

Veterinary Botanicals for Herd Health

Bio-Therapeutics: An Ecological Modus Operandi for Livestock Treatment



www.agri-dynamics.com

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Understanding Organics
Auburn, NY
October 2008

The Big Six

1. Excessive BUN/MUN
2. Acidosis
3. Molds/Mycotoxins
4. Mineral Excess/Deficiencies (also vitamins)
5. Water Impurities (bacteria, nitrates, pH, iron, miscellaneous pollutants)
6. Stray Voltage/Malfunctioning Milking Equipment

Trace Mineral Immunity

| | | |
|------------|------------------------|---|
| Iodine | 8 mg per 100 lbs BW | 50/50 EDDI/KI |
| Zinc | 60 mg per 100 lbs BW | Zinc Sulfate/Oxide/ Proteinates |
| Copper | 10 mg per 100 lbs BW | Copper Sulfate/Proteinates |
| Manganese | 50 mg per 100 lbs BW | Manganese Sulfate/Proteinates |
| Cobalt | 500 mcg per 100 lbs BW | Cobalt Sulfate/ Proteinates |
| Selenium | 300 mcg per 100 lbs BW | Selenium Yeast |
| Molybdenum | 400 mcg per 100 lbs BW | Sodium Molybdenate |
| Boron | 4.5 mg per 100 lbs BW | Sodium Borate |
| Chromium | 700 mcg per 100 lbs BW | Chromium Oxide/Nicotinate/Picolinate |

"Winter-Mune" Fat Soluble Vitamins

| | | |
|-----------|-----------------|----------------|
| Vitamin A | 1,315,000 IU/lb | (82,200 IU/oz) |
| Vitamin D | 320,000 IU/lb | 20,000 IU/oz) |
| Vitamin E | 6,400 IU/lb | 400 IU/oz) |

With less than excellent stored forages, feed (1) oz per 200 – 300 pounds body weight beginning in late autumn (Nov 1) through early spring (April 1)

"Soil Therapy" for Vitamin A, D & B-12



- Vitamin A in forages as beta carotene plus other carotenes: zeaxanthine, lutein, astaxanthine
- Research: Vitamin A feeding trial of 150,000-250,000 IU to adult dry cows dramatically reduced calving mastitis

"Soil Therapy" for Vitamin A,D & B-12"

- **Vitamin D = The Sunshine Vitamin**
- **Shortage during winter months**
- **Research: cows fed 43,000 IU/day produced more milk, came into heat 16 days earlier, absorbed more calcium**
- **Vitamin D needs Boron for kidney to make "activated" Vitamin D**

Vitamin D & B-12

- Vitamin D produces peptides that attack pathogens
- Vitamin D is a powerful steroidal hormone that down regulates inflammation
- B-12 (cyanocobalamin): necessary for function of Thiamine (B-1) and vitamin C

“Soil Therapy for Vitamin E”

- Fresh Pasture: Optimum Source of Vitamin E
 - Level: 80-200 IU/kg of D.M. (depending on species & soil fertility)
 - Feeding 4000 IU/day to dry cows two weeks prior to calving reduced mastitis at calving by 80%



Herbal Anti-Microbial Tincture

- Garlic
- Echinacea root
- Goldenseal root
- Barberry root
- Wild Indigo root bark
- Pokeweed root



Herbal Anti-Microbial Tinctures

- Allium sativum bulb (garlic): active anti-microbial (allicin) on virus, bacteria and parasites. Expelled via lungs (URTI), also anti-spasmodic, diaphoretic, cholegogue
- Echinacea augustifolia: echinacoside glycosides are “anti-biotic” (see Immu-Phyte)
- Hydrastis canadensis (Goldenseal); hydrastine and berberine are anti-microbial (bacteria, fungi, protozoa). Berberine also immunostimulatory and anti-spasmodic
- Berberis vulgaris root (Barberry): berberine and berbamine; anti-microbial (especially protozoa)
- Baptisia tinctoria (Wild indigo): strong anti-microbial, arrests fever, tames inflamed lymph glands
- Phytolacca americana root (Poke Root): Excellent for infected lymph glands (e.g. breast); URTI's, strong purgative

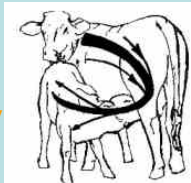
| | |
|--|--|
|  <p>Vitamin C 250 mg/ml Ascorbic Acid (5,000 IU)</p> |  <p>MULTIMIN 40 mg/ml Zn 10mg/ml Mn 15mg/ml Cu 5mg/ml Se</p> |
|  <p>Vitamin E-AD 300 100,000 IU Vitamin A/ml 10,000 IU Vitamin D₃/ml 300 Vitamin E/ml</p> |  <p>BIOCEL CBT Colostrum Cytokine Serum</p> |
| |  <p>MU-SE 10.95 mg sodium selenite/ml (5 mg selenium/ml) 50 mg Vitamin E/ml (68 USP Units)</p> |

Injectable Nutriceuticals

- Mu-Se (Selenium- Vitamin E Rx)- 1 cc s/c per 100-125 lbs body weight
 - Produce Glutathione Peroxidase (GSPx)
 - GSPx activates Neutrophils to produce H₂O₂
 - GSPx is an anti-oxidant to protect cell membrane of free radical damage
 - Vitamin E is cell membrane stabilizer
 - Vitamin E increases utilization of Selenium
 - Vitamin E enhances phagocytosis

Important Adjuncts to Phyto-Therapy

- Colostrum whey serums (S/C, IM, IV)
- Passive Immunity via cytokines
- Cows: 50-250 cc 1-3X/day
- Calves: 20-100 cc 1-3x/day



Important Adjuncts to Phyto-Therapy

- Vitamin C injectable
 - Increases phagocytosis
 - Neutralizes endotoxins



Herbal Immune Support Tincture

- Astragalus root
- Echinacea root
- Large Leaf Privet berry
- Licorice root
- Siberian Ginseng root



Herbal Immune Support Tincture

- Astragalus membranaceous Root: Enhance T-Cell & NK Cell Activity, Antibodies, Phagocytosis, Interferon
- Echinacea augustifolia Root: Increases & Complements Monocytes, Neutrophile, B-Lymphocytes
- Ligustrum lucidium Berry (Privet): Especially Immunomodulating with Astragalus and Echinacea
- Glycyrrhiza glaba Root (Licorice): Stimulates Interferon, Anti-bodies, Phagocytosis; Powerful Synergist
- Eleutherococcus senticosus: Immuno Adjuvant for B-Cells; Enhances Phagocytosis

Somatic Cell Count

1. Colostrum Whey: 40-50 cc s/c every 21 days
2. Vitamin A,D,E: 10 cc s/c every 21 days
3. Multi-Min: 10 cc s/c every 21 days
4. Vitamin C: 50 cc s/c every 21 days
5. Micro-nutrient/vitamin/trace mineral premix: 2 oz/head/day
6. Edible montmorillonite for acidosis/MUN: 4-8 oz/head/day
7. In Quarter: Every 5 days
 - Essential Oil/Herbal Infusion: 30 cc
 - OR Herbal Anti-Microbial Tincture: 15 cc mixed with 15cc olive oil
 - OR Garlic Tincture: 15 cc mixed with 15 cc olive oil.

Essential Oil & Herbal Infusion Blend

- | | |
|--|---|
| <p>Anti-Microbial Vasodilators/Immune Modulators</p> <ul style="list-style-type: none"> • Essential Oils of <ul style="list-style-type: none"> – Melealeuca – Clove – Eucalyptus – Thyme – Lemon – Peppermint – Rosemary • Grapefruit Seed Extract | <p>Anti- Inflammatory/Demulcent/ Anti-Microbial</p> <ul style="list-style-type: none"> • Infusion of <ul style="list-style-type: none"> – Calendula – St. John's Wort – Turmeric – Goldenseal – Comfrey Root • Aloe Vera Gel • Boric Acid/Saline |
|--|---|

Early Mastitis

1. Colostrum Whey: 40-50 cc s/c every 12 hours, 3X
2. Vitamin A,D,E: 10 cc s/c once
3. Multi-Min: 10 cc s/c once
4. Vitamin C: 50 cc s/c once
5. In Quarter: Every 12 hours, 3X
 - A. Essential Oil/Herbal Infusion: 30 cc
 - B. OR Herbal Anti-Microbial Tincture: 15 cc mixed with 15 cc olive oil
 - C. OR Garlic Tincture: 15 cc mixed with 15 cc olive oil
6. Udder Liniment: 2 X daily

Udder Edema

1. Colostrum Whey: 50cc s/c daily for 3 days
2. Vitamin B-12 (3000 mcg): 20 cc IM daily for 3 days
3. Herbal Diuretic: 4 capsules on Day #1; 2-4 Capsules on Days #2 & #3 depending upon severity
4. Essential Oil/Herbal Infusion: 30 cc in quarter once daily for 3 days
5. OR Herbal Anti-Inflammatory: 15 cc mixed with 15 cc olive oil in quarter once daily for 3 days
6. Udder Liniment: 2 X daily



HERBAL DIURETIC

- Juniper berries
- Parsley root
- Queen of the Meadow
- Dandelion root
- Uva Ursi
- Cleavers
- Celery seed
- Capsicum



Herbal Diuretic

- Juniperus communis (Juniper Berry): Diuretic, Anti-Microbial
- Petroselinum crispum (Parsley Root): Diuretic, Anti-Spasmodic, Hypotensive, Expectorant, Carminative
- Eupatorium purpureum (Queen of the Meadow Root): Diuretic, Antilithic
- Taraxacum officinale (Dandelion Root): Diuretic, Hepatic, Cholagogue, Bitter, Tonic, Laxative
- Arctostaphylosuva ursi Leaf: Diuretic, Anti-Microbial, Demulcent, Astringent
- Galium aparine (Cleavers): Diurectic, Anti-Inflammatory, Astringent, Alterative
- Apium graveolens (Celery Seed): Diuretic, Anti-Inflammatory, Anti-Spasmodic, Nervine, Carminative
- Capsicum annuum (Cayenne): Stimulant, Anti-Microbial, Sialagogue, Rubefacient



Herbal Anti-Inflammatory

- Jamaican Dogwood bark
- Meadowsweet
- St. John's Wort leaf/flower
- White Willow bark
- Tumeric
- Licorice root



Herbal Anti-Inflammatory

- Piscidia erythrina Bark (Japanese Dogwood): Analgesic, Neuralgia, Nervine
- Filipendula ulmaria (Meadowsweet Herb): Anti-Inflammatory, Antacid, Demulcent, Astringent
- Hypericum perforatum Leaf/Flower (St. John's Wort): Anti-Inflammatory, Nervine, Anti-Microbial, Astringent
- Salix alba (White Willow Bark): Analgesic, Anti-Inflammatory, Anti-Pyretic, Anti-Septic
- Curcumuma longa Root (Tumeric): Anti-Inflammatory, Anti-Oxidant
- Glycyrrhiza glabra (Licorice Root): Adaptogen, Anti-Microbial, Expectorant, Immune Modulator, Synergist With Other Botanicals

Acute Mastitis (Treat Early)

1. Colostrum Whey: 265 cc IV
2. Vitamin C: 250 cc IV
3. Herbal Antibiotic Tincture: 60-90 cc IV with 500 ml of fluids (e.g. dextrose)
4. Dextrose/Electrolytes IV: Rehydrate by using hypertonic saline solution
5. Vitamin A,D,E: 10 cc s/c once
6. Multi-Min: 10 cc s/c once
7. In Quarter:
 - A. Essential Oil/Herbal Infusion: 30 cc 2X/day, daily
 - B. Or Herbal Antibiotic Tincture: 15 cc mixed with 15 cc olive oil, 2X/day, daily
 - C. Or Garlic Tincture: 15 cc and 15 cc olive oil, 2X/day, daily
8. Udder Liniment: 2 X daily
9. Aspirin Boluses or Herbal Anti-Inflammatory

Note: Repeat #1, #2, #3 every 6-8 hours. Milk out affected quarters every 2 hours! Monitor temperatures **OFTEN!**

Cow Pneumonia Low/Moderate Grade (Temp <103°F with chronic cough)

1. Colostrum Whey: 50 cc s/c daily 3-5 days
2. Herbal Pulmonary Tincture: 15 cc orally and Herbal Antibiotic Tincture: 15 cc orally with equal parts Glycerin or vegetable oil daily 3-5 days
3. Vitamin C: 50 cc s/c daily, 3-5 days
4. Vitamin A,D,E: 10 cc s/c once
5. Multi-Min: 10 cc s/c once
6. Herbal Diuretic Capsules: 4 caps daily 3-5 days
7. Aspirin Bolus



Herbal Pulmonary Tincture

- Elecampane Root
- Skunk Cabbage Root
- Thyme
- Mullein Leaf
- Black Cherry Bark
- Red Clover Flower
- Hyssop



Herbal Pulmonary Tincture

- Innula helenium (Elacampane): Expectorant, Anti-tussive, Diaphoretic, Anti-Microbial
- Thymus vulgaricus (Thyme): Expectorant, Anti-Microbial, Astringent, Carminative
- Verbascum thapsus: Expectorant, Demulcent, Anti-Spasmodic, Anti-Inflammatory
- Symplocarpus foetidus Root (Skunk Cabbage): Expectorant, Anti-Spasmodic, Diaphoretic
- Prunus serotina Bark (Wild Cherry): Expectorant, Anti-Tissue, Anti-Spasmodic, Astringent, Nervine
- Trifolium pratense (Red Clover Blossoms): Expectorant, Anti-Spasmodic, Alterative

Cow Pneumonia High Grade (Temp 104°F)

1. Colostrum Whey: 265 cc IV every 12-24 hours, 3-5 days
2. Herbal Pulmonary Tincture: 30-60 cc IV and Herbal Antibiotic Tincture: 30-60 cc IV every 12-24 hours, 3-5 days with 500 ml dextrose
3. Dextrose: 500 cc IV every 12-24 hours
4. Vitamin C: 250 cc IV every 12-24 hours
5. Multi-Min: 10 cc s/c once
6. Vitamin A,D,E: 10 cc s/c once
7. Herbal Diuretic Capsules: 4 capsules daily, 3-5 days
8. Aspirin Bolus or Anti-Inflammatory Tincture

Calf Pneumonia Low/Moderate Grade

1. Colostrum Whey: 20 cc s/c daily, 3-5 days
2. Herbal Pulmonary Tincture: 5 cc orally and Herbal Antibiotic Tincture: 5 cc orally with equal parts glycerin or vegetable oil, 3-5 days
3. Vitamin C: 20 cc s/c daily, 3-5 days
4. Vitamin A,D,E: 1 cc s/c once
5. Multi-Min: 1 cc s/c once
6. Herbal/Nutriceutical Calf Bolus: 2 caps daily, 3-5 days

Calf Pneumonia High Grade

1. Colostrum Whey: 50 cc IV
2. Herbal Pulmonary Tincture: 10 cc IV & Herbal Anti-biotic tincture: 10 cc IV with 250 cc dextrose daily as needed
3. Vitamin C: 50 cc IV daily, 3-5 days
4. Vitamin A,D,E: 1 cc s/c once
5. Multi-Min: 1 cc s/c once
6. Herbal/Nutriceutical Calf Bolus : 2 caps daily, 3-5 days
7. Aspirin Bolus or Anti-Inflammatory Tincture

Calf Scours Prevention (At Birth; Incoming Calves)

1. Colostrum Whey: 20cc s/c daily for 3 days
2. Vitamin A,D,E: 1 cc s/c once
3. Vitamin C: 20 cc s/c
4. Multi-Min: 1 cc s/c once
5. Herbal/Nutriceutical Calf Bolus : 1-2 capsules and/or
6. Herbal Antibiotic Tincture: 5 cc orally for 3 days
7. Ketosis Drench: 1 oz orally
8. Herbal Immune Support Tincture: 5 cc orally

Note: Critical to feed 1 gallon colostrum within 12 hours of birth. Feed whole milk at (minimum of) 10% of calves body weight per day. Milk = 8.6 lbs/gallon.

Calf Scours Treatment

Note: Very important to provide electrolytes and dextrose at this time. If not taken orally, administer IV. Provide 4 quarts of extra fluid in addition to normal milk feedings: critical to have calf in well bedded, draft free hutch for U.V. and oxygen!

1. Colostum Whey: 20 cc every 6-8 hours s/c or IV
2. Herbal Antibiotic Tincture: 10 cc daily IV with 250 cc fluids; or orally
3. Vitamin C: 20 cc every 6-8 hours s/c or IV
4. Vitamin A,D,E: 1 cc s/c, once
5. Multi-Min: 1cc s/c once
6. Herbal/Nutriceutical Calf Bolus: 3 capsules every 12 hours
7. Herbal Astringent for parasites OR Herbal Vermifuge: 1 oz daily as needed
8. Ketosis Drench: 1 oz orally per day as needed

Herbal/Nutriceutical Calf Bolus

- Astringent Herbs
- Demulcent Herbs
- Anti-microbial Herbs
- Absorbents (Charcoal, Clay)
- Electrolytes
- Probiotics/Prebiotics
- Enzymes
- Vitamins & Trace Minerals
- Electrolytes



Calf Scours

- “Industrial Strength” Yogurt
 - Active homemade full fat yogurt
- Kelp meal 3-4 TBL
- Montmorillonite clay 2-4 TBL

Calf Scours

- Energy (NOW!)
 - 1 oz Brandy
 - 2 oz Apple Cider Vinegar
 - (4) oz Black Strap Molasses
 - Mix with Electrolyte package (or Gatorade) to make (1) quart
- Mix Energy (Now!) 50/50 with Industrial Strength Yogurt

Ketosis Drench

- Grain Alcohol
- Vegetable Glycerin
- Black Strap Molasses
- Apple Cider Vinegar
- Fermentation Solubles
- Hepatic Herbs
- Lipotropic Vitamins (e.g. niacin, choline)
- Vitamins, Trace Minerals



Ketosis (liver)

1. Ketosis Drench (oral): 12-16 oz, 1-2X daily for 1-3 days
2. Fresh Cow Bolus: 3 capsules, 2X daily, 12 hours apart
3. B-Complex: 20cc IM daily for 1-3 days

For Severe (Nervous) twice daily for 3 days add:

1. Dextrose: 500 cc IV
2. Herbal Hepatic Tincture: 60-90 cc IV with dextrose
3. B-Complex: 20 cc IV

Herbal Hepatic Tincture

- Dandelion root
- Milk Thistle seed
- Oregon Grape root
- Watercress
- Globe Artichoke leaf



Herbal Hepatic Tincture

- Taraxacum officinale (Dandelion Root): Hepatic, Cholegogue, Bitter, Tonic, Laxative, Diuretic
- Silybum marianum (Milk Thistle Seed): Hepatic, Galactagogue, Cholegogue, Anti-Hepatotoxic, Demulcent
- Mahonia aquifolium Root (Oregon Grape): Cholegogue, Antiemetic, Alterative, Anticatarrhal, Tonic, Laxative
- Nasturtium officinale (Watercress): Hepatic, Anti-hepatotoxic
- Cynara scolymus (Globe Artichoke): Cholegogue, Hepatic

Milk Fever Treatment

1. CMPK or CAL-DEX IV **and**
2. Vitamin C: 250 cc IV for down cows
3. Oral Calcium/Magnesium Drench: 1-2 packets mixed with
4. Ketosis Drench: 16 oz mixed with 3-5 gallons of warm water and drench 1-2X daily
5. Vitamin/Milk Fever Bolus: 6 capsules, 2X/day as day #2 follow-up
6. Prevention: Use #3 or #5 with #4

Milk Fever Bolus

Chelated Minerals
&
Vitamin D

| | |
|------------|--------------|
| Ca | 2700-3100 mg |
| P | 1300 mg |
| Na | 650-750 mg |
| Mg | 2700 mg |
| K | 670 mg |
| S | 1000 mg |
| Vitamin D3 | 233,000 IU |

Herbal Astringent for Parasites/Herbal Vermifuge

- Neem
- Garlic
- Grapefruit Seed Extract
- Yucca Extract
- Peppermint
- Clove
- Anise
- Thyme
- Oleoresin of Pine



Herbal Parasite/Astringent Blend

- Azadirachta indica Leaf (Neem): Anti-Microbial, Anti-Helminthic
- Allium Sativa (Garlic Bulb): Anti-Microbial, Anti-Helminthic
- Grapefruit Seed Extract: Anti-Microbial, Anti-Amoebic
- Mentha peperita (Peppermint): Carminative
- Eugenia aromatica (Clove): Carminative, Anti-Microbial, Anti-Helminthic, Stimulant
- Pimpinella anisum (Anise): Anti-Microbial, Anti-Spasmodic, Carminative
- Thymus vulgaris (Thyme): Anti-Microbial, Anti-Spasmodic, Carminative
- Pinus palustris Oleoresin: Anti-Microbial, Anti-Helminthic

Breeding Problems (Reproductive Organs)

1. **Uterine Infection (Pyometra)**
 - A. Infuse 50-60 cc Essential Oil/Herbal Infusion OR 15 cc Herbal Antibiotic Tincture with 15 cc Olive Oil
 - B. Repeat in 5-7 days
2. **Uterine Infection (Metritis): Heavy Pus Discharge**
 - A. Douche with Saline Solution: 1-2 quarts 50/50 water and 3% H₂O₂ mixed with 1 tsp of Boric Acid, 1 tsp salt, 1 tsp Epsom Salt
 - B. Follow-Up Infusion 50-60 cc Essential Oil/Herbal Infusion OR 15 cc Herbal Antibiotic Tincture with 15 cc Olive Oil
3. **Discharge During Estrus**
 - A. Essential Oil/Herbal Infusion : Infuse 50-60 cc at first sign of heat, and breed up to 12 hours later (or infuse 15 cc Herbal Antibiotic Tincture with 15cc Olive Oil)
 - B. Infuse 50-60 cc colostrum whey following insemination (warm up to body temperature)

Note: If after following step 3(b), there is still measurable discharge, consider waiting until next heat cycle. In the interim, infuse 50-60cc Essential Oil/Herbal Infusion (or 15cc Herbal Antibiotic Tincture with 15 cc Olive Oil) every 5 days until next heat. Inseminate and follow with step 3(b).

Poor Estrus (Silent Heats/Low Conception)

1. **Feed Micro-nutrient/vitamin/trace mineral Premix to all DRY COWS at 1oz/hd/day and 2oz to all FRESH COWS until bred back.**
2. **Inject 10 cc each, iron dextran, Multi-Min and Vitamin A,D,E s/c every 20 days.**
3. **Herbal Female Hormonal Tincture: 10-15 cc orally every other day, for 12 days (6 doses or until heat); For cystic cows increase treatment over 24 days, or 12 doses, every other day.**

Herbal Female Hormonal Tincture

- Chastetree
- Blue Vervain
- Black Cohosh
- Saw Palmetto
- Licorice
- Motherwort
- Wild Yam
- Peony
- Partridge Berry
- Blue Cohosh



Herbal Female Hormonal Formula

- Vitex agnus-castus (Chastetree Berry): Hormonal normalizer, Uterine Tonic, Galactagogue
- Verbena hastata Herb (Blue Vervain): Anti-Spasmodic, Sedative, Nervine Tonic, Galactagogue, Hepatic
- Cimifuga racemose (Black Cohosh Root): Anti-Spasmodic, Nervine, Hypotensive, Anti-Inflammatory, Emmenagogue
- Serenoa serrulata (Saw Palmetto Berry): Endocrine agent, diuretic, Urinary Anti-Septic
- Glycyrrhiza glabra (Licorice Root): Adrenal Support Adaptogen, Expectorant, Botanical Synergist
- Leonurus cardiaca (Motherwort): Emmenagogue, Anti-Spasmodic, Hypotensive, Nervine, Hepatic
- Dioscorea villosa (Wild Yam Root): Anti-Spasmodic, Cholagogue, Hepatic, Anti-Inflammatory
- Paeonia Lactiflora (Peony Root): Anti-Spasmodic, Anti-Inflammatory, Analgesic
- Mitchella repens (Partridge Berry): Emmenagogue, Parturient, Astringent, Diuretic
- Caulophyllum thalictroides (Blue Cohosh Root): Anti-Spasmodic, Uterine Tonic

Pink Eye

1. Herbal Eye Spray: Spray affected eyes liberally, several times daily as needed
2. Vitamin A,D,E: 10 cc s/c repeated in two weeks if needed
3. Multi-Min: 10 cc s/c repeated in two weeks if needed
4. Colostrum Whey: 50 cc s/c repeated in two week if needed
5. Kelp Meal: 2 oz daily 45 days prior to fly season
6. Moraxella bovis vaccine prior to fly season

Herbal Eye Spray

Calendula
Comfrey Root
Turmeric
Goldenseal
Hypericum
Plantago
Aloe Vera

