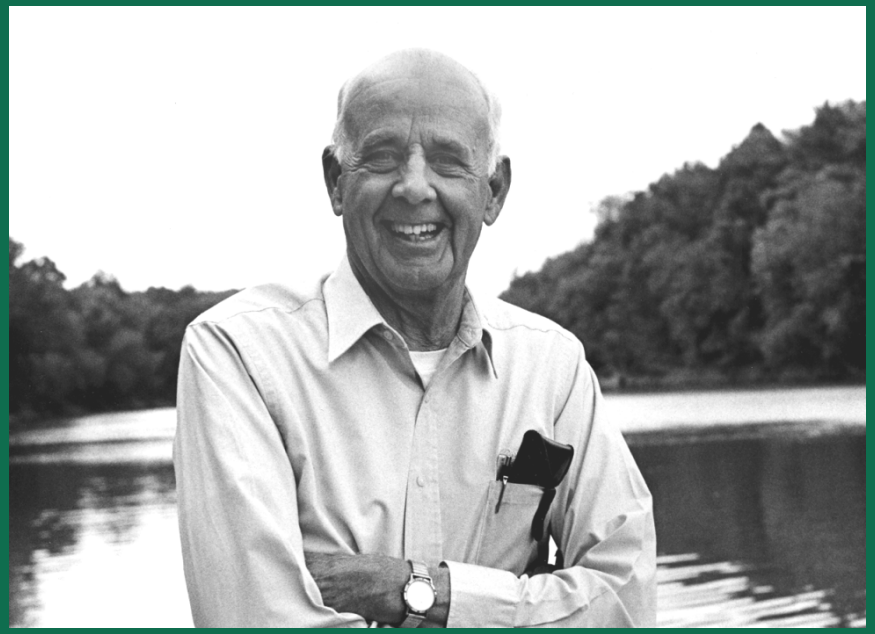


"THESE DEVELOPMENTS CONCUR WITH AN INCREASE IN LIFESTYLE DISEASES RELATED TO THE HUMAN INTESTINAL MICROBIOME."

Blum, Zechmeister-Boltenstern , Keiblinger – Microorganisms 2019 Aug 23;7(9):287

THE RUMINANT CONNECTION





Wendell Berry

The concept of health is rooted in the concept of wholeness. The word health belongs to a family of words,... *heal, whole, wholesome, hale, hallow, holy.*

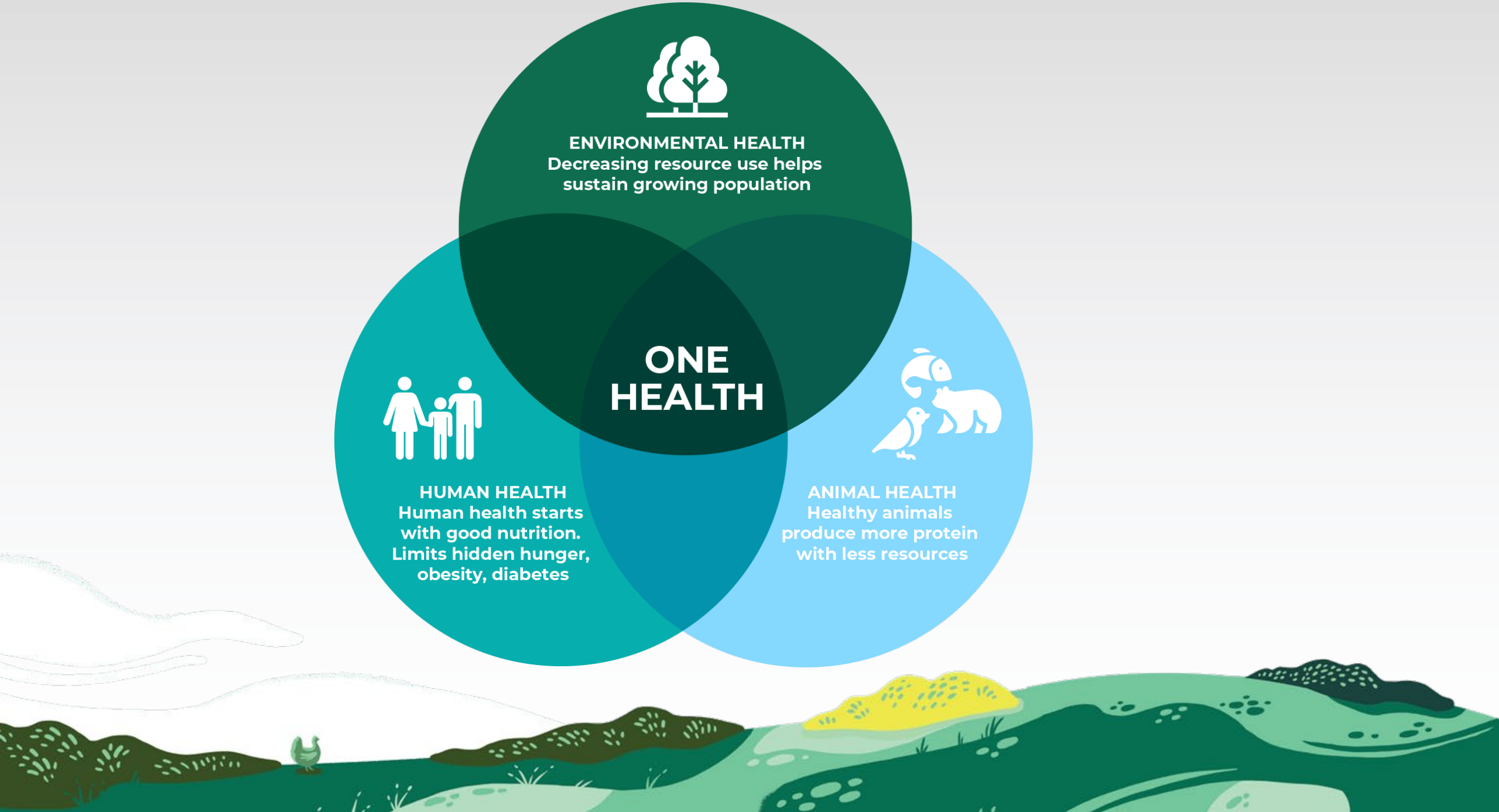
"The Unsettling of America" (pages 102-103)

"The Universe is a communion of subjects, not a collection of objects." -Thomas Berry

From "The Farm as Ecosystem"
by Jerry Brunetti p. 317

Summary

- Organic livestock farming – many similarities, key differences
- Organic livestock rules – USDA - NOP
- Veterinary medical tools - Natural materials, NOP Allowed synthetics
- Prevention of Disease is key – Health Promotion
- Good Grazing promotes health – Soil, Plant, Animal, Human, World
- Parasite Control – is possible without routine use of synthetic anthelmintics
- Health is the state of Everything working together


ENVIRONMENTAL HEALTH
Decreasing resource use helps sustain growing population
ONE HEALTH
HUMAN HEALTH
Human health starts with good nutrition. Limits hidden hunger, obesity, diabetes
ANIMAL HEALTH
Healthy animals produce more protein with less resources


The End