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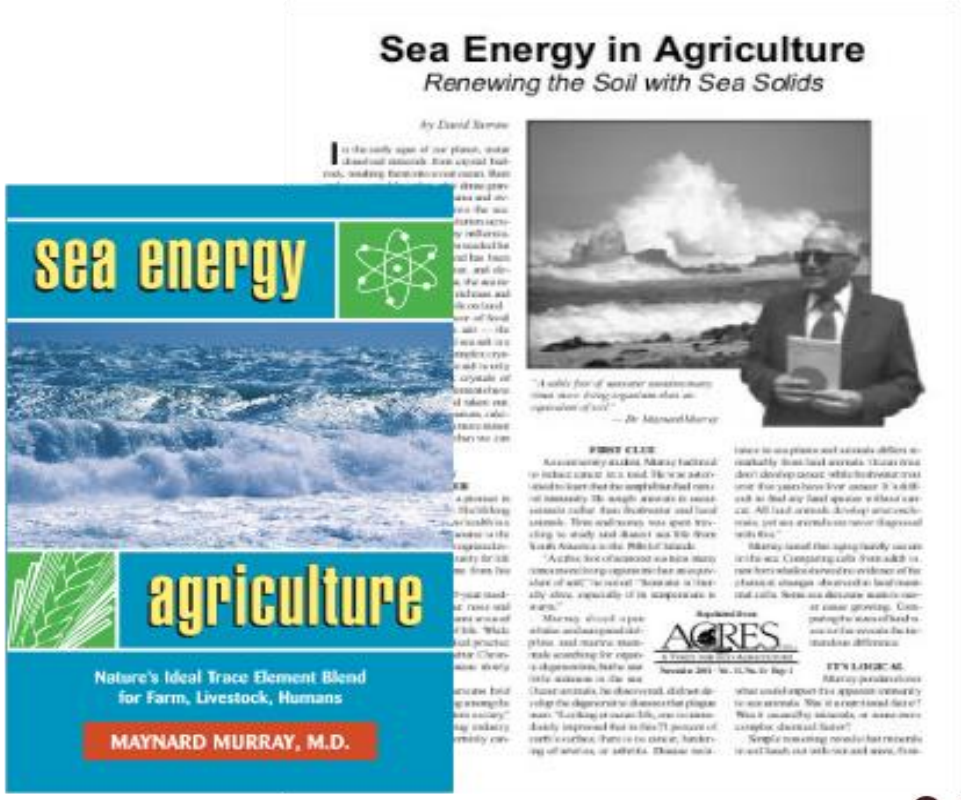
The Foundation of Every Mineral Program on the Farm



What are Sea Minerals?

"The sea is characterized by elements in a liquid crystalloid state, defined as a crystallizable substance which, when dissolved in a liquid will diffuse readily through vegetable or animal membranes."

-Dr. Maynard Murray
Sea Energy Agriculture



Where Do Sea Minerals Originate?

Volcanic Activity

Underwater Vents

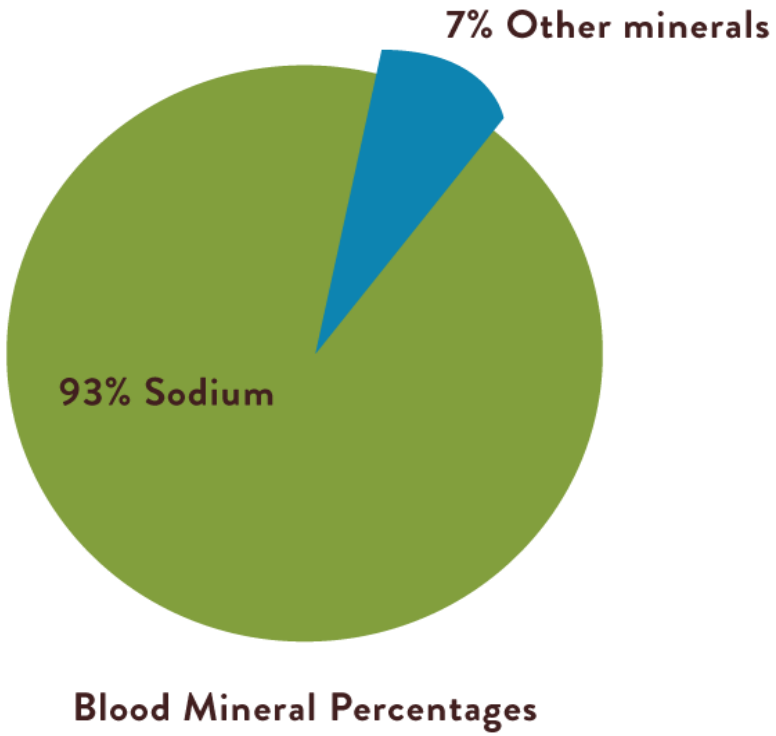
Erosion

Why Sea Minerals?

"The analysis of elements in human blood has essentially the same profile as the analysis of elements found in ocean water, including large amounts of sodium chloride." - Dr. Maynard Murray, Sea Energy Agriculture

Sodium & Blood

"Sodium makes up 93% of the basic mineral elements in the blood serum and is the chief cation regulating blood pH - Larry L. Berger, Ph.D.
Professor of Animal Nutrition



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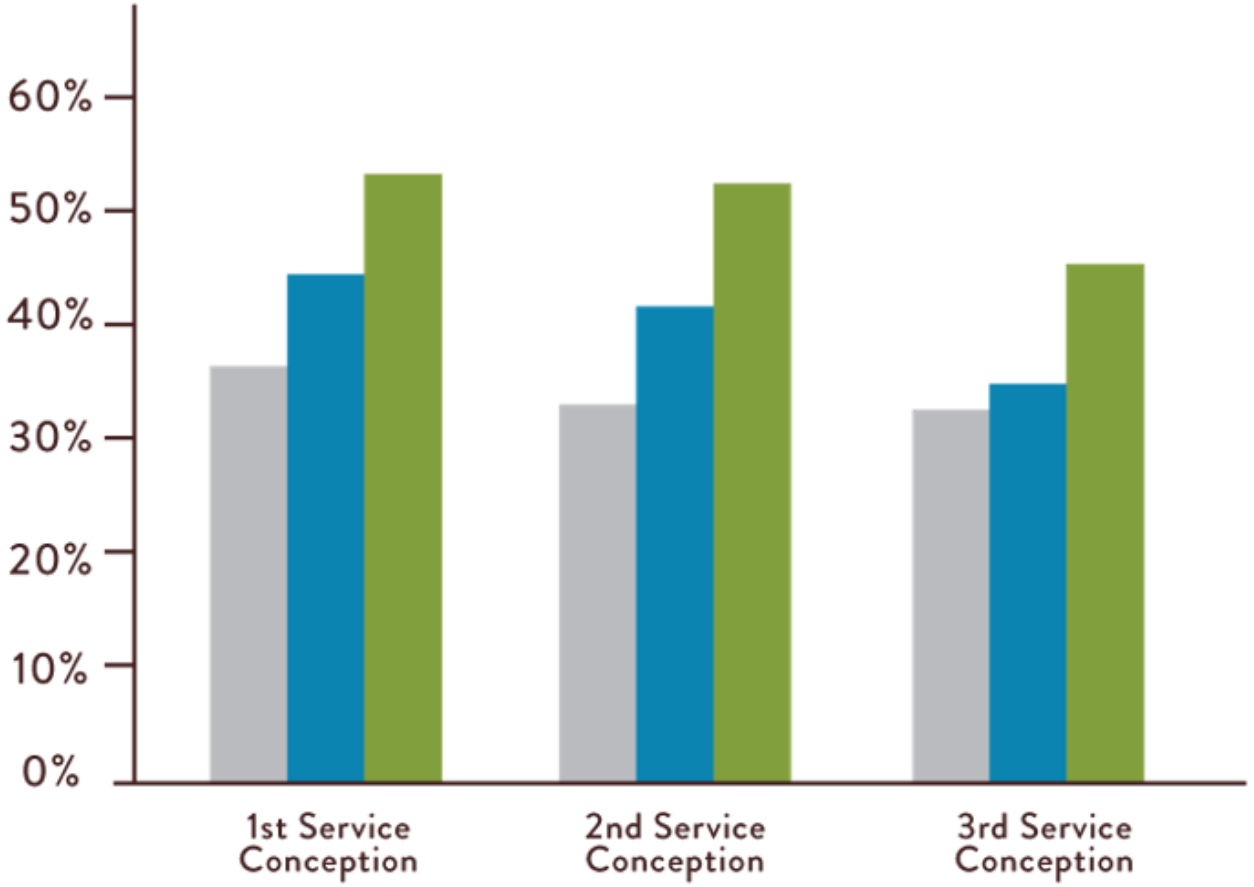
Given the Choice, They Choose Redmond


DAIRY

Dairy Conception Rates: Twin Falls, ID



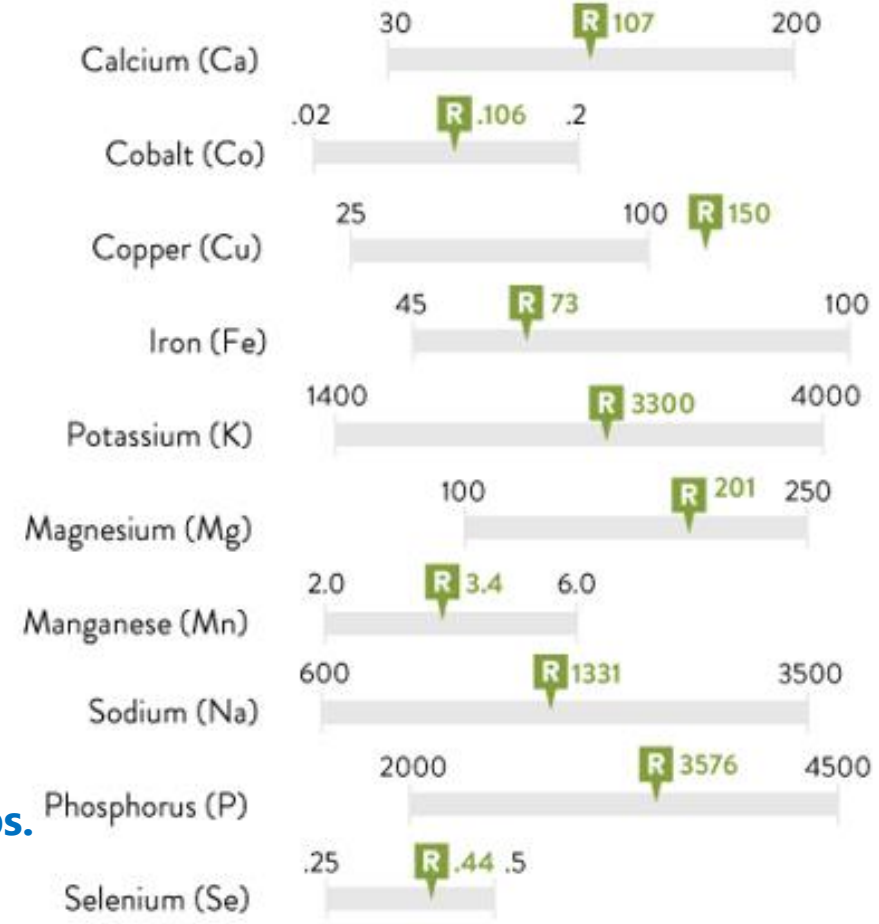
No Redmond Salt & Conditioner

Free Choice Redmond Salt & Conditioner

TMR Redmond Salt & Conditioner

DATA SOURCE: PCDART
1,000 Cow Dairy

Dairy Liver Biopsy Results



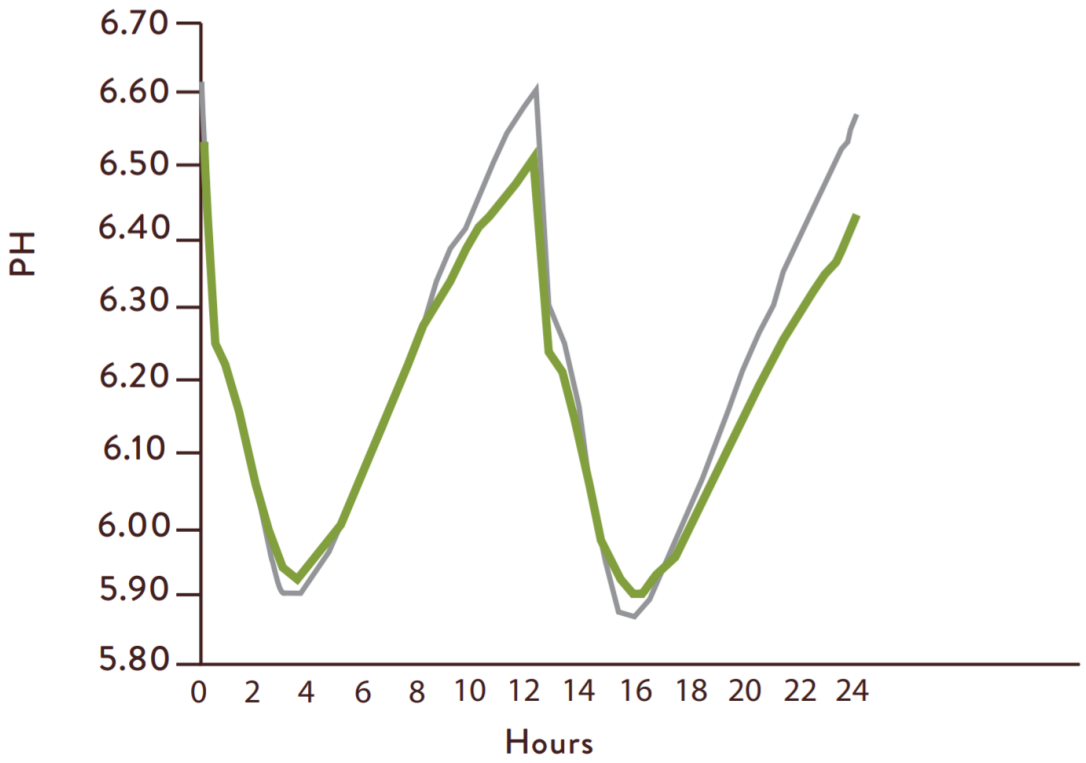
The Results Speak for Themselves

Redmond gives dairy cows the minerals they need

Data Source: Four different dairy herds representing 2,200 cows from three different states. Testing was completed by **Michigan State University and Utah State University labs.**

Better than Bicarb

Equal Buffering but conditioner has other benefits



Bicarb

Redmond Conditioner

Data Source: West Virginia Univ. Trial

Why Wouldn't you?

	Bicarb	Conditioner
Buffer Capacity	✓	✓
Fiber Digestion		✓
Rumen Ammonia		✓
Toxin Binding		✓
Lower Cost		✓

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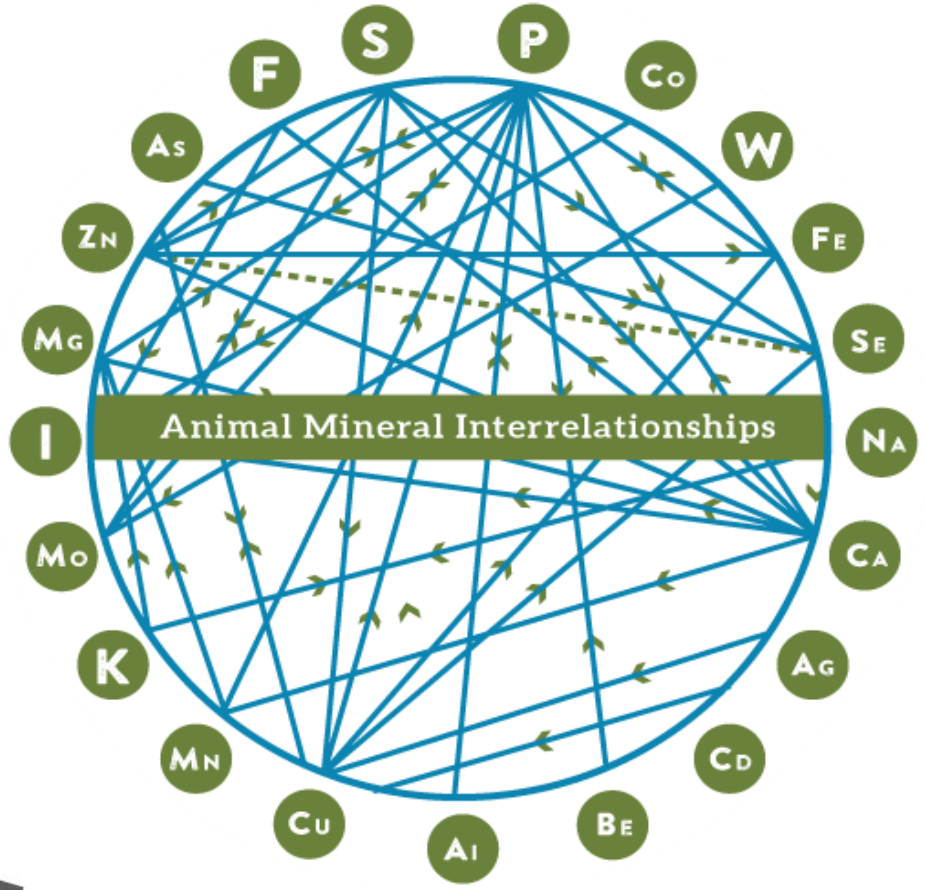
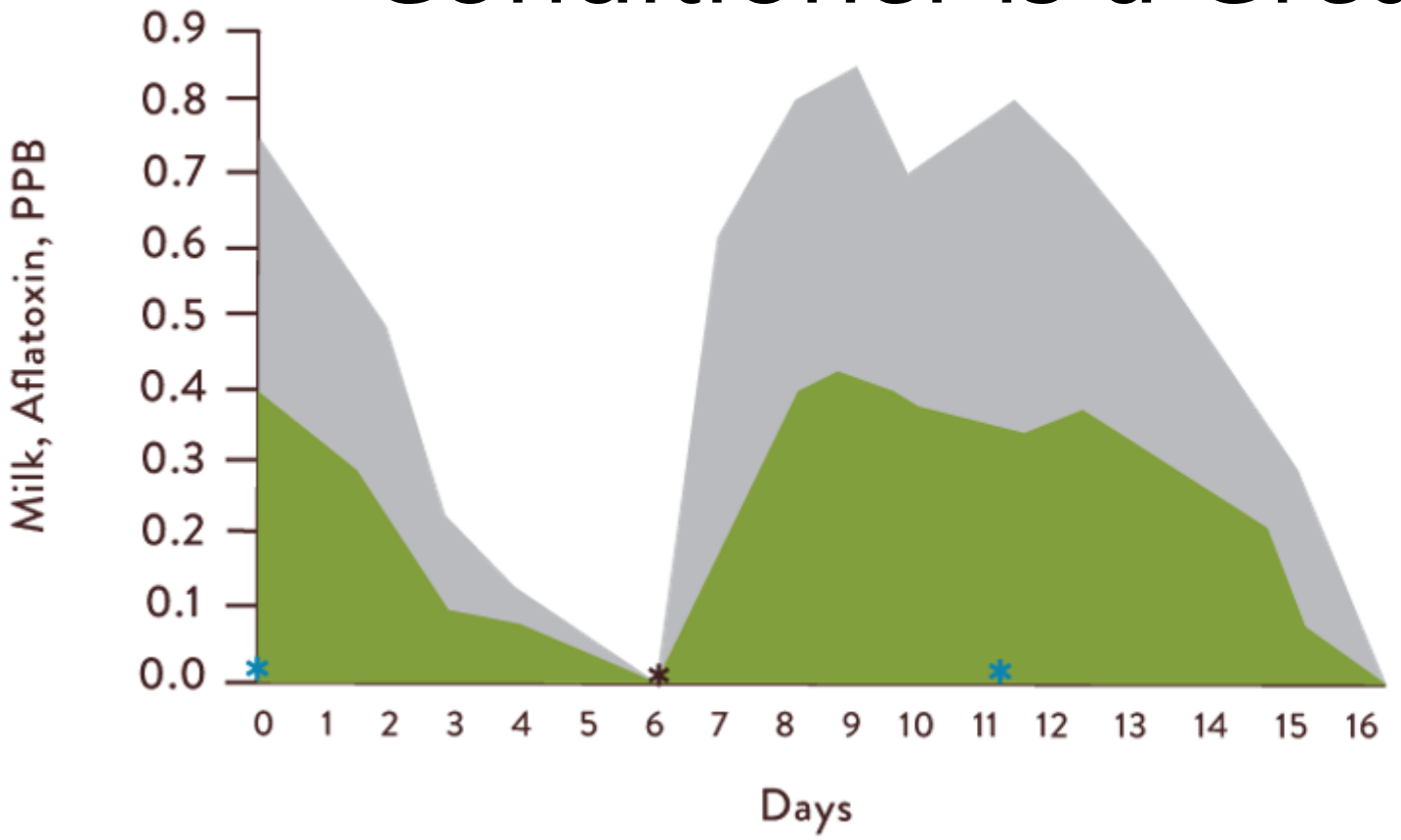
Complexity Into Simplicity

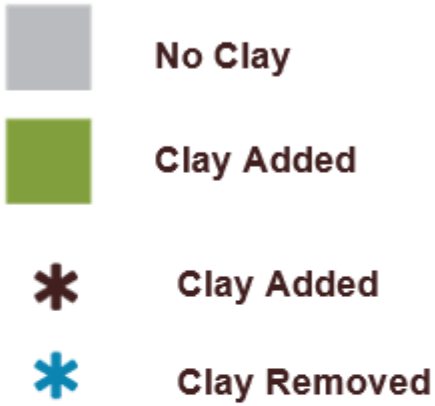
If we are honest, us humans really don't understand this yet…



- Mineral Interactions are Complex
- Different forms of minerals change their availability (oxides, sulfates, chelates)

Conditioner is a Great Toxin Binder





Data Source: Dr. Don W. Whitlow
North Carolina State University

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Conditioner Binds Aflatoxins

Analysis Compound	Percent of Bound Toxins
Aflatoxin	99.2
T-2	85.9
Zearalenone	41.3

DATA SOURCE: Trilogy Analytical Laboratory, Horton, KS, 2015

DATA SOURCE: Trilogy Analytical Laboratory, Horton, KS, 2001

So How Do I Feed Redmond?

Free Choice or as part of a TMR

- Salt
- Conditioner
- Blends *Come in 1 ton bags or bulk*
  - SR 50 1:1
  - SR65 2:1

Different Ways to Start Feeding Redmond Minerals

Redmond 10 Fine Premium Salt →	Remove all salt from diet
Redmond Salt and Conditioner →	Remove all salt and sodium bicarb (use 4-8 oz of conditioner)
SR50 (feed 8 oz) →	Remove salt, bicarb and toxin binders
SR65 (feed 12 oz) →	Remove salt, bicarb, toxin binders, remove macro minerals by half. If feed over 1 months and still loose manure? Reduce soluble protein by ¼-1/2 lb
Redmond Minerals Dairy Option →	Remove all minerals and salt from your current program

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What if You Want More Minerals in Your Program?

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SELENIUM 90

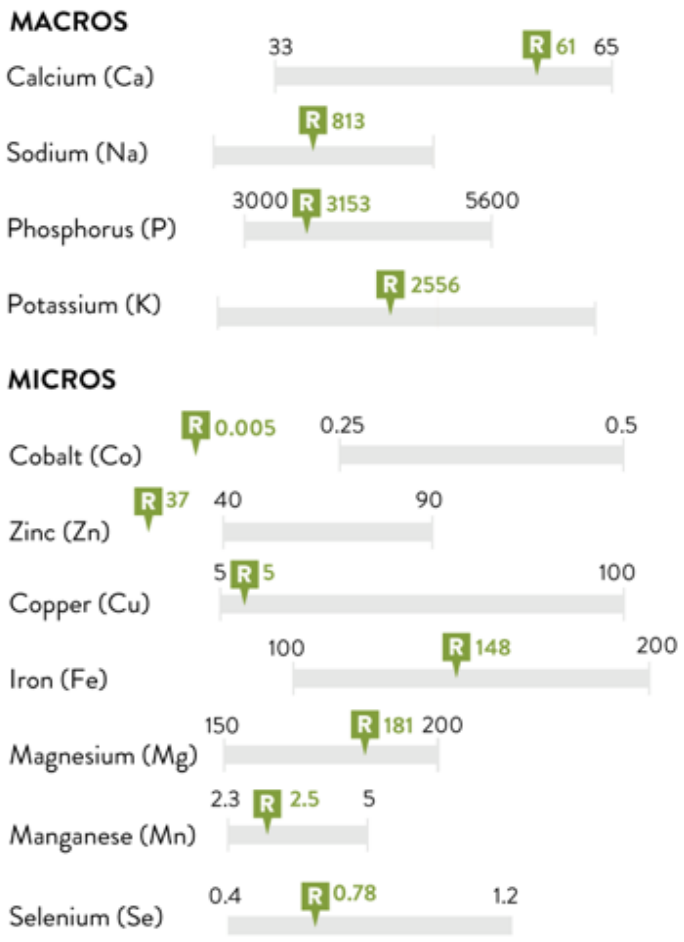
Product Description: Ancient sea salt with natural trace minerals and added Selenium

GUARANTEED ANALYSIS

CHEMICAL ANALYSIS	MAX	MIN
Calcium	0.85%	0.35%
Phosphorus		0.002%
Salt	93.0%	88.0%
Magnesium		0.06%
Potassium		0.03%
Sulfur		0.07%
Zinc		3500 ppm
Manganese		2000 ppm
Iron		300 ppm
Copper		300 ppm
Iodine		110 ppm
Selenium		90 ppm
Cobalt		50 ppm


PIGS

Pig Liver Biopsy Results



Redmond (ppm)

Expected Range (ppm)

The Results Speak for Themselves

Redmond Gives Pigs the Minerals they need.

Data is an average from three pigs given only Redmond for the entire mineral program.

Rick Gudenkauf

His Pigs on Redmond Conditioner

Study Information:

- Early information: gilts gained 2.85 lbs /day and barrows gained 2.28 lbs /day
- Later as they grew: Gilts and barrows still gaining 2/bs/day

Findings:

- All pigs immediately became more content and less vocal, especially at feeding time.
- Sows starting to ride each other again- it has been a long time since he has seen that.

- “Whatever science we have been listening to for the past 40 years has not helped us.”

Saskatchewan, R&R Evolutions

STUDY INFORMATION:

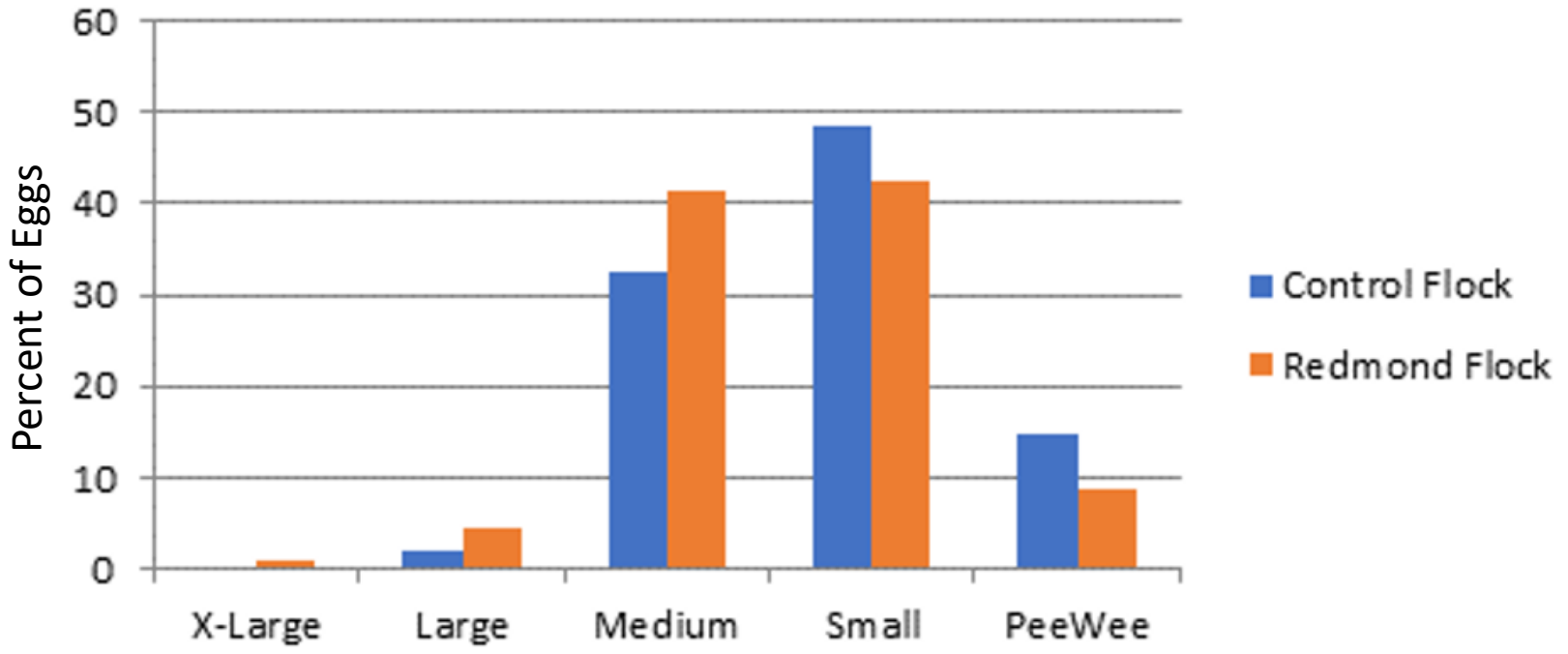
- Pre-Grower stage the feed intake and conversion both increased

STUDY FINDINGS:

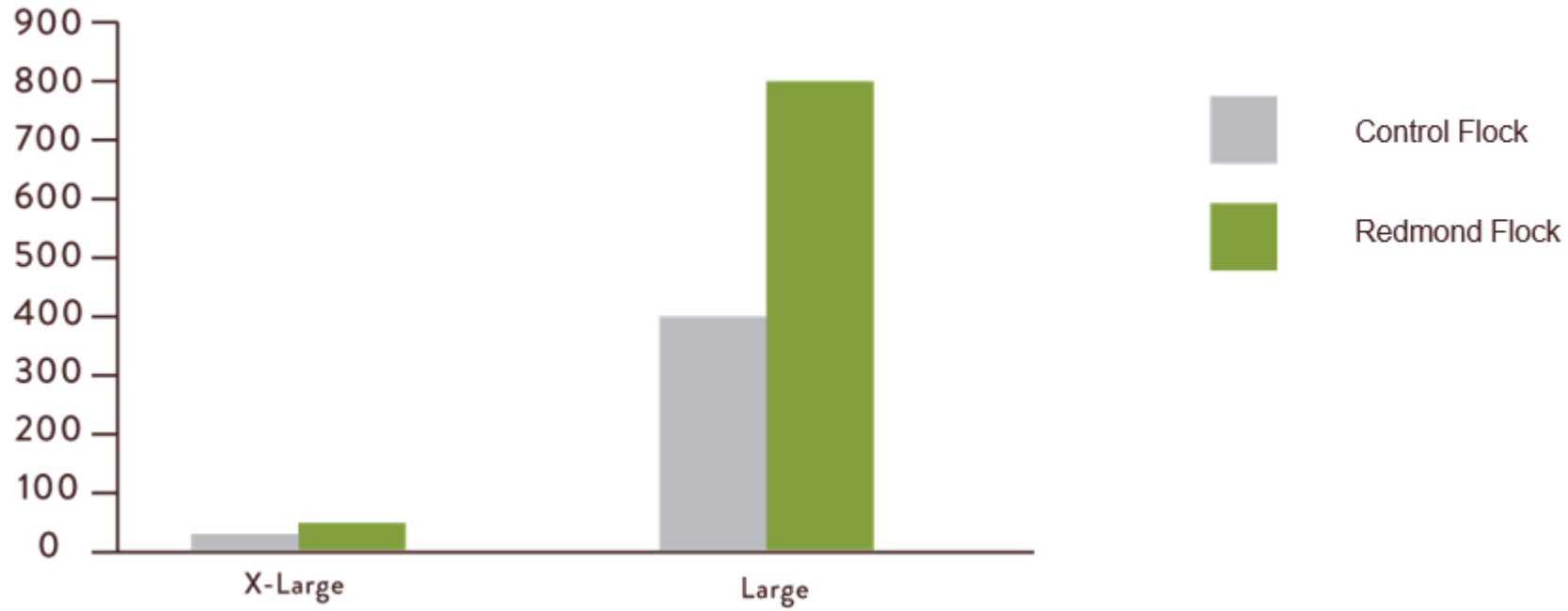
- Carcass and loin grade out is better
- Manure crust is down by 70%
- Huge reduction in culls and rejects
- Shipping heavier pigs 7 to 10 days earlier. *Weight gain in the same amount of days exceeded 20% to 23%
- With earlier shipping he saved 3 ton of feed per day
- Ammonia levels in barn reduced


CHICKENS

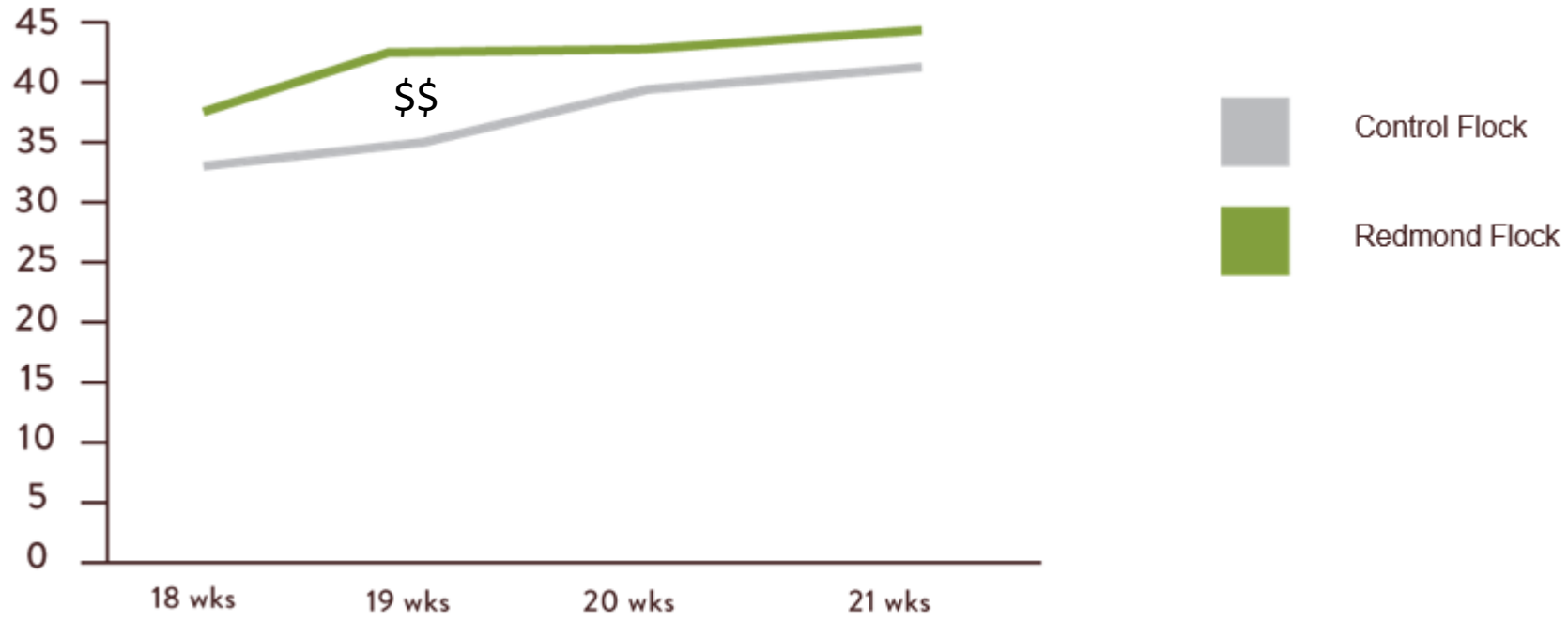
Egg Size 18-21 Weeks of Age



X-Large and Large Eggs 18-21 Weeks of Age



Redmond Resulted in More Eggs at a Younger Age



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Redmond Turkey Study

STUDY INFO:

- 4000 Turkeys half Redmond treatment, half control

STUDY FINDINGS:

- Redmond Treatment yielded 3% increase in feed efficiency
- Redmond Treatment yielded 3% more carcass weight

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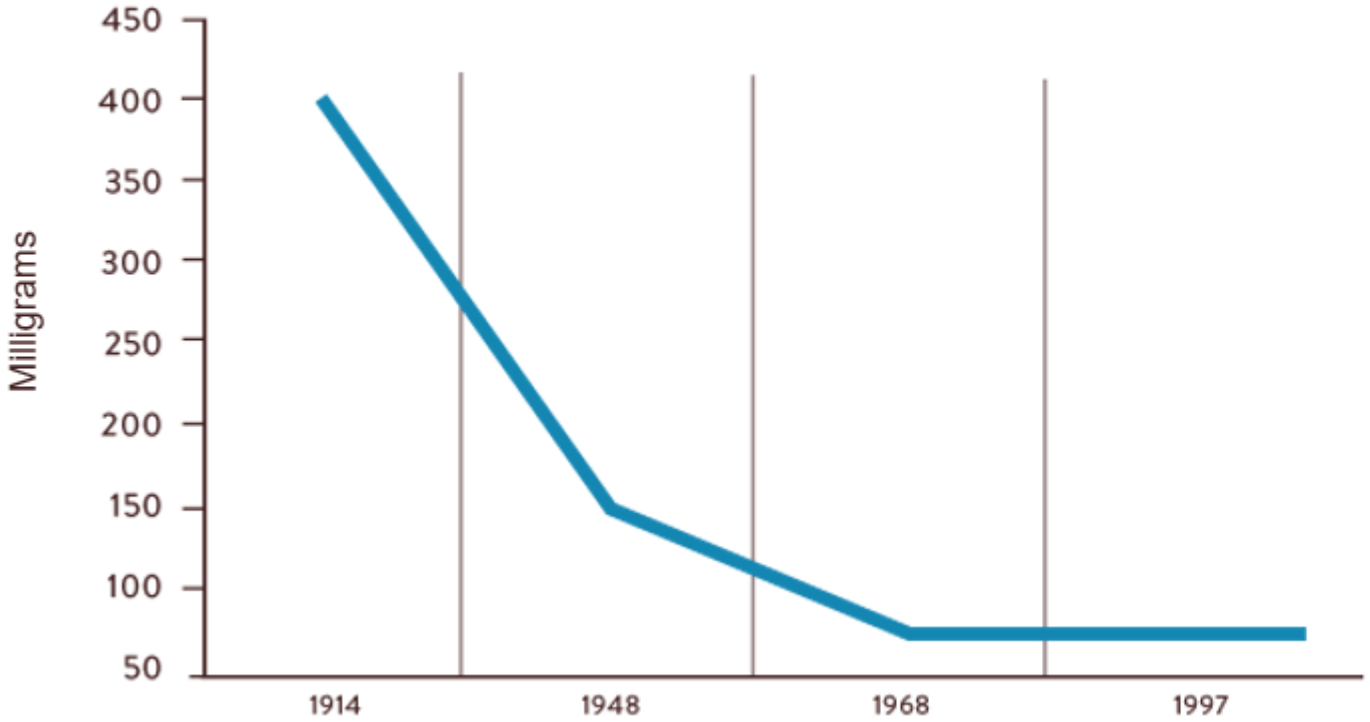
SOIL

Lower Mineral Content in US Vegetables

Soils Need More Than Just NPK



Average Mineral Content in Selected Vegetables, 1914 - 1997.

Sums of Averages of Calcium, Magnesium and Iron in Cabbage, Lettuce, Tomatoes and Spinach.

Source: Lindlahr, 1914; Hamaker, 1982; US Department of Agriculture 1963-1997

Soil Research on Alfalfa

What was applied (treatments)

Manure Only
Manure + 100 lb Redmond Salt + 13-9-19 lbs NPK
Manure + 200 lb Redmond Conditioner + 13-9-19 NPK
Manure + 300 lb Redmond SR 65 + 13-9-19 NPK
Manure + NPK 13-9-19
Manure + Redmond SR 65
Manure + Redmond SR 65 + 10 lb Humates

4 Replicates of each

- Ag Res LLC- Independent Research Company

Soil Research on Corn Silage

What was applied (treatments)

Manure Only
Manure + 100 lb Redmond Salt + 81-9-19 lbs NPK
Manure + 200 lb Redmond Conditioner + 81-9-19 NPK
Manure + 300 lb Redmond SR 65 + 81-9-19 NPK
Manure + NPK 81-9-19
Manure + Redmond SR 65 + 51 lb N
Manure + Redmond SR 65 + 51 lb N + 10 lb Humates

4 Replicates

- Ag Res LLC Independent Research Company

Alfalfa Trial Results

Treatment	TDN	RFV	Milk/Ton	Harvest Weight	Cost/Acre
Manure Only					
100 lb Redmond Salt+NPK					
200lb Conditioner + NPK					
300 lb SR 65 + NPK	52.9	95	2075	**18.3**	$66
NPK	52.8	93	2078	17.6	$25
300 lb SR65	**55.1**	**101**	**2190**	16.5	$45
300 lb SR65 + Humates	**53.6**	**97**	**2201**	**18.1**	$84

Blue- First Place
Red- Second Place
Treatments without numbers had lower results

Corn Silage Trial Results

Treatment	TDN	RFV	Starch	Milk/Ton	Harvest Weight	Cost/Acre
Manure Only						
100 lb Redmond Salt+NPK						
200lb Conditioner + NPK						
300 lb SR 65 + NPK	**73.5**	**180**	**36.7**	**3211**	22.6	$88
NPK	70.2	143	29.1	3158	**23.8**	$35
300 lb SR65	**75.8**	**220**	**44.7**	**3507**	22.3	$50
300 lb SR65 + Humates						

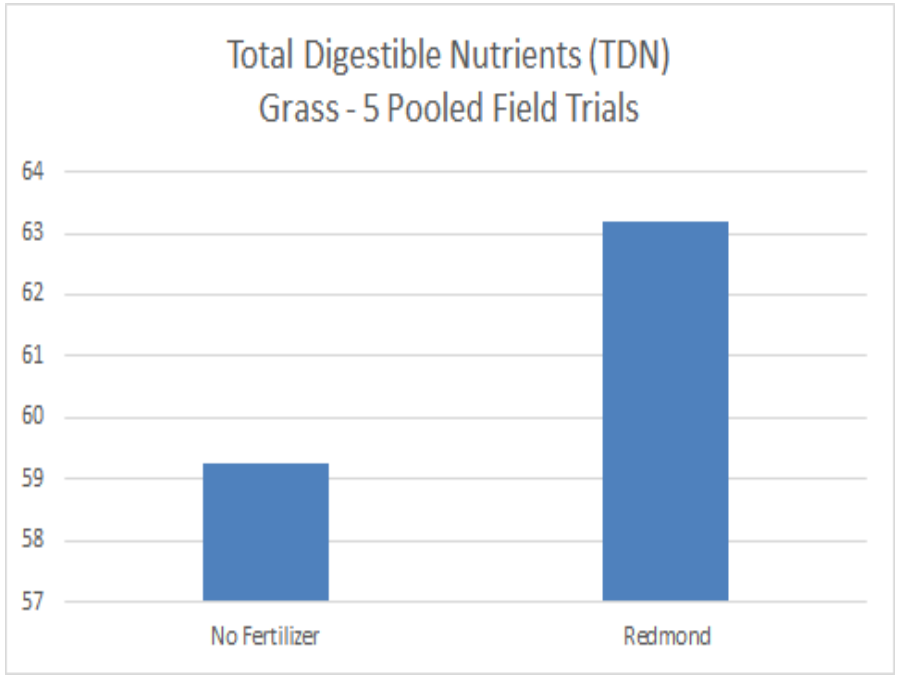
Blue- First Place

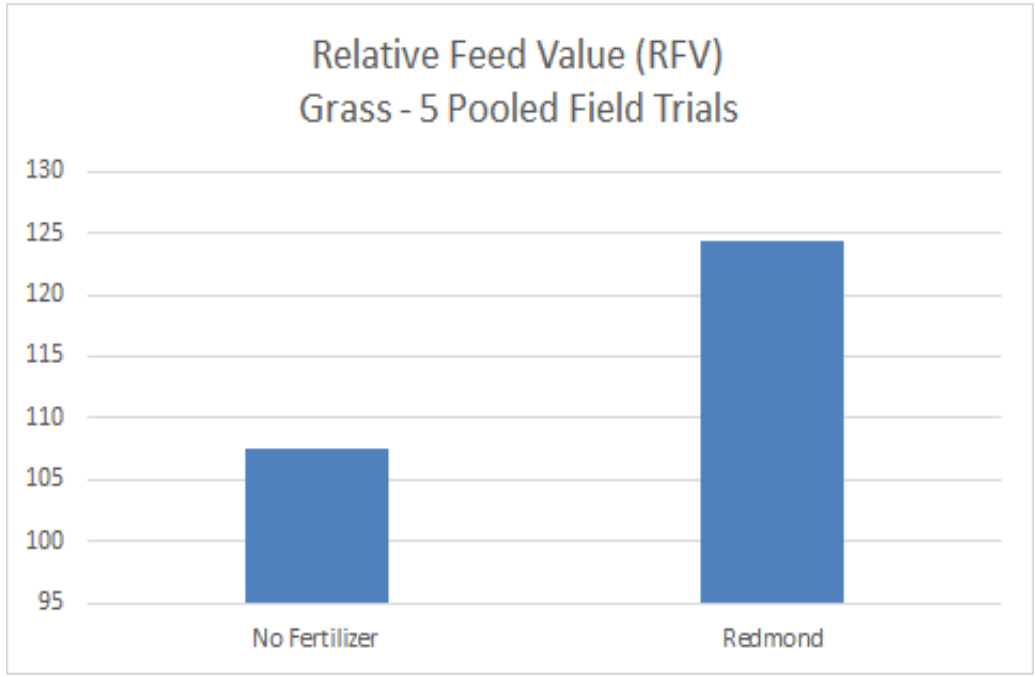
Red- Second Place

Treatments without numbers had lower results

NPK alone was the lowest of all treatments

Redmond Minerals on Grass

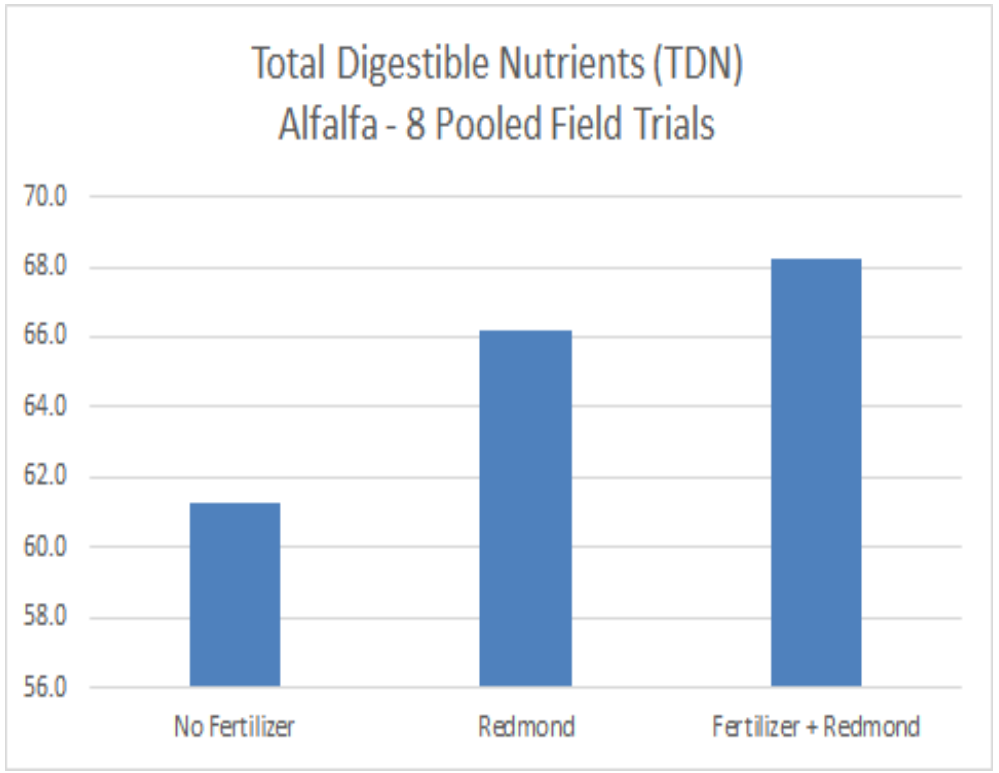


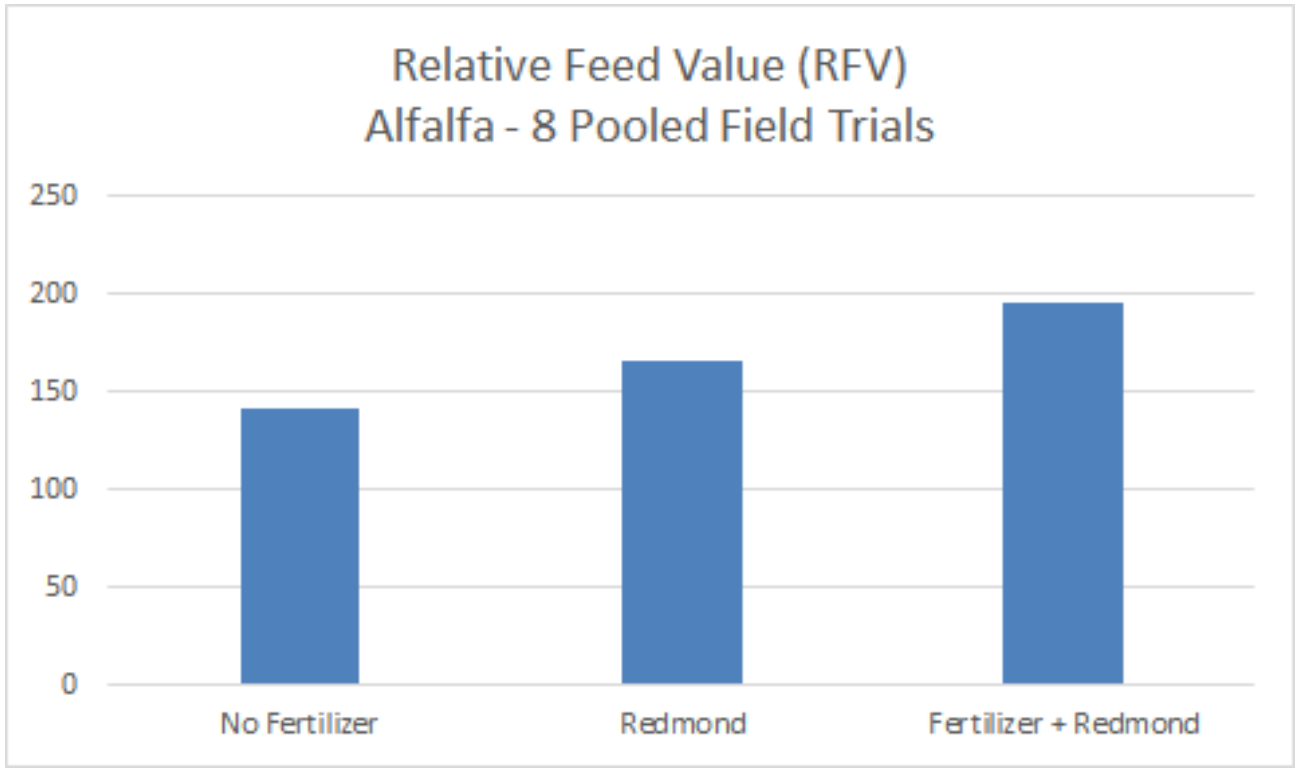


Spring Wood Farm

	Protein		Ash		TDN		RFQ		Yield	
	Ctrl	SR65	Ctrl	SR65	Ctrl	SR65	Ctrl	SR65	Ctrl	SR65
WB-IN#1	18.5		8.74		72.2		208		0.4	
WB-IR#1		19.8		9.46		71.9		201		0.75
WI-AN#2	20.9		11.1		71.6		175		0.59	
WI-AR#2		22.5		11.3		72.7		177		0.65
WI-AN#2	18.8		9.65		68.2		169		1.58	
WI-AR#2		21.8		9.17		69.4		170		2.1
E-IBN#3	13.9		8.93		63.3		150		1.6	
E-IBR#3		16.3		9.04		64.8		156		1.8
Total	72.1	80.4	38.42	38.97	275.3	278.8	702	704	4.17	5.3
% Increase		**11.50%**		**1.43%**		**1.27%**		**0.28%**		**27%**

Alfalfa Trial Results





ROI/Acre Using Higher Quality Alfalfa in Dairy Diets

Alfalfa Crop Treatment	Cost of Feed Ingredients except alfalfa	Savings/Cow/Lactation
No Fertilizer	2.16	0
Redmond SR 65	1.68	146
Redmond SR 65 + Fertilizer	.97	363

ROI/Acre Using Higher Quality Alfalfa in Dairy Diets

Alfalfa Crop Treatment	Butterfat Pounds Sold	Revenue/Cow/Lactation
No Fertilizer	2.74	0
Redmond SR 65	2.83	82
Redmond SR 65 + Fertilizer	2.90	146

ROI/Acre Using Higher Quality Alfalfa in Dairy Diets

Alfalfa Crop Treatment	Total Rev/ Acre	Cost/Acre	Net Rev/ Acre
No Fertilizer	0	0	0
Redmond SR 65	*392	54	338
Redmond SR 65 + Fertilizer	*840	142	698

* Calculation of annual alfalfa consumption/cow and how many cows one acre will feed

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ROI/Acre Using Higher Quality Alfalfa in Dairy Diets

Alfalfa Crop Treatment	Total Value/Cow/Lactation Butterfat & Feed
No Fertilizer	0
Redmond SR 65	392
Redmond SR 65 + Fertilizer	509

G.G. Soren & Vida Dryland Wheat, Montana

	50 lbs. 11-52-0 85 lbs. 46-0-0	50 lbs. SR 65 85 lbs. 46-0-0
Bushels/Ac.	35	39
Test Wt.	57.5	58.6
CP%	16.3	14.3

G.G. Soren & Vida Dryland Wheat, Montana

	50 lbs. 11-52-0 85 lbs. 46-0-0	50 lbs. SR 65 85 lbs. 46-0-0
Rev./Ac.	296	331
Cost/Ac.	17.5	8.15
Next Rev./Ac.	278.5	322.85

Parasitic Nematodes

	Total Parasitic	% Parasitic
Control	143	15.4
Treated	56	7.9

Table 1. Average total parasitic nematodes and percent parasitic nematodes in both the control and treated strips per 100 ml. of soil

Research Results Summary

- Redmond Salt drives microbial action, more N/Ac/Yr, more biomass carbon
- TDN is higher
- ADF & NDF decreases
- RFV and RFQ significantly improve
- Redmond is better than negative control
- Redmond makes other fertilizer programs work better

How Does This All Happen?

- High Cation Exchange Capacity (CEC)
- High Electrical Conductivity
- Nutrients are becoming available and getting up into the plants
- 60+ naturally occurring elements all working in synergy
- Has the ability to detoxify microbial life in the soil

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APPLICATION

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Dry Application

SALT: 25-100 lbs/ Acre

CONDITIONER: 100-200 lbs/ Acre

SR65 or SR 50: 200-300 lbs/ Acre

Foliar Application

SALT: 3-5 lbs / Acre

4-5 applications per year

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