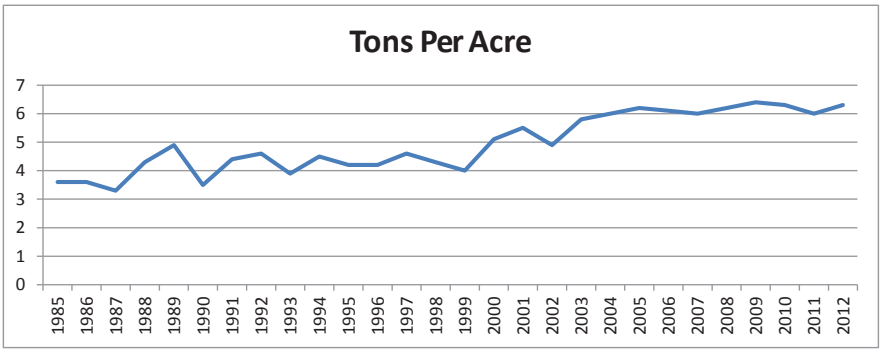
10 YEAR ALFALFA STUDY

Location: United States, Central NV
Soil type: Alkaline, 8.5 P H
Application: 1 liter of Bio N Liven, 1 Liter Carbon Answer per season. Applied through pivots at the early stages of each crop. In 2010-2012 the next generation line named Nano Ag was used instead at an equivalent rate.
Weather: 90 to 100 degrees F. Arid, with little rainfall. (5 inches per year)
Irrigation: Center pivots, ¼ mile long. 120 acres each.
Production: Production went from 4 ton average to over 6 ton average, sustained for 10 years.
Procedure: Study was done using 14 Center Pivots, of 120 acres each. 10 Pivots were selected for treatment, and 4 were used for control.
HARVEST: 3 cuttings per year, using 1 ton square balers.

History:

Located in Central Nevada, at 5000 Ft. the Soil is high alkaline, 8.5 PH. It has historically been very hard, taking in water slowly, making it difficult to develop new crops. Four tons per acre is the average production in the previous 20 years. (see chart, 25 year history) 1000 gallons per minute is required to adequately irrigate each Pivot.



RESULTS:

Hay normally requiring 40 days reach full height, (30 In.) began reaching it in 30 days. Cutting 10 days off the growing time of each crop resulted in more growing time, and more production.

30 inches in 30 days.

Treated soil became soft, taking in water, and retaining it more readily.

Treated Fields began requiring less water to produce. Irrigation rates were reduced over several years, to 700 gallons per minute.

Treated fields increased in quality, and quantity, while using 30 % less water.

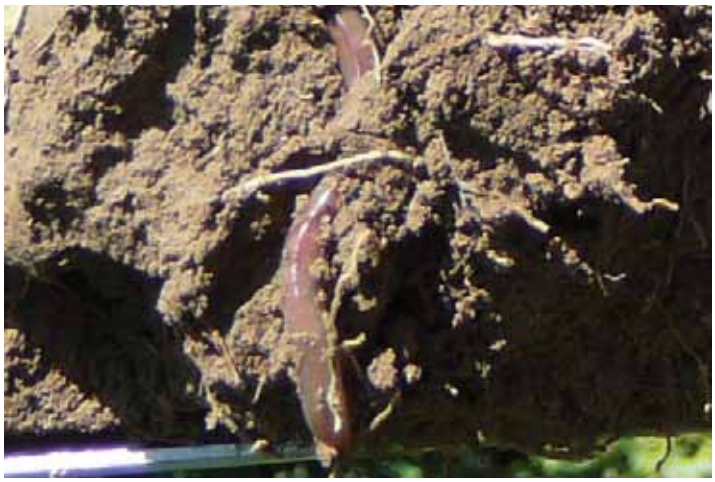
Treated fields Increased yield two ton per acre, on average (1 1/2 more than control).

Alfalfa crop life increased from 5 to 8 years. Fields remained fully productive, still producing 6 tons per acre through year 8.

98% Seed germination rate.

Original Lifeless Soil

Revitalized Soil And Increased Root Mass

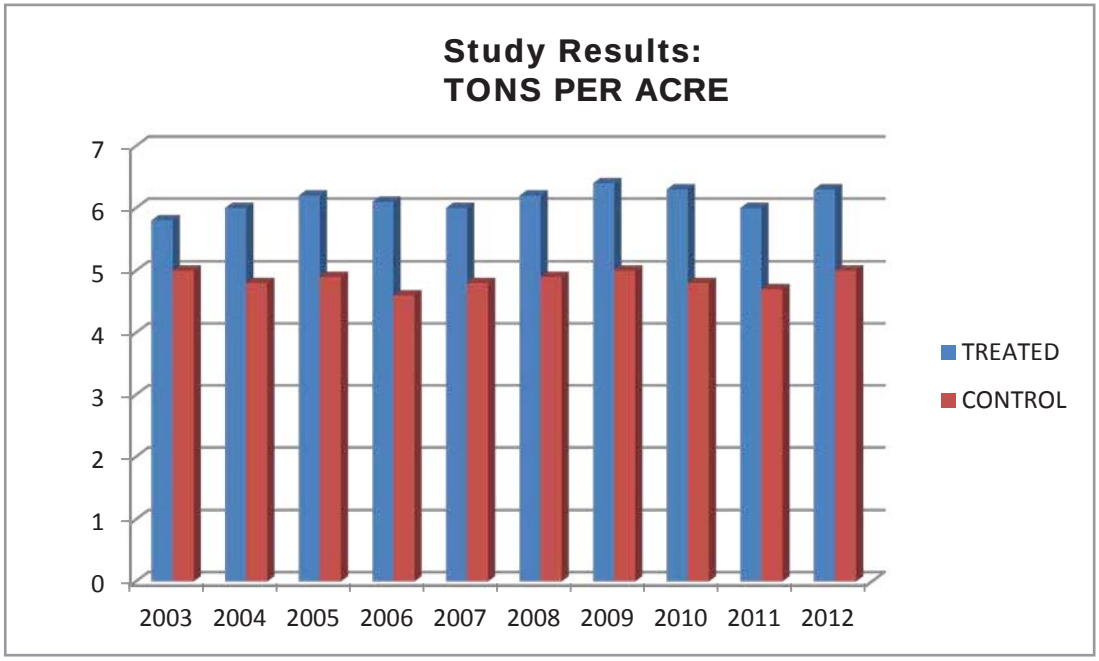


Earthworms Became Everywhere Present

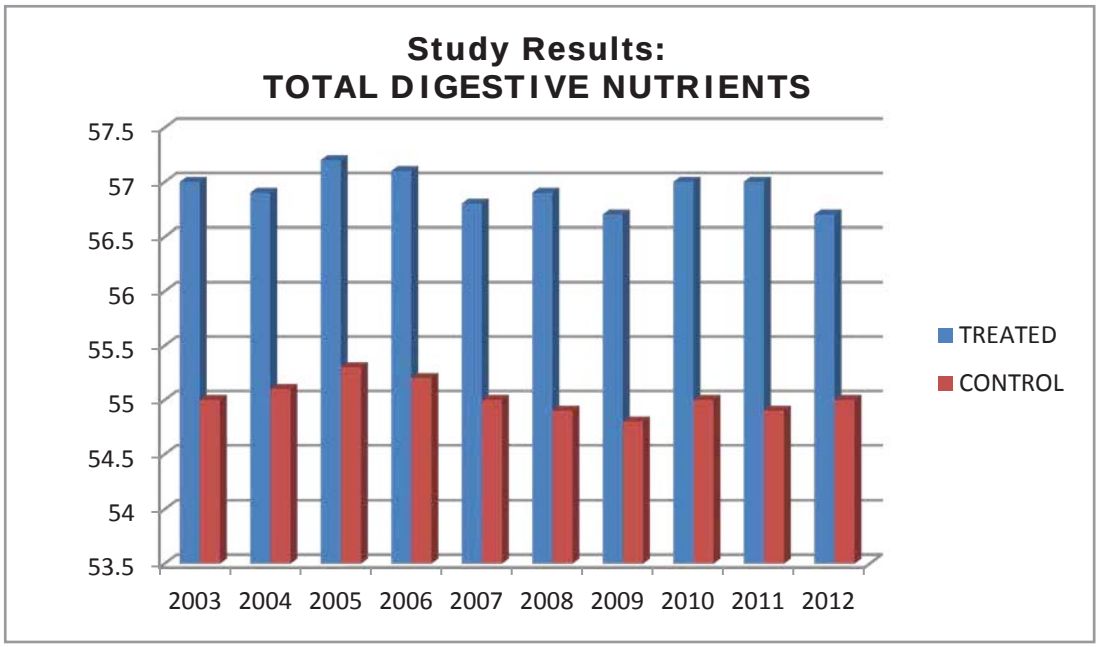
Aphid Everywhere. No Crop Damage.

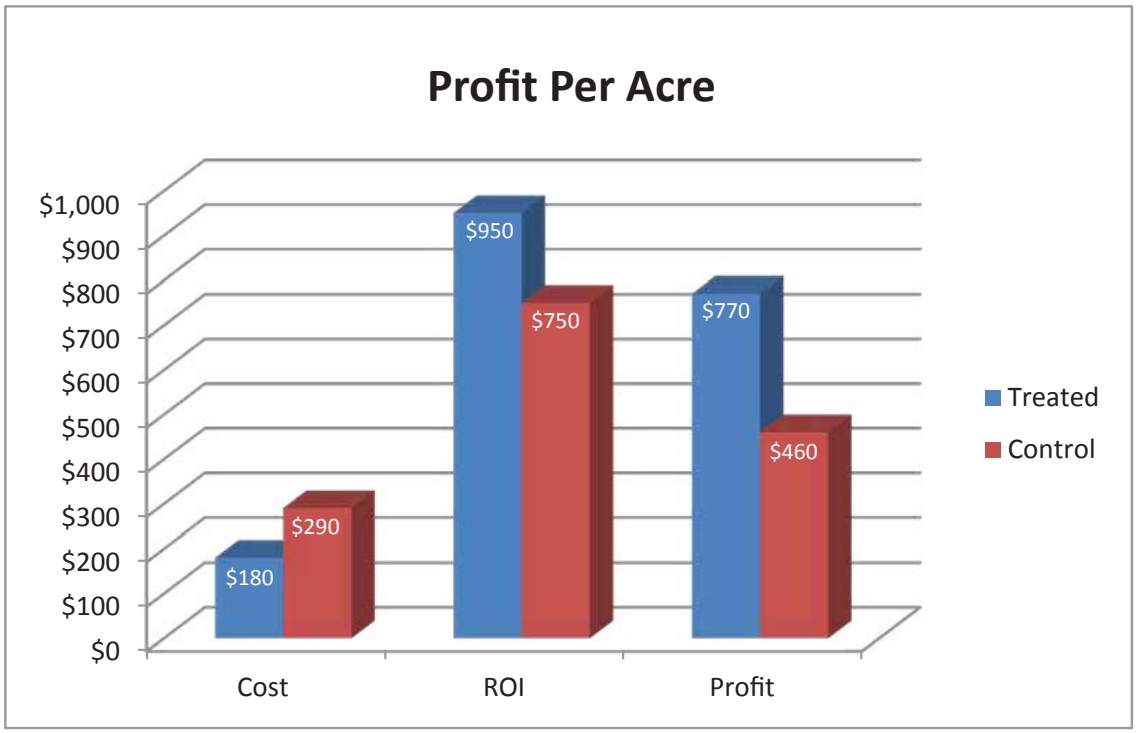
Treated fields received very little damage from pests, generally eliminating pesticides.

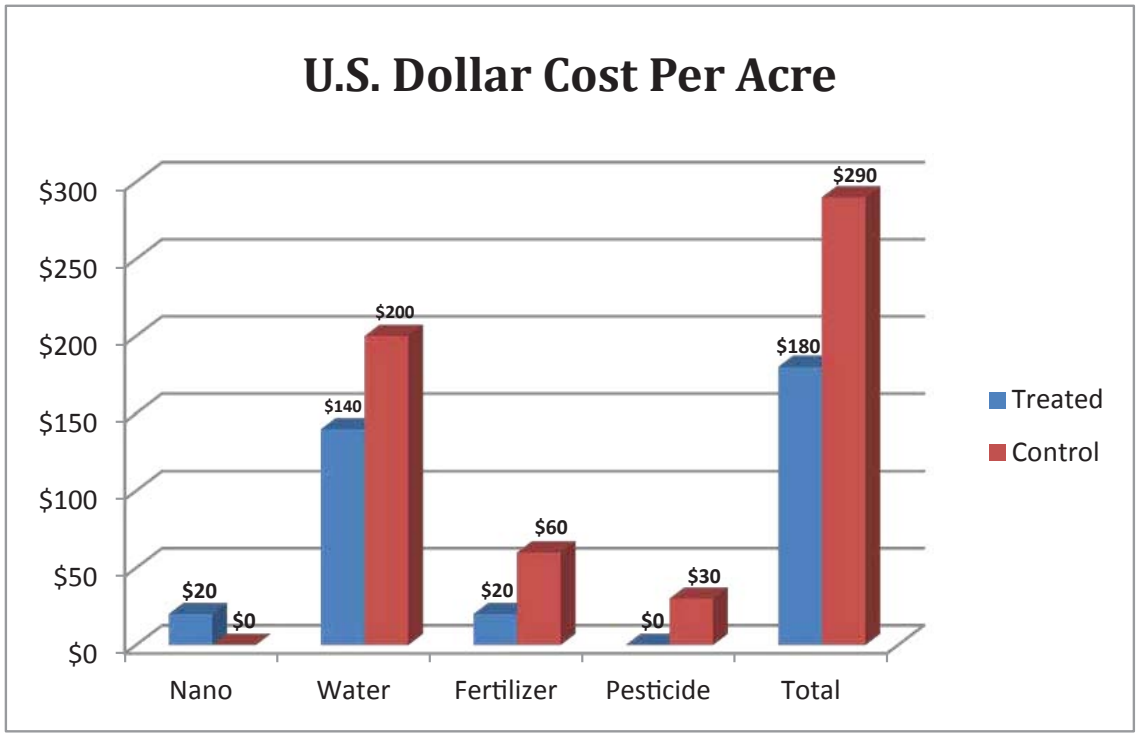
Crop production increased while symultaniously improving quality.



Treated fields increased TOTAL DIGESTABLE NUTRIENT 2 full points. (see chart) 55 is the minimum requirement for Dairy quality, while 57 is considered premium, and brings a premium price.




Profit Per Acre
$1,000
$900
$800
$700
$600
$500
$400
$300
$200
$100
$0
$180
$290
$950
$750
$770
$460
Cost
ROI
Profit
Treated
Control


U.S. Dollar Cost Per Acre
$300
$250
$200
$150
$100
$50
$0
$20
$0
$140
$200
$20
$60
$0
$30
$180
$290
Nano
Water
Fertilizer
Pesticide
Total
Treated
Control

CONCLUSIONS:

After conducting this study for 10 years, these are the findings:

Treated fields function at optimal levels with 30% less water.

Field life increased from 5 to 8 years between rotations.

Production increased two tons per acre (1 1/2 tons more than control fields).

Quality also increased in spite of larger crops.

Fertilizer was reduced.

Pesticides were generally eliminated with no noticable damage for ten years.

Farm saved $60 per acre in irrigation costs.

Income increased $200 per acre in production.

Profits per acre increased $300.

This increased profitability and crop vitality makes the difference between success and failure.