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# JOURNAL

of veterinary botanical medicine

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*A publication of the Veterinary Botanical Medicine Association*



# Veterinary Botanical Medicine Association

## VBMA Purpose

The Veterinary Botanical Medicine Association is a group of veterinarians and herbalists dedicated to developing responsible herbal practice by encouraging research and education, strengthening industry relations, keeping herbal tradition alive as a valid information source, and increasing professional acceptance of herbal medicine for animals.

## VBMA Goals

- Represent member veterinarians and herbalists as political and professional issues arise.
- Establish standards of training and herbal training programs and to identify established programs with the goal of developing or reviewing certification standards and Degree Programs in Herbal Medicine.
- Support ethical scientific clinical research in herbal veterinary medicine and maintain avenues for exploration of traditional care in veterinary botanical medicine.
- Explore cultural traditions such as TCM, Greek/western herbalism and Ayurveda for their proper translation to and application in modern day animal conditions and communicate these.
- Compile databases of existing science, ethnoveterinary medicine advances, and eventually a library online.
- Liaise with manufacturers so that they have an expert body to advise them on the needs of veterinary herbalists and quality control concerns.
- Support sustainable environmental, agricultural and husbandry practices.

## VBMA Certification of Competency

The VBMA seeks to provide animal owners, farmers, and veterinarians with some standard of competency by which to choose a veterinary herbalist. Veterinarians certified by VBMA will earn the title "Certified Veterinary Herbalist". Non-veterinary herbalists "Certified Veterinary Herbalism Educator." Certification by the VBMA will require passing the exam with a grade of at least 70%, submission of 3 publication-quality case reports for peer review within 1 year of taking the test and donation of at least 10 test questions for future exams. Guides available online [HERE](#). Examination is administered yearly by VBMA at the AHVMA conference in the USA, where the VBMA holds their symposium. In 2016 the exam will be held in Columbus, OH.

## BOARD OF DIRECTORS

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## SUBMITTING CONTENT

### The VBMA invites contributions to the Journal of Veterinary Botanical Medicine.

The JVBM publishes material on all aspects of veterinary medical herbalism with emphasis on the clinical application of medicinal plants in veterinary medicine, the philosophy of veterinary herbal medicine, and the phytochemistry, pharmacology, herb drug interactions and research that applies to veterinary botanical medicine.

### Editorial Policy

Subject material must relate to veterinary botanical medicine. Accepted articles become the property of the Journal of Veterinary Botanical Medicine. Contributions are subject to peer review and editing. Contributions to the Journal of Veterinary Botanical Medicine must not be submitted elsewhere.

### Contribution Requirements

Contributions should be word processed and forwarded by email to the editor, with the file(s) saved in plain text or Microsoft Word formats. All statements must be referenced and a full reference list must be included. If the statement is the author's observation or opinion, this should be made clear. All statements should be of a professional nature and exclude any inappropriate style of writing. An abstract of the article should be included. A brief profile of the author should be included.

### Peer Review

All feature articles will be reviewed by two independent peer reviewers. Reviewed articles will be returned to the author for modification if required.

### Referencing

Textual citation methods should be employed. Requires the name of author and year of publication in brackets at the end of statements or paragraphs. The reference list should be arranged in alphabetical order. **JOURNALS:** Author's surname Author's initials. Year. Title of article. Journal name volume; issue: page numbers. **BOOKS:** Author's surname Author's initials. Year. Book title. Edition. City of publication: Publisher.

**Send all submissions via email to:**  
VBMA Communications Coordinator  
[communicationscoordinator@vbma.org](mailto:communicationscoordinator@vbma.org)

# Veterinary Botanical Medicine Association



Robert Silver, VBMA President

Greetings! As president of the Veterinary Botanical Medical Association it is my pleasure to get to read, review and preview each information-dense and fascinating VBMA Journal ePublication. This Fall issue of the VBMA journal that you are looking at right now, is one of the most amazing issues I've ever read. Let me tell you why:

**A Day in the Life:** This feature gives you a glimpse of what its like to walk for 24 hours in the shoes of another holistic and herbal veterinarian. This issue details Stefan Veenstra, a member of ours from Amsterdam. From fixing his kids breakfast early in the morning and getting them off to school, to seeing patients until the end of a long work day, Stefan epitomizes the hard work and joy that most of us find in our lives and practices of veterinary holistic and herbal medicine. Our illustrious and visionary president-elect, Ihor Basko, has provided two very useful features. In our **VBMA Master Chef** section, he has several recipes that incorporate medical mushrooms into meals that are tasty, healthy and healing. Yumm! As if these great recipes weren't enough, Ihor has written a very thoughtful and philosophic article about the connection between all things living and our living and breathing planet Earth. Well worth the read. Many newsy features will help to keep you up-to-date with the ever-growing and ever-improving VBMA of which you are a member. At our Annual General Meeting, held this year in Columbus, Ohio at the AHVMA Annual conference, two very excellent **VBMA scholarship essays** were awarded our \$500 scholarship. We have both essays here for all to read. One of the award recipients, Erika Ancier, a veterinary student, Class of 2018 at Western University of Health Sciences, has volunteered to be our student liaison and provide outreach to student holistic clubs at veterinary colleges. And, in case you are a student and were unaware, **we're now offering VBMA student memberships at no charge** to encourage the study of veterinary herbal medicine by our next generation of veterinarians. Such a deal! Laurie Dohmen covered our **Annual Herbwalk**, also held in OH.

**Our first VBMA webinar this summer was given by Master Herbalist David Winston on the topic of Adaptogens.** These are tonic herbs that help the body adapt to stress and improve strength and stamina. Certainly, adaptogens are good to modulate our patients' stressors, but for members of our stressful veterinary profession, these should definitely be part of our own daily fare. Member **Katy Kangas from San Diego has contributed a well-written and well-documented scientific article about the Nrf2 cellular metabolic pathway** that is responsible for our endogenous antioxidant production. I found this well worth the read, and it helped me understand more about endogenous antioxidants. Our herbal monographs include an adaptogenic herb, **ginseng**, and one of the most popular and written-about herbs today, **turmeric**. Many thanks to Cindy Lankenau for these monographs and her many wonderful and fact-filled contributions to our association. Cindy is a large animal practitioner who excels in the use of herbal therapies for her patients. In fact, she presents several case reports in this issue documenting her approach and protocols for several of her patients' problems. **This summer was the VBMA Eco-tour, held in the wet and wonderful Quinalt Rainforest on the Olympic peninsula of Washington State.** It was such a fantastic time for all that it was I who contributed this event's article. Our domestic Eco-tours are planned each year to explore the medicinal plants growing in different climate zones around the US. This makes these events more accessible to members who live close to the Eco-Tour location and who have difficulty getting away for more distant, longer trips. Of course, all members are welcome to participate, no matter how far away you live. We had two members from Australia and one from UK attend this year, as a case in point. If you know of potential sites near you, please let us know. If you are willing to help organize these events, so much the better. **And last, but certainly not least, is the report by Cindy Lankenau about the VBMA/Chi Institute trip to Outer Mongolia.** Very interesting.

Enjoy, enjoy, enjoy!

Rob Silver, Fearless Leader, VBMA 2015-2017

## EDUCATIONAL EVENTS

### NYCAVMA Annual Conference

March 23rd -26th, 2017

Jeffrey Yuen will be speaking at the NY Complementary and Alternative Veterinary Medical Association's annual 2017 conference, March 23rd -26th, 2017. We already have a site reserved at [www.MenlaMountain.org](http://www.MenlaMountain.org).

### United Plant Savers/Equinox Botanicals 2017 EcoTour

APPALACHIANS OF SOUTHEASTERN OHIO  
Friday May 12th -Sunday May 14th, 2017  
Led by Paul Strauss, featuring Chip Carroll

### Philosophy of Western Medical Herbalism Course

April 28-30, 2017

Outer Banks, North Carolina

Drs. Laurie Dohmen and Kris August

This course is an introduction and overview of the philosophy of Western Veterinary Medical Herbalism. We will be discussing the history of herbal use and plant identification on a multi-sensory level. Lectures include herb selection, formulation and administration options for our patients. Included are hands-on labs and an herb walk, compassionate care and more!

## VBMA EDUCATIONAL SCHOLARSHIP

The Veterinary Botanical Medicine Association currently offers a yearly educational scholarship in the amount of \$500 in order to promote herbal education.

### 2017 Requirements

A 1000 word essay, topic to be announced in the next few weeks, to the VBMA office at [office@vbma.org](mailto:office@vbma.org) by this date for consideration. The essay will be read and the award decided by the President and President-Elect of the VBMA. The winning essay will be published in the VBMA journal and on the VBMA website.

### Announcement of Award:

The winning essay will be announced at the VBMA's annual meeting at the AHVMA convention of that year.

### Use of Award Money:

The recipient of the educational scholarship may use their award money for any AHG (American Herbal Guild) event or class by an RH(AHG), and any CIVT, Chi, IVAS, VBMA or an equivalent veterinary herbal class. Alternatively, the funds may be used for the purchase of herbal books, VBMA CDs, teleconference registrations or similar educational events.

# TABLE OF CONTENTS

## Case Reports

- 32..... REPORT: Treatment of Calf Pneumonia with Western Herbal Medicines by Cynthia Lankenau, DVM, CVA, RH (AHG) Colden, NY
- 38..... REPORT: Possible Pesticide Contamination in Two Equines by Cynthia Lankenau, DVM, CVA, RH (AHG) Colden, NY
- 40..... REPORT: Cardiac Deficiency in an Equine by Cynthia Lankenau, DVM, CVA, RH (AHG) Colden, NY

## A Day in the Life

- 09..... Featuring VBMA Member Stefan Veenstra DVM, Amsterdam



## Oxidative Stress & the Nrf2 Pathway

- 24..... How the Body's Powerful Antioxidant Network Can Affect Chronic Inflammation & Disease by Katie Kangas, DVM, CVA, CVCP

## 2017 NYCAVMA Conference

- 09..... New York Complementary & Alternative Medicine Association Annual Conference: Jeffrey Yuen at Menla Mountain



## VBMA Masterchef

- 10..... Rehabilitating Mushroom Broth Recipe by Ihor Basko, DVM, CVA, Kauai, HI
- 10..... Medicinal Catnip Mushroom Butter Recipe by Ihor Basko, DVM, CVA, Kauai, HI

## Herbal Monographs

- 42..... American Ginseng, *Panax quinquefolium*
- 45..... Turmeric, *Curcuma Longa*



## VBMA SCHOLARSHIP WINNERS



This year, we were able to award TWO VBMA Scholarships at our annual meeting in Columbus, OH. Pictured above is VBMA President Robert Silver presenting winner Erika Ancier with her certificate. Iina Valkeisenmäki, our other winner, was not in attendance. If you'd like to read the amazing essay contributions, you'll find Erika's [HERE](#) and Iina's [HERE](#), or you can just scroll down.

## VBMA STUDENT OUTREACH

### STUDENT MEMBERSHIP NOW FREE!

The VBMA realizes how vital it is for our message to reach veterinary students, as well as how that particular time in an aspiring vet's life can be financially challenging. So, we've decided to make membership for all veterinary students FREE. Erika Ancier, one of our 2016 VBMA Scholarship winners (see left) has generously volunteered to champion this cause, working with our Communications Coordinator to add student-oriented features to the VBMA website, as well as create a student facebook page to allow for the fostering of a student community interested in pursuing the use of botanical medicine in their future endeavors.

If you'd like to assist with this project, please email us at [communicationscoordinator@vbma.org](mailto:communicationscoordinator@vbma.org). Our thanks to Erika for her enthusiastic involvement!

## Medical Marijuana & Your Pet The Definitive Guide

### Veterinarians Rave About This Book!!!



Dr. Robert J Silver, a nationally-renowned holistic veterinarian, has written this important book on medical marijuana for pets.

Susan Wynn, DVM, CVA, CVHC, AHG  
([www.susanwynn.com/](http://www.susanwynn.com/))

"I rarely have the opportunity to read a groundbreaking book, and it gives me great pleasure to write this endorsement for Dr. Silver's book, *Medical Marijuana and Your Pet*. Both pet owners and veterinarians will find this book invaluable."

Cheryl Schwartz DVM (author of *Four Paws Five Directions*):

"Dr. Silver has written an amazing, pioneering book, *Medical Marijuana & Your Pet*. He brings experience, expertise, scientific data and guidelines for use in an enjoyable, well documented book that will help an enormous number of animals and their humans.

Thank you, Rob, for your courage!!"

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For additional details email Amy Keane, VBMA Communications Coordinator, at [communicationscoordinator@vbma.org](mailto:communicationscoordinator@vbma.org).

# A DAY IN THE LIFE

**Featuring Stefan Veenstra**

DVM, Amsterdam

[www.natuurlijkgezondedieren.nl](http://www.natuurlijkgezondedieren.nl)

Monday.

The morning is, like many parents with young children, quite a hectic time. Rushing from bed with our daughter (6yr) lying next to me in our 3 persons homemade bed (Yes, happens more often...). My son of 4 calmly awakens and within a fraction of a second rushes out of his bed and instantly wants a sandwich with peanut butter and banana. My youngest son (1yr) slowly starting to hear the noises of going to the toilets, being delighted it is morning and enjoying all the morning rush. At breakfast trying to grab every bit of food he is able to reach (besides clothes and hair of his sister and mom sitting next to him).... Me, preparing breakfast and the lunch boxes and my wife (pregnant of our fourth child, expected in January) is gently, but continuously, supporting the oldest two to get ready for school.... They should get their clothes on, eat and brush their teeth.... Somewhere in between there is always a delay..., a morning dream, a cup of milk falling down the table, a cat eating -the almost- leftovers, or something else which gives us more stress.... But in the end.... we are always on time at school....

After dropping my 2 oldest children at school I go to work. My clinic is a 20 minutes' drive from home when there is no traffic jam. Most days it is not that bad and I should reach work within 35 minutes. The clinic is an integrated veterinary clinic together with a pet store, selling mainly raw food products and good quality canned and dry food, some natural toys, harnesses and a broad line of orthomolecular and phytotherapeutic food supplements. The most essential things needed for a good balanced life for pets in Amsterdam.

I start at 9.30 AM and my morning starts with a wound control of dog I did surgery on for an otohematoma. Unfortunately, she thought the collar and the given antibiotics were not really needed and therefore the ear was quite infected. I do use Arnica D30 and Hamamelis D30 for an otohematoma, but in this case I did not dare for it was quite large and close to the base of the ear.

The next patient is a control of a dog with a thickened bladder wall. No tumor is diagnosed, but it is suspected. First treated with a variation of Ba Zheng San and responded well on this herbs. No more blood in the urine and no clinical symptoms. I still felt a lot of stagnation in the Bladder and therefore, the problem has not resolved yet. I changed the herbs a bit to remove more Phlegm and stagnation in the bladder. We have planned another ultrasound to see if there is an improvement in the bladder.

The next patient is Kaitlin, an Australian Shephard who is having epileptic seizure, which started 3 days after a rabies vaccine. She was after the first treatments fine, no more seizures and very relaxed. She is been on Tian ma gou teng yin, a nosode of the rabies vaccine and a combination of flower essence. After 1 month I changed her to Liu wei di huang tang. She was fine until last weekend, all of the sudden she had 3 more seizures... I discovered more heat in the Gallbladder and Liver again and she is feeling hot. Changed the herbs to Tian ma gou teng yin again together with some herbs to remove more Wind and Heat. I tried to find a reason for this drawback. It is now end of September and the temperature should be around 20 degrees with wind and rain, and we should be in the middle of autumn.... But last week we reached 33 degrees and it is sunny, no rain and little wind. This change of a normal season could be a reason for this fits last week... Unfortunately my knowledge about astrology is minimal... but it is getting more and more intriguing... Also sun-storms are very influencing Chinese Wind and Heat patterns.

Next patient is a control of an old retriever. Just saw him once before and she is suffering for lots of elderly problems. The main complaint is arthritis, diarrhea and a hypothyroid problem. The biggest problem on this moment is a Kidney Yin Deficiency. Started him on Liu wei di huang tang. For the arthritis I put him on glucosamine complex and aspitol. After 2 weeks he is walking much better and the energy is increased a lot. No much panting and the Yin has increased

a lot. The feces are still not perfect however... Changing the herbs a bit with Rou Dou Kou and Wu Wei Zi and a gemmotherapy *Vaccinium vitis idaeus* for the intestines.

Another patient with a history of epilepsy. He still is on regular drugs and went all right with much less seizures. But he was not free of seizures yet.... The seizures went from heavy to very little ones and he is energetic, happy and playful again. He is besides some herbs and flowers also on gemmotherapy: *Ficus Carica*, *Tilia Tomentosa* and *Castanea Vesca*. The last seizure was last week when it was 33 degrees. My suspicion of the cause of this extreme hot weather has been confirmed (not double blind, but well...). We will see what the change will be in the next weeks, otherwise we will schedule gold implants to treat the seizures.

After a short break with some telephones and answering emails I continue.

I am seeing a very old New Foundlander of 12.5 year. Been seeing her for lots of problems, arthritis, skin problems and she is under control with herbs, supplements and food. We started 1 month ago with injections of anabolin to increase her muscles in the back. They seem to respond and this will be the second injection.

The next patient is a small Chihuahua which is traveling a few times a year to Bonaire. For every journey we treat her with Flower essences (we have great brands of flower remedies here in the Netherlands: Star Remedies from Madeleine Meeuwessen and the Nederlandse bloesemremedies from Bram Zadelberg) to help her ground better. Right now she also has a bit low Spleen Qi, which I treated with Ba Zhen Tang.

Next is a castration of a Labrador. Normally we don't suggest it, but the dog has a lot of prepusitis problems and, so far none of my herbs or supplements seem to have effect. Because the owner has a small child crawling on the floor this is her decision to tackle the problem. The anesthetic is complemented with some flower essences (Guardian and animal care spray from Alaska flowers work great), traumeel and detoxification herbs to help them recover from the surgery and anesthesia better. The caretaker always will be their until they are fully asleep and are waiting for the animal to recover from the anesthetic. In the end we hardly see traumatized animals after a surgery.

Kelev is the next patient, a Romanian street dog of 11 years old. She is suffering from severe back pain and stiffness of the hind limbs. So far they did not treat her. Because of her age and finances, we didn't take X ray's and put her on a glucosamine combination, omega 3 and on herbs Bu zhong yi zhi tang with an addition. There was a lot of Phlegm in the body. 4 weeks later she was much better already. I changed the herbs to increase more Qi and Blood (Du huo ji sheng tang). She came back today and I noticed that her energy did increase, but the stagnation in the joint was a bit worse. Although the owner still reckons she is improving a lot, I changed the herbs to Shen Tong Zhu Yu tang with an addition to increase more Qi and Blood.

One of the last patients is a cat who will be here for the first time. She has a lot of issues like itching, intestinal and sometimes stomach problems, also she has some absences during her whole life. She has been to a lot of vets and she is right now on prednisolone. She is quite a spiritual cat which energy was heavy. Her owner is an energetic healer herself. So she knows about this and has discussed the cat with some colleagues as well. After a long anamnesis we found out the owner has a lot of stress herself and another cat died in January this year. This is giving a lot of grief in the cat and feels like a heavy burden on her. Both cats were meant to support the owner with her work and she doesn't feel she is able to do it right now on her own, she is lost a bit. According to an animal communicator she is having the absences to relieve all the tension. Sounds for me a very plausible reason. Examination teaches us that she is having a severe Yin Deficiency of Kidney and Heart. A little bit Liver Yang rising. Therefore I treated the cat with Tian Wang Bu Xin with a few herbs to relieve the Wind and Liver Yang. For her emotional stress and her task in the household I gave her some flower remedies.

Next patient is a 10 yr old Westy, taken over from the shelter. She has a lot of skin problems, and is on cyclosporine and special food. The diagnose is atopic dermatitis. She has a Kidney Yin Deficiency with Liver Yang rising and Heart Yin deficiency with Heat and Phlegm in the skin. The main herbs are Tian Wang Bu Xin with a few additives to remove Heat and Phlegm from the skin. Also probiotics, omega 3 and put him on raw rabbit. Two weeks later she had no dermatitis problems anymore. Her syndrome changed a bit towards a Qi and Blood Deficiency. I combined Ba Zhen Tang with a few herbs to balance the heart and Liver. Since the biggest problem is much better and the energy is much

better, I discovered some Stagnation in the shoulder and knee. I have put him on some glucosamines as well. My last patient of the day is a very aggressive dog who is in need of a vaccine.... With a muzzle I am able to give him an injection of a Leptospirosis vaccine. For his aggression I put him on a flower remedy. Hopefully next appointment will be a bit better.

19.15 o'clock. Finishing my day at the clinic and driving home.

My wife just finished putting the children in bed. My daughter just hearing me entering the hallway and calling my name. Hearing in a few minutes the most exciting moments of her day I give her a big hug and kiss. The rest of the children are sleeping. Dinner is waiting and my evening is always a very quiet one in front of the television with a nice cup of cappuccino and a few cups of tea...

Have a great day and it is a pleasure writing a day of my life.



# NYCAVMA: JEFFERY YUEN & JIM SKOIEN



The NY Complementary and Alternative Veterinary Medical Association proudly presents:



**Jeffrey Yuen & Jim Skoien**  
**March 30th - April 2nd 2017**  
**NYCAVMA Annual Conference at Menla Mountain in Phoenicia, NY**

Join us and spend four incredibly informational days in the beautiful Catskill mountains: one day on autoimmune conditions, one on acupuncture, one on herbal medicine, and another on stone medicine.

***Don't miss out on this unique opportunity!***

Registration information can be found at:  
[www.nycavma.org](http://www.nycavma.org)

**Anyone from anywhere can join the NYCAVMA – sign up and save on your registration fee!**

## Recipes for Pets - Mushrooms that Benefit Health

by Dr Ihor Basko, DVM, CVA

### Rehabilitating Mushroom Broth

#### Ingredients

- 1/3 cup of dried mushrooms (shiitake) soaked in 1 cup of water over night (save the soaking water too)
- 1 cup of beef soup bone
- 1/2 cup chicken hearts and gizzards
- 1/2 teaspoon sea salt or 1 tsp Konbu seaweed
- 1/3 cup celery
- 1/3 cup parsley
- 1 teaspoon miso
- 3 cups of water

#### Directions

1. Put water, celery, parsley, soup bone, salt (or konbu), and mushrooms into a pot.
2. Bring to a boil and let simmer for 45 minutes.
3. Remove bones, vegetables, and mushrooms.
4. Remove chicken hearts and gizzards and save for other meals.
5. Add miso, and the soaking water from the dried mushrooms, and stir well.
6. Strain excess debris to make a clear broth.

#### Dosages

Administer the broth (using a syringe) every 1 to 3 hours, give 1 cc per pound of body weight, 4 to 6 times a day if not eating. If your pet is eating, mix the broth with food and give 1 to 3 teaspoons (for small dogs and cats) with each meal.

I prefer dried mushrooms because they have a longer shelf-life, are convenient, and have better flavor and potency. Buy dried mushrooms whenever you can. The best time to purchase dried mushrooms is during harvest in the Fall. I buy a diverse variety of mushrooms (shiitake, crimini, porcini, maitake, and chanterelles) and use them with fresh mushrooms when available.

### Medicinal Catnip Mushroom Butter

#### Ingredients

- 1/4 ounce (1/3 cup) dried mushrooms (shiitake, maitake, porcini or combo)
- 1 teaspoon minced (fresh if possible) catnip leaves
- 1 tablespoon of nutritional yeast
- 1/2 cup of organic chicken or beef broth (no onions!)
- 1/2 cup organic butter or ghee, softened

#### Directions

1. Heat the broth to "hot" and pour onto mushrooms sitting in a glass bowl (let soak for 2 hours).
2. Put the mushrooms and broth into a blender and blenderize.
3. Pour contents into a sauce pan, add catnip, and heat.
4. Cook on "simmer" until half of the water is reduced (approximately).
5. Remove from heat and let stand until the liquid mushroom mix is just "warm."
6. Pour back into the blender or mixer and add the nutritional yeast, softened butter and blenderize well again.
7. Pour into a wide mouth glass jar for storage in the refrigerator.

#### Dosages

Dose as a tonic: Give 1/4 teaspoon per 5 lbs of body weight, twice daily.

This is a good way of administering medicinal or culinary mushrooms to a cat. It is important to keep in mind that results can only occur over months of therapy with chronic diseases. In other words, these kinds of treatments take time.

So, if you're using any sort of mushroom tonic, give it at least 1-3 months before you determine its effectiveness.

**Erika Ancier**

Western University of Health Sciences  
CVM, Class of 2018

## **The Power of Herbs Against Cancer Herbal Medicine: How Could We Possibly Synthesize Something That Heals Better Than Nature Itself?**

Traditional Chinese herbal medicine has existed for thousands of years, making it one of the oldest known forms of healthcare. The fact that herbal medicine is still practiced today is a testament to its value as a form of medicine. Modern Chinese herbal medicine utilizes scientific research, clinical experience, and a comprehensive understanding of conventional therapies in their approach to the treatment of various disease processes. Utilizing herbal medicine is particularly valuable in the treatment of conditions for which western medicine still lacks consistent, beneficial therapy, such as cancer.

Regardless of animal species, cancer remains a major cause of death, accounting for about 50% of pet losses each year. Cancer occurs when the body's immune system cannot stop cells from replicating at an abnormally fast, disorderly pace and forming a mass known as a tumor. Western medical approaches to treatment consider the cancer as something separate from the animal that must be killed via chemotherapy or radiation. This inevitably kills the patient's healthy surrounding tissue as well and rarely leads to a long-term favorable prognosis. Chinese medical approaches to cancer consider this new growth as part of the animal, made by the same vital energy that generated other parts of the patient's body. Therefore, herbs and proper nutrition are used to strengthen the body so it has a better chance of fighting the cancer itself.

The treatment of cancer with Chinese herbs has been traced back to the second century BCE, when it was described by Huang Di and Nei jing in the book, "Yellow Emperor's Classic of Internal Medicine." Over the years, there has been extensive evidence supporting the variety of preventative, palliative, and curative effects that plants offer against cancer in both human and veterinary medicine. While many holistic practitioners have been utilizing herbal therapies as treatment or complimentary medicine in their oncology patients for years, the majority of veterinarians shy away from prescribing botanicals due to a lack of medical research compared to conventional drugs. It is only more recently that herbal medicine has begun to make its way into mainstream veterinary clinics thanks to a growing body of scientific research studies that demonstrate the mechanisms by which these herbal compounds work.

Unlike most conventional cancer treatments that deplete the animal's immune system, herbal therapies aim to boost the patient's immune system, supporting the animal's first line of defense against neoplasms. Beta glucans, found in the cell wall of seaweed, grain, mushrooms, and yeast, have been utilized for their potent immunomodulating properties. Beta glucans increase the numbers of natural killer T cells and upregulate phagocytosis by macrophages, neutrophils, and natural killer T cells. Glucans also support humoral immunity by stimulating secretion of cytokines such as IL-1, IL-6, TNF, and INF. Medicinal uses of mushrooms and seaweeds have a long history of use in Asia, but thanks to recent research on the mechanisms of beta glucans, western science is finally catching on to the immunoprotective benefits of phytochemicals. The growing scientific research on herbal medicine makes an undeniable case for their use in healthcare that even the most closed-minded, conventional practitioners cannot afford to ignore. The FDA recognizes glucans as having a wide margin of safety with no known contraindications. Therefore, they have been researched enough to ensure that beta glucans are a safe addition to any cancer or immunodeficient treatment protocol.

Cannabinoids have been suspected to have anti-carcinogenic properties for quite some time, but research has been slowed by the controversy over marijuana's psychoactive effects. A recent study conducted at Texas A & M College of Veterinary Medicine demonstrated that cannabinoids induce ligand-dependent phosphatases leading to apoptosis of cancer cells. Unlike harsh chemotherapeutic agents, cannabinoids alleviate an animal's pain, stimulate appetite, and

reduce inflammation while preventing metastatic disease. These properties alone have caught the attention of conventional practitioners, many of which are now open to including marijuana extracts along with chemotherapy to help relieve unwanted side effects.

While most chemotherapeutic agents have non-specific cytotoxic mechanisms, there are herbal therapies available that have been shown to be relatively specific to cancer cells while sparing healthy cells. Artemisinin is a compound extracted from the plant *Artemisia annua* L., "sweet wormwood," which is also known as the Chinese herbal Qing Hao. Artemisinin contains two oxygen atoms linked together by an endoperoxide bridge, making this phytochemical react with iron molecules to form free radicals. This property makes it ideal for cancer treatments because neoplastic cells sequester relatively large amounts of iron, which react with artemisinin to cause rapid and extensive damage and death to cancer cells while sparing normal cells. Scientific research supports the effectiveness of Artemisinin against 55 cancer cell lines, finding it is comparable to conventional chemotherapeutic agents while far less toxic systemically. Plants have a long history of use for the treatment of cancer and many of the conventional chemotherapy agents were derived from active ingredients found in herbs. These drugs are often not a direct isolate from plants, but instead are synthesized to mimic the chemical structure and function. This distinction is important because it highlights the disconnect between the natural healing benefits observed by whole plant products and the harsh, debilitating results often observed from treatment with synthetic pharmaceuticals. How could we possibly synthesize something that heals better than nature itself? The anti-carcinogenic properties of herbs are not merely molecular structures which we can artificially produce in a lab. These properties are a product of a complex, harmonious balance of various components that plants naturally produce in perfect proportions for their own vitality.

While the growing body of research behind plant derivatives provides the hard science necessary to widen the acceptance of herbal products in veterinary medicine, optimum wellness is better achieved by providing our animal patients with whole, organic botanicals that even the best scientist cannot mimic. Since whole plant products lack the financial appeal that drives major pharmaceutical companies to fund large medical research studies, the scientific backing may never be as strong as that of synthetic drugs. Despite this barrier in medical research, the thousands of years of use and lives saved makes botanical medicine a valuable modality for any open-minded veterinarian hoping to offer their patients the best health care available.

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## **The Emerging Science of Herbal Medicine - from Tradition to the Potential Role of Herbs in Solving Some Chronic Conditions in Veterinary Medicine.**

*"Natural forces are the healers of disease" – Hippocrates*

Treating chronic conditions can be a real challenge to a veterinarian. The pathophysiology is often elusive, and modern research has failed to find definitive solutions to diagnostic methods or treatments. Moreover, we live in a time where the incidence of chronic conditions and degenerative diseases is at an all-time high, both in companion animal and human population. Diseases such as degenerative joint disease, diabetes, heart failure, irritable bowel disease, asthma, chronic autoimmune disease and cancer are all very common in veterinary medicine.

Because of the limitations of conventional medicine, some veterinarians have started to seek for a more integrative approach, where attention is paid to health and healing of the whole animal. I became interested in herbal medicine after pursuing my studies in acupuncture and seeing what acupuncture did to my 15-year-old senior dog, Mysla. She suffers from degenerative joint disease and has elevated liver enzymes for an unknown reason. After receiving acupuncture, Mysla is now enjoying a significantly improved quality of life and is a living testimonial to the tonifying effects of the treatment. When I learned that herbal medicine can also achieve similar results, I became transfixed. How can herbs be so effective in tonifying the body and treating chronic disease, when modern medications seem to often fail at it? I became to look for answers in the philosophy of traditional medicine, as well as in modern herbal research. The challenges of Western medicine in treating chronic conditions may well be at least partially due to its rationalistic nature. The pharmacological specificity of Western medical therapies gives medical treatments a targeted focus which may often be to the neglect of the general status of the individual.<sup>1</sup> Traditional healing systems, instead, believe in the innate abilities of human or animal organism to heal itself. The goal is to restore balance, or homeostasis. One of the key features that differentiate traditional medical practice from conventional medicine is the method of matching a particular treatment to the constitution and needs of the individual patient, rather than treating the basis of a single diagnosis per se.<sup>2</sup> Herbal medicine emphasizes accompanying conditions and predisposing or underlying causes of disease in every prescription.<sup>3</sup>

In traditional medicine, different philosophical constructs are often used in creating a different kind of individualized approach. When it comes to chronic conditions, one interesting philosophical construct is the Chinese concept of deficiency, and the belief in the ability of herbal medicine to address it. Herbs both in Western and Chinese traditions are known to have tonifying properties. These tonic herbs, by definition, are used to help restore, tone and invigorate systems in the body or to promote general health and well-being.<sup>4</sup>

The properties and nature of herbs and their therapeutic effects have been studied and documented by many generations of herbalists and physicians. Modern research is now starting to catch up with the ancient knowledge. In my search for evidence, I used my dog Mysla and her chronic conditions as an example.

An herb that has shown great potential for treating arthritis, is the South African plant Devil's claw (*Harpagophytum procumbens*), which has been traditionally used for joint pain. Although studies are still unclear as to which activities and ingredients provide the benefit, it has been demonstrated that the herb contains harpagoside and  $\beta$ -sitosterol, which have anti-inflammatory and analgesic properties, probably through suppression of cyclo-oxygenase (COX-2).<sup>5</sup> Other herbs that are commonly used in treating osteoarthritis are Boswellia, Ginger, Meadowsweet and Yucca.<sup>6</sup> Furthermore, curcumin, the principal curcuminoid of the plant Turmeric (*Curcuma longa*) has been proven to be reduce synovitis, relieve osteoarthritis-related pain and significantly slow disease progression.<sup>7</sup>

Milk thistle (*Silybum marianum*) is the most well-researched plant in the treatment of liver disease. Research has proven that silymarin, an active complex of three isomer flavonolignans, acts as an antioxidant, has antifibrotic activity and may inhibit binding of toxins to hepatocytes.<sup>8</sup> In addition to its hepatoprotective effects, Milk thistle seems to have great potential for treatment of cancer. Silibinin, one of the flavonolignans of milk thistle, has been proven to exert strong antiproliferative, proapoptotic and anti-inflammatory effects, and further research suggests that it may serve as a novel form of therapy in treatment of many types of cancer.<sup>9</sup>

Because of the complexity of both herbal medicine and chronic disease, current research standards of Evidence Based Medicine may be a challenge for research, and a more holistic approach may be needed. A single herb typically contains over a hundred different ingredients and molecules in comparison to a single effective active ingredient of each drug. Although herbs can be broken down into phytochemicals, many herbalists believe that herbs are more than a sum of their parts. Even when an active component can be found, it may have important synergistic properties with other phytochemicals and components of the herb, or with other herbs when used in a complex herbal prescription.<sup>10</sup> Despite the challenges of herbal research, the complexity of herbs may well be the very reason for why they are so effective in treating chronic conditions. Chronically ill patients may often have several unidentified comorbid conditions which affect their health and quality of life. In these difficult and complex cases, using a herb with hundreds or even thousands of components may prove to be a good solution, as the herb might have a better chance of offering something useful than a single chemical.<sup>11</sup> Herbs also supply vitamins and minerals that enhance the nutritional status, while their pharmacologically active components promote specific eliminative functions, modulate multiple body systems and cellular functions.<sup>12</sup>

In my opinion, herbal medicine can and should be integrated to conventional care of chronically ill patients. When the two systems can be used in harmony, there is greater potential for healing than either system can deliver on its own. There are currently no veterinarians practicing herbal medicine in my country, which is a great loss both for the veterinary profession and for our animals. Because of the apparent need for professionals with expertise and training, I am even more determined to pursue my herbal studies.

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# 2016 VBMA ANNUAL HERBWALK

**Laurie Dohmen**

VMD, MS Hartly, DE

Every year the Veterinary Botanical Medical Association (VBMA) kicks off the American Holistic Veterinary Medical Association's (AHVMA) Annual Conference with an herb walk on Friday afternoon. It's always great to see local and native flora wherever the AHVMA meeting is held. This year, the AHVMA Annual Conference took place in Columbus, OH. The Scioto River runs through the city of Columbus, and the Scioto Mile is a park that runs along the river. The park is comprised of a mix of manicured terrain and restored native plants right along the riverbank. We saw burdock, teasel, lobelia, mullein, and ragweed, among others. We also saw a large horse chestnut tree and a tulip poplar.

Our walk was led by Chip Carroll of United Plant Savers and Woodland Wise Botanicals. Chip was the perfect person to serve as our guide, as his degree is in Fish and Wildlife Management with a concentration in botany. In addition to showing us the plants, he was able to explain in detail the work that's been conducted in order to restore the local flora. It was such a treat to not only view native plants, but to learn that they had been deliberately planted to repopulate the riverbank. All of us at the VBMA are looking forward to next year's walk in San Diego, where the climate is temperate year-round!



# 2016 VBMA DOMESTIC ECOTOUR

**Robert Silver**  
DVM, MS Boulder, CO  
VBMA President

## The Quinault Rainforest Domestic Eco-Tour, June 2016

This year, the VBMA organized a domestic Eco-Tour on the Olympic Peninsula of Washington State in the Quinault Rainforest. Donna Kelleher, who is one of our more passionate members, lives and practices in Bellingham, Washington, and has keen knowledge of the local plants and uses many of them for her medicinal preparations. Donna was instrumental in the suggestion of an Eco-Tour in this area and in organizing much of the tour itself. She did an awesome job, with her husband, Jeff, who is also a veterinarian and VBMA member in providing vegan, gluten free meals that were locally sourced and absolutely fabulous.

This Eco-Tour will go down in memory as one of the very best. We are all grateful to Donna for her contributions to the success of this Eco-Tour. But Donna's contributions were no less than those of the other organizers of the Eco-Tour and our presenters, three of whom were veterinarians and members of the VBMA, and one was a local clinical psychologist, Hanna Jordan, who uses herbs with her patients to help them catalyze growth and transformation.

Many thanks to Cindy Lankenau, Ihor Basko and Liz Hassinger for their work organizing this great field trip. Ihor presented a morning lecture entitled: "Polypores of the Olympic Rainforest", and followed that up with a mushroom hunting walk in the afternoon with his wife and fellow mycologist, Jane Winter. It rained cats and dogs during Ihor's mushroom hunt, but no one noticed it, we were all so entranced by the energy of the mushrooms we found, and the absolute beauty of the Quinault Rainforest.

Liz gave a great morning workshop on making tinctures and extracts of herbs. Medicine making is one of the great thrills that I find with practicing herbal medicine. There is nothing more satisfying than identifying and collecting respectfully the plants you need for a medicinal formulation, and then extracting those in something like alcohol or vegetable oil, and then seeing that herbal medicine do some good with a patient, or on my own body. Liz did a great demo, and then in the afternoon, we all went for an herb walk with Liz who showed us how to connect directly with plant energies. Its so important to realize that plants are more than just little medicine machines, they are actually living, breathing, sentient beings that you can connect with and partner with on your healing path.

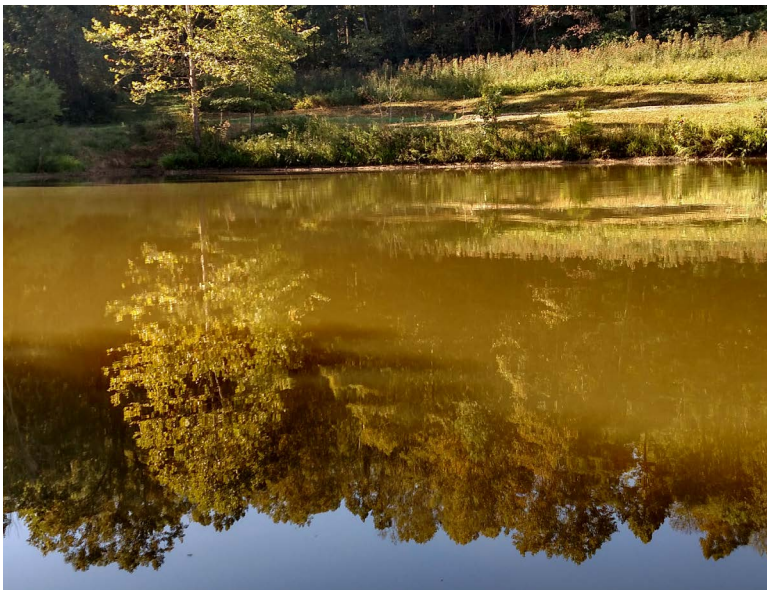
Donna's herb walks were so much fun. She is so excited about being in the forest and finding her herbal friends, and sharing that with us, her herbie colleagues, that it was infectious, and all of us felt invigorated and enthused to follow her and learn which plants she resonated with, and which plants she used for what conditions. We were all honored to meet her favorite and special plant of all times: Devil's Club, or *Oplopanax horridus*, which has been described as an adaptogen, a topic that was recently discussed by David Winston in our last VBMA Webinar.

I could go on and on about all of the things we learned during this 3 days in the rainforest that became timeless. About the wonderful meals Donna and Jeff prepared, and about how much Cindy Lankenau with her encyclopedic knowledge of plants helped all of us understand more about our plant friends.

The Eco-Tour was well attended with two members who traveled from Australia to participate, and one member from UK. Those three get the prize for having traveled the farthest to participate. The Domestic Eco-tours are a great opportunity for an experienced or beginning veterinary herbalist to gain some hands-on experience with the regional herbs that grow in different climates. Our plans for future Domestic Eco-Tours are to rotate through the different climatic regions of North America so as to give members in each area easier access to these fantastic learning experiences, and so we can learn about many different plants that can help our animal patients and ourselves.

If you have a suggestion for a place in the US or Canada for an Eco-Tour, please let us know, and we will look into it. If you want to host such a meeting as Donna did for this Rainforest Eco-Tour, so much the better, we need someone local to help us coordinate these events.

## Photos from the Quinault Rainforest Domestic EcoTour, June 2016



# VBMA WEBINAR REVIEW: ADAPTOGENS

## Adaptogens: Herbs for Strength, Stamina, and Stress Relief by David Winston

by Cynthia Lanckenau, DVM, CVA, RH (AHG)



David Winston, RH (AHG), is one of our leading Herbalists in the US who practices Cherokee, Chinese and Western herbal medicine. As one of the founding members of the American Herbalists Guild, he is an internationally known lecturer on the topic of Herbal Medicine and well known for his book on Adaptogens. With Stress, one of the leading predisposing causes of disease, the use of adaptogens is of critical importance today. David's lecture covered how the ill effects of chronic stress can deplete the body and thus the need for prevention for the ravaging effects from constant cortisol release from the body. Adaptogens are remarkable natural substances that help the body adapt to stress, support normal metabolic functions and help restore balance. They increase the body's resistance to physical, biological, emotional, and environmental stressors and provide a defense response to acute or chronic stress. They are unique from other substances in their ability to restore the balance of endocrine hormones, modulate the immune system and allow the body to maintain optimal homeostasis. Knowledge of adaptogens dates back thousands of years to ancient India and China, but serious scientific study did not begin until the late 1940's, when Soviet scientists explored the benefits of these substances in fighting stress, preventing, and reducing illness, maintaining homeostasis, and strengthening the body. An adaptogen was defined in 1947 by Dr. Nikolai Lazarev as an agent that allows the body to counter adverse physical, chemical or biological stressors by raising nonspecific resistance toward such stress, thus allowing the organism to 'adapt' to the stressful circumstances. This has been expanded to include these three criteria; an adaptogen must be 1. nontoxic to the recipient; it 2. produces a nonspecific response in the body—an increase in the power of resistance against multiple stressors including physical, chemical, or biological agents; and it 3. has a normalizing influence on physiology, irrespective of the direction of change from physiological normal caused by the stressor. Hence, Adaptogens constitute a new class of natural, homeostatic metabolic regulators. Adaptogens must demonstrate a normalizing influence on the body's regulatory system, including the neuroendocrine and immune systems. Secondary sites of action for adaptogens include the liver, cardiovascular system, kidneys and pancreas. Most adaptogens have antioxidant effects, free radical scavenging effects; but just having antioxidant effects is inadequate to explain the full effects of these medicinals. Adaptogens also may have amphoteric effects; the normalization of function of an organ or system within the body; but adaptogens are not limited to the effects on just one organ, but act as broad-spectrum amphoteric effects. David covered the various aspects and specific indications for several adaptogens including from the Ayurvedic tradition: Ashwagandha, Holy Basil; Shatavari; from Chinese Medicine: Asian Ginseng; Astragalus, Cordyceps Eleuthero, He Shou Wu, Jiaogulan, Licorice, Prince Seng, Reishi, Schisandra; and from the American and Russian tradition: American Ginseng, Rhaponticum, and Rhodiola.

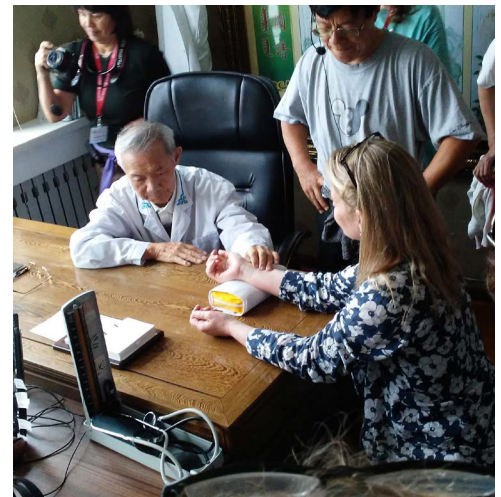
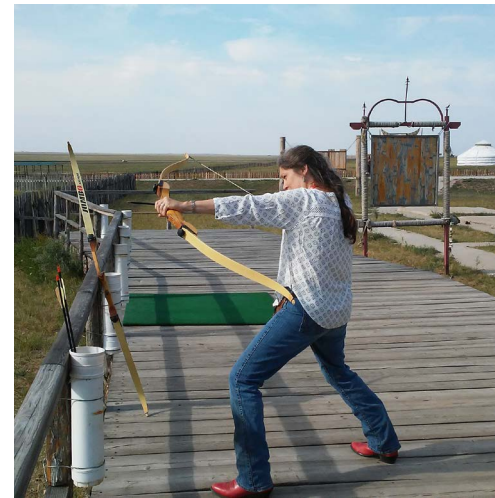
A taste of some tidbits from his talk on Materia Medica: American Ginseng has a long history of use by native peoples. The Cherokee believe this plant is the chief of the medicine plants. It was grandfather ginseng who decided to pledge the aid of plants when the insect and animal people gave humans disease. Ashwagandha gives its users the stamina and strength of a stallion. This herb is considered a rasayana and is used for prolonging life, stimulating the mind, and enhancing vigor and sexual prowess. It is very effective for anxiety, fatigue, cloudy thinking, stress-induced insomnia, and neurasthenia from nervous exhaustion. It has significant benefit for hyper or hypimmune function. It has great effect on endocrine function; being found to stimulate the thyroid. Cordyceps, *Cordyceps sinensis*, is used to treat yin and yang deficiency of the kidney caused by excessive physical exertion or chronic disease; very useful in a treatment for degenerative kidney diseases, and lung diseases. *Eleutherococcus senticosus* is mild and is equally appropriate for men or women, young people or the elderly. It helps relieve angina, lowers LDL cholesterol, strengthens the immune system and regular use will reduce the incidence of colds. Cancer patients can gain great benefit from this herb. Holy Basil, *Ocimum sanctum*, is a sacred herb to the Hindu god Vishnu; it is an herb that nourishes a person's growth to perfect health and promotes long life. This herb has strong radio-protective effects. The above are just a few tanta-

# A MONGOLIAN ADVENTURE

## Inner Mongolia: A Place of Mystery and Adventure

by Cynthia Lankeau, DVM, CVA, RH (AHG)

A group of VBMA members went to Inner Mongolia with the Chi Institute in August of 2016. Inner Mongolia is an incredible place...rolling hills of grassland. But, they have suffered from several years of drought, so our tour was slightly different than we expected. Due to the stress of the drought, families have had to decrease herd numbers. Families have to move often to find grass for their animals. Many families have been seriously impacted. Inner Mongolia is currently under the control of the Chinese government, which has encouraged Mongolian families who have lands close to major road to develop tourist attractions - "Mongolia-Worlds". So, we were quite surprised when our bus rolling into a "family compound" with over thirty permanent yurts! In our "Mongolia-world" we learned a bit of the language, culture, life style, archery, and history...but most importantly how to ride their horses. The horses are the most incredible animals. Our Mongolian guides took us on full gallops across these grasslands, and it was some of the most exhilarating riding I have done. It was truly unforgettable. Even though our guides kept us close to them, the ride was unbelievable. Herbal medicine is a strong part of the Mongolian culture. After our time on the grasslands, we spent a day visiting a local hospital where we had an opportunity to watch a Master pulse diagnosis one of our members. All in all, it was truly an impressive experience.



# THE INTERCONNECTION OF PLANTS

## The Interconnection of Plants, Animals, Their Ecosystems and the Veterinarian

by Ihor Basko, DVM, CVA, Kauai, Hawaii

*"There is a healing quality to nature, which has been known for centuries, be it taking time to smell the roses, meditating on a mountain, lying in a wildflower field, strolling by a meandering stream, or hiking in ancient redwood groves. Hippocrates, the father of modern medicine, recognized this powerful attribute in his humbling statement: Nature cures—not the physician."*

-- Kirsti A. Dyer, MD, MS, FAAETS, Nature Awareness as a Therapeutic Modality: Part 1: The Healing Qualities of Nature, <http://www.journeyofhearts.org/healing/nature.html>

### Natural Environments

The biggest "deficiency" in modern veterinary training and education is the lack of connection between the veterinarian and the natural world. Veterinarians are trained to "fix" problems through surgery and manipulation of physiologic processes with drugs that suppress or stimulate, or kill pathogenic microbes and cancer cells. We rely heavily on blood tests and technology to help us diagnose, and give little credence or value to our innate skills, feelings and intuition. We have become body mechanics, not the healers we set out to be. What can we do to help connect with our patients in a deeper, more natural, and satisfying way? And why is this important?

The June 2016 Veterinary Botanical Medicine Association Eco Field Trip to the rainforest of the Olympic Peninsula in Washington state, USA was a great reminder for me of the deeper knowledge to be gained about the power of plants from observing and interacting with them in their natural surroundings. Most holistic veterinarians administer and dispense powders, capsules, and pills made up of medicinal plant material with the intention to repair, restore and regenerate functions, but they often lack a personal connection with the live plant and any first-hand knowledge of its sustaining ecology and place in nature. To gain a deeper understanding of, and feeling for, medicinal plants, we need to connect with these herbs: learn how and where they live, what they taste and smell like, how they respond to weather, and what ecosystem supports sustainability in their natural surroundings. Learning about their ecosystem is also essential to understanding medicinal plants. They derive strength and power from their relationship with their ecosystem (soil, microbes, minerals, fungi and association with local plants and trees), and their surrounding climate, geography and moisture levels. Wild-crafted plants usually contain more or higher concentrations of "actives" than commercially grown medicinal plants (and this desirability is one reason many important plants are becoming endangered worldwide). Growing medicinal herbs from seeds or cuttings in pots and in our gardens is another way to gain knowledge through direct observation: the personality of the plant, and its strengths and weaknesses, are easily seen in the process.

The "Doctrine of Signatures," a theory dating back to the Ancient Greeks stating that herbs resembling various parts of the body can be used to treat ailments of those body parts, is a useful diagnostic tool. By familiarizing oneself with the morphology of a plant (looks like a liver, or a tumor), where it grows (moist or dry), its aroma, its taste (bitter = tonics or poison / sour = good for the liver / sweet = tonic / salty = kidneys / spicy = lungs and skin), one can better understand that plant, and how best to use it therapeutically. Using the information of taste, smell, morphology, and the ecology that supports a plant, one can get an idea of its potential medicinal effects. This system, assisted by color "interpretation," can also help the veterinarian to understand the medicinal properties of a vegetable or other foods.

How many of us either taste or take the herbs we administer to our patients? The sense of taste is hardly utilized in veterinary medicine, but when going out in the wild looking for a particular medicinal plant, taste can be useful to identify a plant and its actions. Research has revealed that the taste bud appears to contain 50 to 100 receptors for each taste.

# 6 Tastes

## YIN

- Bitter
  - Drying
  - Purging
  - Benefits Heart/Sm. Intestine
- Sour
  - Astringent
  - Absorbent
  - Benefits Liver/Gall Bladder
- Salty
  - Softening
  - Descending
  - Benefits Kidney



## YANG

- Sweet
  - Warming
  - Tonifying
  - Treats Deficiencies
  - Benefits Spleen/Pancreas / Stomach
- Spicy
  - Dispersing
  - Circulation activating
  - Benefits Lungs
- Neutral
  - Diuretic actions

**This diagram from TCM can help one determine what kinds of effects one can expect from a plant or vegetable.**

Employing the “taste” system (i.e. TCM Food Therapy), knowing the climate and soil conditions for sustainability, as well as incorporating information on the morphology and color of the plant or herb, can all be done together to yield information which can guide the veterinarian’s understanding of the potential medicinal properties of a plant, vegetable or other foods.

### Environments at Work

The healing connection to nature that we feel when outdoors or hiking in a field or forest is missing from our everyday lives in a veterinary clinic. We have been conditioned to view practicing medicine a certain way, based on the conventional biases and opinions of our teachers in veterinary college and continuing education in veterinary medicine. We emulate the human medicine paradigm, and design our clinics to look like hospitals or doctor’s offices. But are animals comfortable in this environment?

An important part of any healing process is being treated in a comfortable, relaxing, healing environment. Pets do not relate well to sterile clinical environments, i.e. stainless steel exam tables, chemical smells, tile floors, fluorescent lighting, white walls and white coats. Anyone practicing acupuncture or massage therapy knows that it is difficult for animals (or their anxious owners) to relax in such environments. The sterility of standard veterinary clinic environments not only prevents us from remembering our connection to the natural world, it is an impediment to observing, examining, and diagnosing our patients. It is easier to examine and evaluate a relaxed animal, as opposed to one that is panting heavily trying to jump off the exam table every chance it gets.

### What is the Solution?

Because animals are more aware of, and connected and sensitive to, their physical environment than we are, creating an ideal space for them (and us) would include bringing nature into the clinic. One solution is to have one or two treatment rooms (one for cats and one for dogs) decorated in a way that helps the animals to connect with surround-

ings they feel comfortable in. Other options include soft lighting, plants, fish tanks, outdoor locations or exam tables near windows to look out of, places to climb, padded massage tables covered with soft towels for exams, even adding house call visits to your practice. This is feasible in any practice; I have had many clinics, and it's possible to have both a sterile environment for treatment and surgery, and another room for pets to receive treatments, or to perform euthanasia.

Besides learning new holistic modalities and designing our clinics with pets' needs in mind, to really make the leap over the chasm of convention and science that traps us from being conscious and aware of the nature of healing, we need to spend more time in the forest, fields and streams observing plants and animals.

*"In this process of unlearning, in the process of feeling and hearing the plants again, one comes to realize many things."*

Stephen Harrod Buhner, Sacred Plant Medicine: The Wisdom in Native American Herbalism

And finally, we should strive to be more than veterinary technicians and pet "mechanics." Education in holistic pursuits makes us better veterinarians, providing more options for treatments and the prevention of disease. Switching paradigms to include a holistic perspective, adding herbs, home prepared diets, acupuncture and homeopathy to our tools of practice, opens up new channels of communication, healing, and personal as well as professional evolution.



**Outdoor exam room for large dogs (above) and exam table I made with a step for easy climbing (below).**



**Indoor cat room with aviary view (above) and indoor cat room with bookshelves for hiding (below).**





**Indoor Acupuncture and Massage Therapy Bed**



**Relaxed with AP Needles and Electricity**

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**Dr. Basko graduated from Michigan State University's vet med program with a special focus in the fields of internal medicine, cardiology, and bone surgery. His early years in veterinary medicine were spent working in a busy emergency animal hospital in California. Dr. Basko has been devoted to the study and practice of acupuncture, herbal medicine, dietary therapy, homeopathy, massage, and other alternative therapies for animals since 1971.**

**Dr. B is also an educator and leading authority on holistic animal health. He is one of the founders of the Veterinary Botanical Medical Association. He frequently lectures to veterinarians, animal trainers, and animal caretakers on the use of Holistic modalities in Hawaii, North America and Asia. Aside from lecturing, he has published many magazine articles, chapters in books and journals, and has been a guest on numerous TV and radio shows.**

# OXIDATIVE STRESS & THE Nrf2 PATHWAY

## A Review of Oxidative Stress and the Nrf2 Pathway: Promoting the body's powerful antioxidant network can affect chronic inflammation and disease at a cellular level.

by Katie Kangas, DVM, CVA, CVCP  
Integrative Veterinary Care, 5775 Chesapeake Ct. San Diego, Ca 92123

**Disclaimer:** Dr. Kangas is an independent distributor for the LifeVantage Company, manufacturer of Protandim® and Canine Health® products.

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### Abbreviations

Nrf2 - Nuclear factor (erythroid-derived 2)-like 2, also known as NFE2L2

OA - osteoarthritis

ROS – reactive oxygen species

SOD – superoxide dismutase

Current medical science, in both human and veterinary fields, recognizes chronic inflammation as a core issue in most diseases (1). Chronic inflammation is a key component in the progression of osteoarthritis (OA) and in many cases of musculoskeletal pain. OA is often associated with aging, but there can be several other causes or contributing factors including congenital or early developmental problems, injuries, obesity, lack of exercise, and nutrition factors.

With regard to nutrition factors, nutrigenomics is currently an emerging area of interest in the medical field. Nutrigenomics is the study of how nutrients and food components affect gene activity (both directly and indirectly) and play a regulatory role in intermediate metabolites of signaling pathways, with positive or negative effects. This means that aging and disease are affected by more than just genes. Other factors in the external environment (such as diet, exposure to chemicals, etc.) and internal factors (such as hormones and oxidative stress) can influence lifespan and healthspan. There is no doubt that nutrition and nutrients can have a significant influence on physiology and disease (2 - 4). With more research, an understanding is being developed on how optimizing nutrition can promote successful aging and resilience to inflammation and disease (5).

Helping pets to age more successfully is a prime goal in the overall health management of veterinary patients. These goals are better reached with early and proactive interventions and lifestyle choices that promote disease resistance prior to the geriatric years or the point where advanced disease states have set in. Even with patterns of disease and chronic inflammation present, we can look to new ways of assisting the body to heal and repair. One way of approaching successful aging and minimizing chronic inflammation is to support health at a cellular level. This where the emerging science of the Nuclear factor (erythroid-derived 2)-like 2, also known as NFE2L2 or Nrf2, pathway comes in.

Nrf2 is a protein messenger (transcription factor) that exists within each cell of the body and functions as the master regulator of endogenous antioxidant production and cellular protection (6). Activation of the Nrf2 pathway triggers the DNA to produce powerful antioxidant enzymes, anti-inflammatory proteins, and detoxification or "stress response" genes. These protective pathways are involved in virtually all areas of health from immune function to tissue repair and cognitive function as all share the common Nrf2 "switch" that enables cells to protect themselves. It appears that these pathways are affected by aging, in that the body becomes less efficient in activating the Nrf2 pathway and similar mechanisms as the body ages (7). It is now known that activation of the Nrf2 pathway can be triggered by certain foods, herbs, and exercise, as well as other lifestyle choices (e.g. intermittent fasting) (8, 9). This provides an exciting new approach to addressing health and wellness at a cellular ("root") level and also through the use of nutrigenomics.

It is important to understand inflammation and its origin in order to appreciate the potential of the Nrf2 pathway in both therapeutic and preventive medicine. At the root of inflammation and disease is oxidative stress (1). In fact, more than 200 diseases have been linked to oxidative stress, and research on this topic is mounting.

Diseases associated with chronic oxidative stress (**Figure 1**) (10):

*Autoimmune diseases*  
*Cancer*  
*Cardiovascular diseases*  
*Chronic lung disease*  
*Diabetes*  
*Epilepsy*  
*Inflammatory bowel disease*  
*Kidney disease*  
*Neurodegenerative disease*  
*Osteoarthritis*  
*Rheumatoid Arthritis*  
*Periodontal disease*  
*Toxic liver damage*

Oxidative stress is defined as the cellular damage that occurs due to free-radical effects on the cells in the body (11). Free radicals are often called reactive oxygen species (ROS). ROS are highly reactive and potentially damaging because they have an "unpaired" electron that is seeking to pair with another electron. Therefore, ROS take needed electrons from proteins, lipids, and other healthy cells, creating microscopic damage to cellular structures and leading to tissue dysfunction. The body's cells are designed to be able to protect themselves from free-radical damage via endogenous antioxidant enzymes and also exogenous antioxidant nutrients found in foods. Antioxidants are compounds that react with and inactivate a free radical so that it cannot cause cellular damage. They do this by donating their own electrons. In this way, antioxidants help to protect every cell, tissue, and organ in the body.

The free radical theory of aging and its role in disease is not new. The hypothesis of internal radical-produced damage was first proposed by Denham Harman in 1956, with a refocus on mitochondrial-produced oxyradicals in 1972 (12). This theory holds that through a gradual accumulation of microscopic damage to our cell membranes, DNA, tissue structures, and enzyme systems, we begin to lose function and are progressively predisposed to disease (13).

The body produces these damaging free radical molecules as a normal part of living, breathing and eating/digestion. As such, this ongoing process is "normal," and the body actually does need a certain balance of free radicals for normal physiological functioning, including glucose transport, mitochondrial genesis, and muscle growth. Free radicals are also produced in the environment in the form of sunlight, pollution, toxins in food and water, poor diet and heavily processed foods, as well as many other forms. Pets and farm animals are routinely fed heavily processed foods and treated with dewormers and other insecticides to control parasites. The bottom line is, as technology and society progress, more causal factors of ROS are produced. Pets and people are being exposed to rapidly increasing amounts of environmental toxins and therefore are affected with more cellular damage. This heavy burden of ROS creates an imbalance. With too many free radicals (or too few antioxidants), the result is destruction of cell membranes and DNA, which leads to tissue damage and a wide variety of chronic diseases, including arthritis, cancer, heart disease, gastrointestinal problems, immune dysfunction, and even obesity.

With this knowledge, medical and nutritional science turned to recommending the consumption of exogenous antioxidants in an attempt to combat oxidative stress. Over recent years both human and veterinary health markets have added multitudes of antioxidant-based products, most of which are synthetic isolates of vitamin C (ascorbic acid), vitamin E (alpha-tocopherol) and beta-carotene (a single carotenoid of many beneficial options). Unfortunately, the practice of taking antioxidants in the form of high-dose synthetic vitamin supplements is being linked to more harmful effects than benefits (14). In fact, there are multiple studies that have demonstrated increased morbidity and even mortality with high dose synthetic vitamin supplementation (15 – 17).

In contrast, numerous studies have clearly documented the beneficial effects of dozens of naturally occurring antiox-

idant nutrients when consumed as part of a healthy diet, and many nutrients and phytochemicals that possess significant antioxidant activity. Increased dietary intake of antioxidant nutrients such as vitamins C and E, minerals such as selenium, and various phytonutrients that include extracts from green tea, curcumin, grape seed, and others have all been linked to reduced rates of oxidative damage (18 – 23).

Insert additional references here

Indeed, the dietary intake of antioxidants is thought to help reduce the incidence of chronic diseases like heart disease and cancer. But the imbalance is difficult to affect with diet/foods alone. In other words, while there is an increase of ROS exposure, there remains a limited capacity of dietary nutrients and their activity in the body. This is because molecules of exogenous, nutrient-based antioxidants (also called direct antioxidants) can only neutralize free-radicals in a 1:1 ratio. This 1:1 relationship is referred to as “stoichiometric” scavenging (24).

Endogenous, internally produced antioxidants (also called indirect antioxidants) are far more powerful in counteracting the damaging effects of free radicals compared to dietary antioxidants (**Figure 2**) (25). These internal antioxidants, such as superoxide dismutase (SOD), catalase, and glutathione peroxidase, as well as a variety of others, are actually produced by the body’s own cells and are exponentially more effective than their exogenous counterparts. This is because of the “catalytic” process of scavenging free radicals which occurs with the endogenous antioxidants, allowing them to react with and deactivate millions of free radicals every second (24).

In the mid 1990’s, researchers around the world discovered Nrf2, a DNA transcription factor that “turns on” the production of SOD and other internal antioxidant enzymes. This mechanism or pathway is now called the Nrf2 pathway. The Nrf2 pathway has been referred to as the master regulator of antioxidant, detoxification, and cell defense gene expression. Nrf2 activation controls the body’s expression of metabolic pathways that protect against oxidative damage triggered by injury and inflammation. One peer-reviewed article calls Nrf2 “a guardian of healthspan and gatekeeper of species longevity” (26).

As the applications of oxidative stress reduction are tremendous, numerous studies on this exciting new science are already published, and many more are underway. A recent study provided a list of diseases in which raising Nrf2 is reported to be useful in prevention and/or treatment in animal models and/or humans (27):

*Cardiovascular diseases including atherosclerosis, ischemic cardiovascular disease, vascular endothelial dysfunction and heart failure*

*Neurodegenerative diseases including Alzheimer’s, Parkinson’s, Amyotrophic Lateral Sclerosis (ALS), Huntington’s disease*

*Cancer (prevention)*

*Chronic kidney diseases*

*Metabolic diseases: Type 2 diabetes, metabolic syndrome, obesity*

*Several types of toxic liver disease*

*Sepsis*

*Autoimmune disease*

*Inflammatory bowel disease*

*HIV/AIDS*

*Multiple sclerosis*

*Epilepsy*

More conditions are being studied beyond the extent of this list. Specifically pertaining to OA, a recent study published in Arthritis Research and Therapy found that Nrf2 has a major chondroprotective role in the progression of OA (in a mouse model) (28). Another study reported increased expression of protective factors (heme oxygenase-1) in human synovial fibroblasts with activation of the Nrf2 pathway (29). Yet another study published in Free Radical Biology Medicine reported that metabolic induction of Nrf2 redox-signaling promises to be a viable therapy for attenuating oxidative stress-mediated damage in skeletal muscle associated with physical inactivity (30).

There are numerous reports regarding the effects of oxidative stress and the benefits of Nrf2 activation as it pertains to cardiovascular diseases and chronic pulmonary diseases (31 - 35). Cancer prevention is another field being studied for the benefits that Nrf2 may provide (31, 32, 36). Both veterinary dentistry and human dentistry fields are recognizing

ing oxidative stress in the progression of periodontal disease and the role of Nrf2 in prevention (37, 38).

Through mounting research, it has been discovered that Nrf2 activation plays a largely protective, beneficial role in numerous diseases. This has led researchers to examine ways in which Nrf2 activation might be harnessed for health benefits, through means of exercise, diet, dietary supplements, and pharmaceuticals. To date, several medications that stimulate the Nrf2 pathway are being used or studied for the treatment of diseases that are caused by oxidative stress. These include Bardoxalone-methyl, BG-12 (dimethyl fumarate) (a), VEDA-1209, and a synthetic sulforaphane-cyclodextrin complex (b) (32). However, it is now recognized that a variety of natural products act directly upon the Nrf2 pathway, activating this life-sustaining part of DNA. These include sulforaphane (found in broccoli), turmeric, green tea extract, and many others (39 - 41).

A proprietary blend of 5 herbal ingredients has been developed as a dietary supplement product designed initially for people (c) followed by the development of a specific canine formulation (d). There are 5 active herbal ingredients in this particular product: milk thistle (*Silybum marianum*), turmeric (*Curcuma longa*), green tea extract (*Camellia sinensis*), ashwagandha (*Withania somnifera*), and bacopa (*Bacopa monnieri*). The synergistic effect of these 5 herbal extracts as proportioned within this patented product has been shown to effectively reduce oxidative stress in humans by an average of 40% in 30 days (42). A study in dogs using the canine product also demonstrated a reduction in oxidative stress as evidenced by increased production of catalase enzymes as well as clinical improvement in mobility and cognitive function (43). This author has been using this nutritional/dietary supplement clinically in dogs and cats for more than 3 years and has seen numerous positive results. It is also frequently used in horses. Typical responses may include increased energy, improved mobility, improved cognitive function or other specific parameters. Multiple independent and peer-reviewed studies have shown this particular supplement to be beneficial in many different applications. There are peer-reviewed studies regarding its applications in cardiovascular disease, skin cancer, cancer chemoprevention, periodontal disease and more (44 - 48).

In summary, as numerous diseases and degenerative conditions are linked to oxidative stress, affecting activation of the Nrf2 pathway allows a fundamental approach to affect and improve health at the cellular level. This is beneficial from both a therapeutic and a preventive standpoint. A recent review article stated, "We may be on the verge of new literature on health effects of Nrf2 which may well become the most extraordinary therapeutic and the most extraordinary preventative breakthrough in the history of medicine" (49). The researchers went on to say, "It is our opinion that raising Nrf2 is likely to be the most important health promoting approach into the foreseeable future (49)."

#### **Endnotes:**

- a. Tecfidera®, Biogen, Research Triangle Park, NC.
- b. Suforadex®, Evgen Pharma, Liverpool L3 5RF, UK
- c. Protandim®. LifeVantage, Sandy, UT.
- d. Canine Health®. LifeVantage, Sandy, UT.

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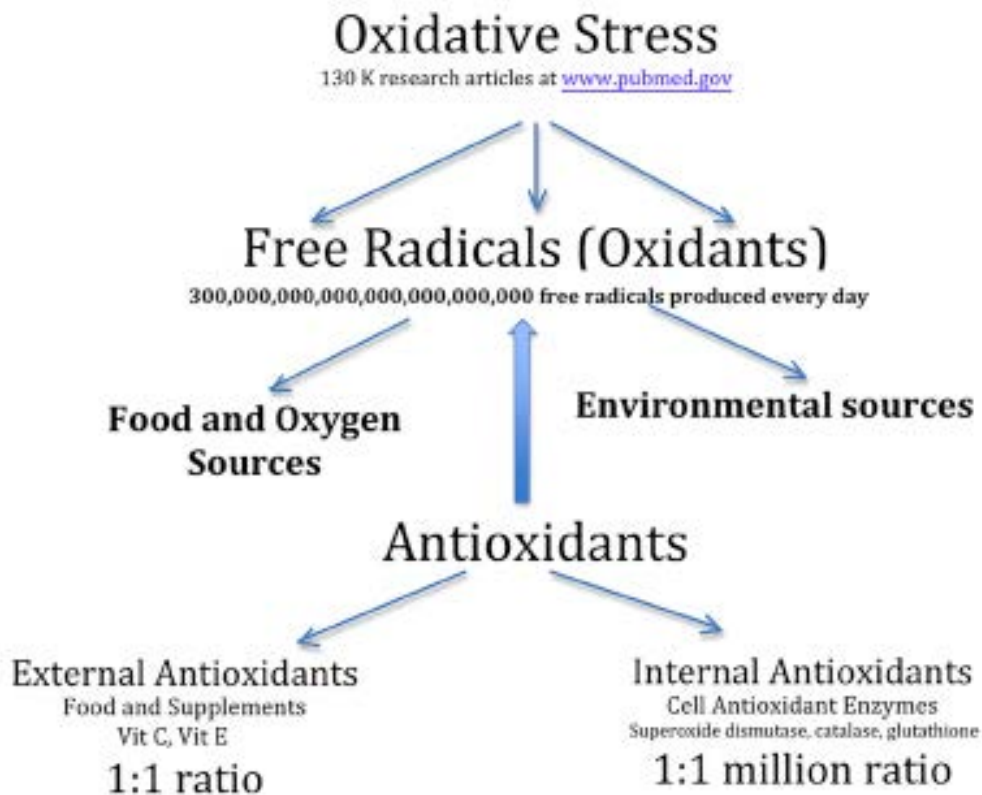
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## Figure Legends

Figure 1. Oxidative stress and aging – impact on multiple organ systems. Illustration/created by: Katie Kangas & Milton Yi.



Figure 2. External vs Internal Antioxidants Recreated from image provided courtesy of Joanne Shearer Parkin, MS, RDN. Graphic design by Milton Yi.



**Katie Kangas, DVM, CVA, CVCP**

**Dr. Katie Kangas owns and operates Integrative Veterinary Care, a private practice in San Diego, California, which offers holistic health care options for pets. Dr. Kangas achieved her CVA certification at the Chi Institute in 2008, and followed with additional training in Advanced Acupuncture, Food Therapy, Herbal Medicine and Veterinary Orthopedic Manipulation (VOM).**

**Her areas of special interest in clinical practice include nutrition, dental health, and pain management. Dr. Kangas enjoys teaching and shares her passion for pet wellness by lecturing and presenting locally, nationally and internationally.**

**Dr. Kangas has also worked as a shelter veterinarian for more than 15 years and continues her efforts to improve the lives of homeless pets in her community, ultimately impacting their opportunity for adoption. She currently works part-time for the San Diego County Department of Animal Services, and previously served as the full-time medical director of the San Diego Humane Society & SPCA.**

# CASE REPORT: BOVINE

## Treatment of Calf Pneumonia with Western Herbal Medicines

by Cynthia Lanckenau, DVM, CVA, RH (AHG)

### Abstract

Spirit, a 200 pound, three to four month old, female Holstein calf who was unresponsive to several weeks of antibiotic therapy was treated successfully with western medicinal herbs for severe pneumonia which was clinically characterized by hepatization of her pulmonary tissue.

### Introduction

Enzootic pneumonia of calves refers to infectious respiratory disease in calves. Enzootic pneumonia is primarily a problem in calves <6 mo old with peak occurrence from 2–10 wk, but it may be seen in calves up to 1 yr of age. It is more common in dairy than in beef calves and is a common problem in veal calves. It is also more common in housed dairy calves than in those raised outside in hutches. Peak incidence of disease may coincide with decline of passively acquired immunity. Morbidity rates may approach 100%; case fatality rates can reach 20% but often long term lung capacity is diminished with pulmonary abscess formation causing a significant decrease in long term quality of life. The pathogenesis involves stress and possibly an initial respiratory viral infection followed by a secondary bacterial infection of the lower respiratory tract. Stress results from environmental and management factors, including inadequate ventilation, continually adding calves to an established group, crowding, and nutritional factors such as poor-quality milk replacers. Partial or complete failure of passive transfer of maternal antibodies is an important host factor related to development of disease. Any of several viruses may be involved, and a variety of bacteria may be recovered from affected calves. Mycoplasmal and bacterial agents including *Pasteurella multocida*, *Mannheimia haemolytica*, and *Mycoplasma bovis* represent the most frequently isolated pathogenic organisms. (Radostits, 2007) Bovine Respiratory Syncytial Virus can also be involved in the complex of enzootic calf pneumonia primarily or secondarily with symptoms of severe respiratory distress with pulmonary edema and congestion, alveolar epithelialization, and hyaline membrane formation. (Brodersen, 2010)

### Case report: Assessment: Signalment:

Spirit was 3-5 month old female Holstein calf when initially seen on February 6, 2014.

### History

Spirit was purchased by a farmer at an auction barn, 12/18/2013, as a neonatal calf. No history is available as to the conditions at her birth, her care upon birth and/or if she had received colostrum. During the next three weeks, she was reported to by a very poor-doer with nasal catarrh. She was on Penicillin and Naxel throughout this time. She was shipped to auction again, left in the auction barn overnight with no nourishment, and purchased by an Amish family who gave her injections of Draxxin. Spirit's current owner purchased Spirit from the Amish, close to death. Her regular veterinarian treated Spirit for two week with Baytril, and Draxxin. By February 6, 2014, Spirit was in severe respiratory distress with no clinical improvement from her antibiotic treatment. She had developed severe diarrhea after her last injection of Draxxin.

### Clinical signs

#### Physical exam findings

On February 6, 2014, Spirit a 3-5 month old Female Holstein was found in severe respiratory distress. She stood with her head and neck extended, in a base wide stance with her mouth open, breathing with great exertion; No air flow was auscultable in Spirit's lung parenchyma, only harsh bronchial sounds. There was no compressibility in her chest. Her appetite was poor. Her manure was loose and pasty. Her ears and skin were cold. Her temperature was sub-normal at 97 degrees F. She had severe pain at the acupuncture point BI 18, 20 with a deep pit at BI 13. Her tongue was purple, with phlegm; pulse was fast, very thin, tight and deep. She was started initially started on two Chinese Formulas; Xue Fu Zhu Yu Tang, a formula to move Blood Stagnation in the chest and Wei Ji Tang, a formula for pulmonary abscesses; and tincture of Usnea and Thyme for added antiseptic, antimicrobial effects.

The following day, she was still in distress with a rattling death sounding cough. Her formula was changed to Usnea, Thyme and Milk Thistle, Silybum marianum, Bloodroot, Sanguinaria canadensis and an additional mixture of ½ part dried ground Eucalyptus leaves, with equal parts Thyme, Mullein root, White Horehound one tablespoon three to four times a day.

### **Laboratory and other clinical tests:**

Due to the economics of the dairy industry, the expense of a lung culture, X-rays or other diagnostic tests are not cost-effective and were not performed.

### **Discussion:**

*Western diagnosis:* Enzootic Calf Pneumonia with Hepatization of Lung tissue due to a presumed opportunistic Mycoplasma/Syncytial infection. With her history, there is no other differential diagnosis although the specific organisms that are primarily pathogenic or secondary opportunistic to the susceptible pulmonary tissue would not be known without a necropsy with culture and histopathology.

**Etiology and Pathogenesis (western herbal medicine perspective):** With stress (auction) causing immune suppression and an incompetent immune system (presumed poor colostrum consumption at birth), Spirit's ability to withstand a respiratory pathogen would have been compromised. Typically the invading pathogen is Infectious Bovine Rhinotracheitis (IBR), which is endemic in congested bovine areas. This virus creates an internal "cold invasion" meaning that the virus tends to paralyze the normal tracheal cilia apparatus thus allowing a plethora of secondary bacterial invaders creating a chronic inflammation in her airway. Her body would respond by producing mucus and inflammatory products in her respiratory tract to kill the invading organisms. Spirit was treated in the typical way, Penicillin injections, but with her compromised immune system, she never recovered. Antibiotics also have a very "cold" energy, resulting in a suppression of her innate inflammatory reaction, and also antibiotics are not able to clear viral pathogens. This would allow the establishment of an unresolved inflammatory condition. (In TCM, this cold stagnation, both the viral and the antibiotics, created heat and congealed her fluids into pathologic phlegm.) She then suffered from more stress (another trip to auction), more antibiotics with no true support for her immune system, allowing more opportunistic organisms to gain entry into her respiratory system. She was suffering from a suppressed immune system, congestion and stagnation with phlegm in her respiratory tract with a chronic unresolved inflammatory reaction within her pulmonary tissue. With the chronic use of antibiotics, her digestive system was injured with an intestinal dysbiosis further overwhelming her liver and her ability to handle not only the toxic material from her pulmonary inflammation but also she could not metabolize the heavy load of antibiotics.

**Pertinent factors:** Economics is a large factor in clinical dairy practice. Spirit's owner is a unique individual, and was willing to try a different approach to save her life, if reasonably affordable.

### **Assessment:**

Spirit was in severe respiratory distress with consolidated lung tissue resulting in poor oxygenation. She has a plethora of involved respiratory organisms; viral, bacterial and Mycoplasma. There are no conventional drugs that are effective against either viral and Mycoplasma. She had endured the typical range of antibiotics that are used in food animal practice. Her immune system was exhausted, from a presumed colostrum deficiency at birth, the stress from two auctions, and the immune suppression of several weeks of antibiotic therapy. Her core temperature was sub-normal; her entire metabolic system was failing. She also was suffering from intestinal dysbiosis from the long term antibiotic treatment with leaky gut syndrome, overwhelming her liver. The initial priority was to relieve her pulmonary congestion to save her life. She was in need of bronchodilation with Blood moving herbs that could break down the stagnation in her lungs with an antiseptic, antimicrobial anti-inflammatory effect. Her core metabolism was exhausted. With her subnormal temperature, she was in need for internal warming herbs. She needed adaptogens and immune modulating herbs to support and restore her immune system. Digestive bitters and mucus membrane trophorestorative are needed to heal her intestinal dysbiosis. Her acupuncture Liver Back Shu points were very painful. She also needs herbal support for her liver, cholagogues to enable her to remove some of her accumulated toxins and hepatotrophic herbs to restore her Liver. A Western herbal medicine approach was taken simply because there was no other affordable option and she was dying; conventional drugs had failed, a day on Chinese herbs had not improved her significantly, it was felt that western herbs could find a way to relieve her

pulmonary condition while supporting her immune system and restoring normal function to her organs. In dairy practice, the economic value of the animal is a limiting factor in the degree and intensity of treatment. Conventional dairy practice offers a limited choice of antibiotics in the treatment of pneumonia. Spirit was not responding, if anything, the current antibiotics were worsening her conditions by causing intestinal dysbiosis. There was no other therapy offered in regular veterinary dairy practice. Her owner desperately sought out another approach.

### **Herbal formula:**

Her formula consisted of equal parts 1:2 tincture of Thyme, *Thymus vulgaris*; Usnea, *Usnea* spp.; Milk Thistle, *Silybum marianum* three ml three times a day; 5 drops of a 1:2 tincture of Bloodroot, *Sanguinaria canadensis* three times a day and ½ part of ground Eucalyptus leaves, *Eucalyptus globulus*; equal parts of dried ground Thyme, *Thymus vulgaris*; Mullein root, *Verbascum thapsus*; White Horehound, *Marrubium vulgare*: one tablespoon, 15 grams, three a day. Spirit needs a pulmonic herbs that will relief the pulmonic congestion, Bloodroot, Usnea; improve circulation, Bloodroot; antifibrotic, Milk Thistle; bronchodilation, Mullein, Eucalyptus; antispasmodic, Bloodroot, Thyme, Eucalyptus, White Horehound; expectorant, Bloodroot, Thyme, Usnea, Mullein, Eucalyptus, White Horehound; anticatarrhal, Bloodroot, Thyme, Eucalyptus; anti-tussive qualities, Thyme, Mullein, Eucalyptus, White Horehound; anti-inflammatory, Thyme, Milk Thistle; Anti-microbial, Thyme, Eucalyptus; anti-allergic, Thyme, Mullein; antioxidant, Thyme, Milk Thistle; antibacterial, Usnea, Milk Thistle; antiseptic, Usnea; anti-viral, Thyme  
Immune support: immunomodulation, Blood root, Milk Thistle; immunoregulatory, Thyme; immunostimulant, Eucalyptus ; alterative, Milk thistle, Thyme To restore Liver function; a heptobiliary tonic, Bloodroot; Cholagogue, Bloodroot; Choloretic, White Horehound; Hepatic trophorestorative, Milk Thistle; Hepatoprotective, Thyme, Milk Thistle To restore Digestive function, Digestive Tonic, Thyme, Eucalyptus; Bitter tonic, White horehound, carminative, Thyme, Eucalyptus; Mucus Membrane stabilizing, Milk Thistle.

Bloodroot, *Sanguinaria canadensis* was felt in this case, to be of critical importance. It is an expectorant, antispasmodic, cardiogenic, diuretic, sedative, anticatarrhal, circulatory stimulant, bitter hepatobiliary tonic, cholagogue. This is a warming herb that will stabilize her core temperature. The specific indication is Hepatization of the lung (Ellington, 1919) while it promotes expectoration, resolves viscous phlegm, and relieves coughing. Specifically indicated in COPD and will help to remove pulmonary accumulation. Energetically it act by warming and moving Liver cold stagnation, her exhausted liver function and cold internal temperature; it fortifies Yang deficiency fulfilling our need to warm the interior and support the immune system. It has been traditionally used for convalescence from pneumonia with exhaustion and coughing; indicated in severe, chronic bronchial, hepatic conditions presenting as a deficiency, cold with phlegm and mucus discharges. Although long term use of Bloodroot is not recommended as there has been some toxicity issues, a daily dose of 5 mg/kg body weight has been reported as safe. But for safety use only for a month, then take a break. The alkaloids, sanguinarine and chelerythrine, are felt to be bio-active. (Ross, 2010) Fyfe also states that often for coughs, "it is absolutely necessary to continue the drug for a considerable period of time. Dose is important, In minute doses we employ it in cases of cough with dryness of the throat and air passages, feeling of constriction in the chest, difficult and asthmatic breathing with sensation of pressure. In the same dose it is a stimulant to the vegetative system of nerves and under its use there is an improvement in the circulation, in nutrition and secretion." (Fyfe, 1909) Research has shown Bloodroot extracts having potential as therapeutic immunomodulators. (Senchina, 2009), and has been shown to inhibit platelet aggregation. (Jeng, 2007) No known drug interactions. A 5 drop dose three times a day was used of a 1:2 tincture. Thyme, *Thymus vulgaris* is antitussive, expectorant and antispasmodic, antimicrobial, antispasmodic, antioxidant, expectorant, antiallergic, anti-inflammatory, digestive tonic, carminative. Its flavones has spasmolytic activity, phenolic acid have antiviral, anti-inflammatory and antioxidant effects and phenolic monoterpenoids have proven antibacterial effects (Giordani, 2004); Cold is cleared and damp resolved in the respiratory and digestive systems while the underlying deficiency is replenished. Its deeply restoring and stimulating action is enhanced by anticatarrhal astriction. It has an ability to strengthen an adrenal deficiency as it can stimulate immunity and reduces infection. (Holmes, 1993) Traditional uses date back to Dioscorides who used Thyme to expel dampness and viscous phlegm for the chest and helps difficult breathing and wheezing. Thyme stimulates the thymus gland. Thyme is valued for is adrenal restorative nervous restorative and immune enhancing properties.

There is a great volume of research showing the strong anti-septic and anti-microbial effects, even to have activity in killing mycobacterium. (Deveci A., 2013). There are no safety concerns; there are no general contraindication, no adverse effects, and no drug interactions. Thyme was used both in a tincture 1 ml three times a day with 4

grams of dried herb three times a day. With Spirit's poor appetite, and digestive weakness, it was felt important to ensure a higher dose of Thyme.

Usnea, *Usnea* spp. is antibacterial, antibiotic, antiseptic; opens the chest, transforms phlegm removes damp heat, invigorates blood, clears heat and toxins, Clears deficiency heat; indicated for tuberculosis, immunity boost for common cold, pleurisy, pneumonia, and absorb heavy metals and pollutants. Research has shown it to have significant antimicrobial activities, (Nishanth K., 2014) This is a very safe herb, contraindicated in pregnancy; no drug interactions are reported; but this is a threatened herb so care must be given to use of a sustainable source. Dose give was 1 ml three times a day of a 1:2 tincture.

Mullein root, *Verbascum thapsus*, one of its other names is cow's lungwort, this is a relaxing expectorant, mild diuretic, mucilaginous. It is valuable for all lung problems because it nourishes as well as strengthens, (Wood, 2008); it promotes expectoration and resolves viscous Lung phlegm and relieves coughing; it opens the chest and relieves wheezing, and can reduce allergy; it clears damp heat; and clears Fire toxins, removes lymph congestion,. It has been used to treat asthma, pleurisy, pneumonia, croup, tracheitis, emphysema, tuberculosis, contagious bronchitis. It can stop that dry, harsh, raking, 'shakes the frame' cough that Spirit had developed. It has a proven strong anti-viral effect on fowl plague, influenza and herpes simplex virus. Ethnoveterinarian use is reported for cattle against the 'cough of the lungs.' In deep respiratory cases, it helps remove the phlegm deep in the airways while reducing allergic reactions and allows the deeper airways to open. (Donat, 2012) Mullein polyphenols play an important role in exerting the antioxidant effect; anti-inflammatory activity t is correlated to iridoids and phenylethanoids. (Grigore, A. 2013) There are no known interactions or contraindications. The dose given was 4 grams three times a day.

Eucalyptus leaves, *Eucalyptus globulus* is an antitussive, anticatarrhal, anti-microbial, antispasmodic, sedative with antibacterial, bronchodilant, expectorant, immune stimulant effects. Energetically it treats Lung Phlegm Heat; promotes expectoration, resolves viscous phlegm, and relieves coughing and soothes the bronchi; it Disperses Lung Qi, moving the congestion in the chest and clears retained pathogens; stimulates Wei Qi, the defensive immune system. The indication for using Eucalyptus leaves for Spirit is for her Bronchitis, pneumonia, the acute consolidation of her pulmonary tissue could be similar to an allergic asthma or obstructive pulmonary disease, wheezing, cough; sensation of obstruction in the chest. Fyfe's description of Eucalyptus is, "valued highly as a stimulant expectorant. In fetid bronchitis, bronchorrhea and pulmonary gangrene, it has been employed with much success; it is a tonic, stimulant, expectorant, diuretic and antiseptic. In large doses it is a mild antiperiodic. He gives the following indications: Nervous affections with coldness of the surface and cold perspiration; sensation of coldness and weight in the bowels; coldness of the extremities; chronic catarrhal affections of the respiratory organs, genito-urinary organs and the gastro-intestinal tract. This herb fits the fear of pulmonary gangrene and her cold core body temperature. Eucalyptus is a warming herb. In addition, Felter and Lloyd stated the Eucalyptus in addition to the respiratory symptoms is indicated for atonic dyspepsia, stomach catarrh, and chronic catarrhal diarrhea. Biochemically, Eucalyptus's euglobals are antiviral, its phloroglucinal terpenes are antibacterial, and 1,8cineole is anti-inflammatory, bronchobilating, expectorant, (Ross, 2010) antitussive and sedative. (Wittman, M., 1998) Although the Commission E reports GI side-effects, there are no references given; Eucalyptus is recommended to treat chronic stomach ulceration. There are no contraindications but Eucalyptus at extremely high doses, 30ml, is lethal. There are no known drug interactions. Calf: 2 gram dried herb twice a day.

White Horehound; *Marrubium vulgare*: Its Western actions include: expectorant; diuretic, diaphoretic, antispasmodic, bitter tonic, choleric. Energetically is also clears Lung phlegm an also tonifies and moves Spleen and St Qi; treats Liver and Stomach qi stagnation; combining the needed pulmonary effects with the digestive tonics. It is indicated in non-productive cough; obstructive pulmonary disease, loss of appetite with weak digestion, nonulcerative dyspepsia, and flatulence. This herb has a long traditional usage, Culpeper stated that, "A decoction of the dried herb, with the seed, or the juice of the green herb taken with honey, is a remedy for those that are short-winded, have a cough, or are fallen into consumption, either through long sickness, or thin distillations of rheum upon the lungs. It helpeth to expectorate though phlegm from the chest." (Culpeper, N., reprint) White Horehound helps symptom relief of the cough while strengthening digestion. Marrubiin is a bitter bicyclic diterpenes and seems to linked to the antispasmodic, and vasorelaxant effects. (De Jesus, 2000) There are no general contraindications or drug interaction reported. Dose: calf 3 grams three a day

Milk Thistle, *Silybum marianum* was added into the formula to add a hepatoprotective antibacterial, alterative, anti-inflammatory, antioxidant, membrane stabilizing, antifibrotic, and immunomodulatory effect. There are no known side effects, herb-drug interaction or contraindications known. Her dose was 1 ml three times a day of a 1:2 tincture.

Spirit's appetite was very poor. Her owner discovered that Spirit would nurse honey off of her fingers. The herbs were mixed in honey, and Spirit would eagerly suck the honey mix. Honey is also known for its immune supportive effects with a soothing quality to the throat. Spirit was housed in a draft free area with good ventilation; her owner resumed feeding colostrum as her primary protein and energy source, with free choice hay to stimulate normal rumen function with calf starter grain to ensure vitamins and mineral with supplemental Yeast based Selenium. Follow-up: Spirit's owner was instructed to give daily phone up-dates as her condition was grave, her barn re-check would be dependent on her responds, yet there was a great optimistic feeling for her ability to respond, after her first dose of Blood root, her posture relaxed and her breathing softened. By the next day, her owner reported a significant improvement with a greater ability to move around with her breathing more relaxed.

**February 14, 2014:** Spirit was bright, alert, normal temperature, tongue was pink, with still some phlegm, pulse was fuller and slower; eating better; air flow was heard throughout her dorsal and middle lung lobes, still poor aeration in the distal lobe. Now though there were musical rales heard throughout the middle area of her lung field. It was assumed from a thickening from the bronchial smooth muscles; a possible secondary allergic reaction was theorized. Her response to the formula though has been remarkable; there is very significant improvement in the aeration of her pulmonary tissue. Schisandra chinensis was added in the formula of a total of 1 gram twice a day of the ground berry: Schisandra, Schisandra chinensis was used as an adjunct to allergic asthma as she sounded like a horse with COPD. This herb also firms the yin energies a hepatoprotective, adaptogenic, antitussive, nerve tonic, with antioxidant abilities. It can enhance phase I/II detoxification; it also acts as an adrenal tonic; liver tonic, astringent, tonic sedative, cardioprotectant, hypnotic; cognitive enhancer; with antiallergenic effects. These strong liver effects were needed to improve liver function in order to remove a potential allergen. Schisandra can treat, chemical liver damage, and poor liver function; hepatic weakness from illness, prolonged multimедication; it is an adjunct to treatment of asthma from allergy. Its lignan schizandrin is linked to its antiallergenic quality; while its hepatoprotective effect is linked to gomisins A. (Kim, 2008) No reported drug interactions; It is contraindicated in pregnancy and some reported of restlessness if given a high dose. Spirit's dose was 1 ml three times a day of a 1:2 tincture.

**February 28, 2014:** Spirit was bright and alert, she was eating well. She had air flow throughout her lung field. No rales. But she had developed a significant Wheeze sound in the trachea when breathing with a spastic cough. Her current tincture was changed to Andrographis and Echinacea, for her wheeze and Khella seed and Lobelia for her cough. Her original tincture of Usnea, Milk Thistle and Thyme was stopped. It was felt that she was in the process of expelling much of the toxic debris from her lower airways; it was felt that a slightly different antimicrobial with stronger immune support was needed while assisting her body's cough.

Andrographis, *Andrographis paniculata* has an immunomodulating effect; both immune stimulant and immune suppressive and may be useful in autoimmune disease clearly indicated in many cases of COPD. Its western actions include: antimicrobial, antimalarial, with Cardiovascular effects; antiplatelet and antithrombotic activity; hepatoprotective/antihepatotoxin; a Bitter tonic, Digestive stimulant/choleretic, cholagogic; antibacterial; antipyretic and anti-inflammatory; with antioxidant and anti-inflammatory effects. Energetically it Clears Heat and Eliminates Toxins; and Dries up Damp which was a newer symptom. It is indicated in upper respiratory tract infections, Cough, sore throat; Liver disease. The herb is traditionally given as a restorative and tonic in convalescence giving non-specific immune stimulant, hepatoprotectant; Dose: 2 ml of 1:2 tincture given three times a day.

Echinacea, *Echinacea purpurea*, is an alternative, immunostimulant, antimicrobial, anti-inflammatory, carminative, tonic with anticatarrhal, antipyretic effects. It was indicated her for post-infection recovery dose. The Alkamides contained in Echinacea are reported to be linked to the antibacterial, immunomodulatory, antibacterial, anti-inflammatory effects. Its cichoric acid and polysaccharides are linked to the antiviral and immunomodulatory effects. No adverse effects have been reported, no general contraindications. Dose: 1ml of a 1:2 tincture three times a day.

*Lobelia inflata*, L. Indian tobacco circulates the Lung Qi, opens the chest and relieves wheezing,; it is a respiratory stimulant, and depending on dose, a stimulant or sedative expectorant, diaphoretic, anti-spasmodic, anti-pyretic, and expectorant. Energetically it Clears Lung Heat; Clear Lung Phlegm Heat; relax spasms, regulate Lung Qi, Tonify and move Lung Qi, clear Lung Phlegm. It is used to treat COPD, asthma, spasmodic asthma, bronchial asthma, chronic bronchitis. Historically it is specifically indication in atonic bronchial function with accumulation of phlegm. The alkaloid lobeline is linked to most of *Lobelia's* actions. Spirit was given 5 drops twice a day. High doses are emetic and are to be avoided.

Khella seeds, *Ammi visnaga*: is an ancient Egyptian medicinal plant. It is a strong antibacterial, anti-fungal, anti-spasmodic herb with smooth muscle relaxing action acting as a non-stimulating bronchial dilator and vasodilator. It has traditionally been used for whooping cough, asthma (cardiac, bronchial asthma); Bronchitis, emphysema, spastic coughs. Dose: tincture: 1 ml TID

**March 30, 2014:** Spirit was normal. She was continued only on *Echinacea* and *Andrographis*. By the end of April, she was clinically rechecked, normal and is currently a healthy replacement heifer.

**Discussion:** This is a remarkable case for several reasons; Spirit was near death with a lack of response to conventional antibiotics. She responded extremely well, very rapidly to an overwhelming pulmonary infection/ congestion from multiple organisms. Secondly, in the food animal production, there is great importance in the development of therapies that have no antibiotics thereby have no drug with-holding times. This was also a very cost effective treatment. Finally, calves that survive serious calf pneumonia, typically suffer from permanent lung damage which curtails their future productivity. It is still early but Spirit appears to have completely overcome her disease.

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# CASE REPORT: EQUINE

## Possible Pesticide Contamination in Two Equines

by Cynthia Lanckenau, DVM, CVA, RH (AHG)

**PATIENT(S):** "Sterling and Flash" Tyka

**DATE OF INITIAL PRESENTATION:** October 8, 2013

**HISTORY:** On October 6, 2013; the neighboring grape fields were sprayed with an unknown spray. On October 7, 2013, at 7 PM; both horses owned by Jim Tyka and his wife, who were in the nearest field to the grapes, Sterling, a 9 year old quarter horse mare, and Flash, a 28 year old Arab gelding, were unable to move. With much coaxing, they were walked into the barn with a very stilted classic founder gait and stance. The owners reported bounding pulses in all feet of both horses. The farm is a three hour drive from my clinic and being unable to drive there that night, they were instructed to buy Milk thistle, Silybum marianum, and give 8 times the label human dose. (Many other recommendations were given but of all, the owners were only able to purchase the Milk Thistle.) A presumed diagnosis of toxin-induced laminitis was suspected.

**SIGNS/SYMPTOMS:** On October 8, 2013 upon arrival to the farm, the owner reported that both horses were incredibly better. Flash, tongue was murky red, Pulses were taut; Pain on BI 18, 20. He moved very stiffly but willingly, very slight but present digital pulses. Sterling was very stiff coming out of her stall but once she started moving, she loosened up but lame on her right fore leg. Her tongue was also a murky red, her pulse was slippery and she also had a bounding pulse on her right front digital artery. She had pain on BI 18 and 20 and palpable heat in her fore feet. Sterling has the body type of the typical "metabolic syndrome" horse, she had a prominent "crest" in her cervical area of firm fat with additional ample body fat.

**WESTERN DIAGNOSIS:** Toxic Livers from unknown spray with secondary laminitis from endotoxins; their TCM diagnosis was Toxic heat in Blood and Liver

**WESTERN DIAGNOSTICS:** physical exam and history

**TREATMENT GOALS:** to regain health and vitality; to strengthen their ability to handle the toxic load by improving organ function; and to restore liver and metabolic function; give symptom relief for their stiff motion.

To regain health and vitality; need alteratives

To handle the toxic load; alteratives, hepatoprotectant, hepatics

To restore Liver function, hepatotrophorestorative herbs

To restore Metabolic function; (for Sterling): anti-diabetic herbs

To give symptom relief for stiff muscles, alteratives, anti-arthritis, anti-inflammatory herbs with anti-oxidant effect

### PRESCRIPTION - HERBS SELECTED AND WHY:

In this case, I was primed to start my more typical laminitis herbs, Hot Hoof II from Jing Tang with probably Xiao Chai Hu Tang but the owners were so amazed at their response to the Milk Thistle, they did not want to stop. Being a retired couple, they only wanted one formula for both horses due to economic limitations.

Silybum marianum, Milk Thistle: Milk Thistle is hepatoprotective, alterative, anti-inflammatory, antioxidant, membrane stabilizing, antidiabetic, and immunomodulatory herb. It is able to protect the liver and hence the body from drugs, pollutants, and poisons. Culpeper used Milk Thistle to cleanse bad blood.

Articum lappa, Burdock root: Burdock root is a cooling herb that has alterative, anti-arthritis, anti-inflammatory, antimicrobial, diuretic effects. It is traditionally used to treat gout and rheumatism by eliminating toxic products; it is able to clear Heat Toxins. Christopher used Burdock root to reduce excess fat, and relieve congested lymphatics.

Achillea millefolium, Yarrow: is an astringent, hemostatic, alterative, bitter digestive tonic and cardiac tonic. Yar-

row was used for the hemostatic and astringent influence on the laminal blood vessels; and to help heal the digestive weakness from the toxic ingestion. Equal parts were ground and the horses were given three tablespoons twice a day (45 grams)

**ADVICE GIVEN:** I was very nervous relying on just this western formula, but the owners were so astounded by their horses' response on just Milk Thistle, they did not want to change. They assured me that if Flash and Sterling were not improving daily, they would call immediately. I typically go to their barn only twice a year; I was nervous about leaving them only with "Western Herbs"; I really wanted to leave them with my typical laminitis Chinese herbs. They were instructed to keep the horses away from the grape fields, and to keep them in a deeply bedded loafing area in the indoor arena. In this way, they could move about more freely on a soft conforming surface to help massage the frog and the return circulation from the feet. They were instructed to have ample water and to continue the horses' vitamin-mineral mix they had been on for extra anti-oxidative protection; minimal grain, just a bran mash to ensure the consumption of their herbs and supplements with fresh hay.

**FOLLOWUP:** Phone contact over the winter; horses doing well. Within two weeks, their owners reported that they were better than normal; moving well with no evidence of lameness or heat in their feet. 10/30/13 decreased to one tablespoon twice a day. We have had an exceptionally cold winter. Flash historically does not do well in the cold. His owner reported that this is the best winter Flash has ever had. He was moving freely even on the bitterly cold days. Flash has a malformed jaw and hence had chronic dental issues. He had a tendency to develop mild impactions on severely cold days and so for the past seven years, has been put on Ju Pi San during any cold snap. This is a classic Chinese formula for colic due to coldness. It contains Cinnamon, Fennel, Angelica, Dang Gui; Angelica, Bai Zhi; Citrus, Qing Pi, and Chen Pi and Magnolia, Hou Po. He had the best winter that his owner could remember despite it being one of the coldest in recent history.

Sterling was reported to be doing wonderfully. She had been diagnosed with navicular disease by her regular veterinarian a decade ago; despite this, she has been ridden with a barefoot treat from the local Amish blacksmith; but she was moving more freely than ever, according to her owner. She was maintained on one tablespoon twice a week.

**3/21/14:** Flash; looks good, tongue pink; pulse even and smooth; slight reaction on Liver and Spleen point; His body weight is wonderful, he wintered very well. He is moving very freely. He was put back on a higher dose of the Milk Thistle/ Burdock/ Yarrow as a preventative; sprays for the grapes will be started soon; Sterling has a little phlegm; Pulse is slightly slippery, but moving well. She also was put back on a tablespoon twice a day of the Milk thistle/ Burdock/Yarrow combination for protection from the spray but also for metabolic support.

**REFLECTION ON YOUR EXPERIENCE:** Rademacher used Milk thistle for congestive condition of splenic circulation, varicose veins, and hemorrhages associated with splenic or hepatic disorders. Laminitis is a pathologic congestion of blood in the capillary and venous bed of blood vessels in the lamina. It makes sense why these horses were not only protected from further injury from the sprays but why Milk Thistle stimulated such amazing healing of the circulation in the blood vessels of the lamina. I was amazed at how well these two horses responded to Milk thistle in the face of a toxic laminitis. In today's toxic world, many horses are suffering from Metabolic diseases with spontaneous founder. It is known that endo-toxins are responsible for these cases of laminitis. Milk Thistle is the perfect herb to not only protect these horses from toxic shock but also to treat active cases and heal the circulatory damage. We were never able to find out exactly what the farm used to spray on the grapes. The owner of the horses, Jim Tyka, is a well respected, well known retired sheriff. I suspect that what was used was not an approved spray and the neighbors were fearful of legal ramifications.

Loving Chinese Herbal Medicine also, I was primed and ready to use large volumes of relatively more expensive Chinese Herbs. Flash and Sterling's owners would have purchased these even though they are living on a very limited income. The horses' incredible response to more easily assessable and affordable herbs was a stress reducer for the owner. This also taught me to trust my western herbs.

# CASE REPORT: EQUINE

## Cardiac Deficiency in an Equine

by Cynthia Lanckenau, DVM, CVA, RH (AHG)

**PATIENT:** "Megs" Bellanca; a 35 year old equine, Percheron mare; 1700 lbs.

**DATE OF INITIAL PRESENTATION:** October 9, 2014

**HISTORY:** Megs is an old mare who was rescued by her current owner from the Amish ten years ago. She has been living in retirement with no work demands in a pasture/run-in shed environment. During the week prior, Megs seemed to be fatigued easily, having a difficult time just walking around her pasture. She seemed short of breath with minimal exertion. With winter approaching and recognizing Megs age, Megs's owner was seriously considering euthanasia.

**SIGNS/SYMPTOMS:** On Physical exam, Megs had a resting heart rate of 87 beats per minute. Her heart's rhythm was normal with no murmurs or arrhythmias heard. Her tongue was pale and swollen. Her pulse was fast but barely palpable. She was very weak; one could almost just push her down. She seemed out of breath with any exertion with a 'heaviness' heard in her lungs. Mentally she was dull and seemed "distant". She was very painful just behind her shoulders, on the acupuncture point Bl 14, 15. She has some slight pitting edema on her ventral midline just behind her fore legs.

**WESTERN DIAGNOSIS:** Cardiac deficiency; (In TCM, Heart Qi deficiency, heart fluid congestion)

**WESTERN DIAGNOSTICS:** cardiac auscultation

**TREATMENT GOALS:** to regain health and vitality; to strengthen cardiac function; to relieve mild lung congestion and ventral abdominal edema, to relieve a perceived cardiac pain.

To regain health and vitality; we need adaptogens or nervine.

To strengthen cardiac function; we need cardiogenic, antihypertensive, diuretic herbs.

To relieve lung congestion and ventral edema, we need a diuretic herb

To relieve cardiac pain, we need an antianginal herb.

### PRESCRIPTION- HERBS SELECTED AND WHY :

Convallaria majalis, Lily of the valley, leaves was used as "simple" formula. Lily of the valley is a cardiogenic, nervine with hypotensive, diuretic and antianginal effects by treating Heart Qi deficiency, heart Yang deficiency, nerve brain deficiency while relieving Heart fluid congestion. It is used for cardiac deficiency, tiredness, shortness of breath, heart weakness, chronic depression, confusion, cardiac edema. According to Ellingwood, "It strengthens the heart's action, slows a rapid and feeble pulse, corrects the rhyme and rhythm, improves the tone and increases the power of the heart. Its influence is exercised in a regular, steady and permanent manner. It overcomes general depression; it is of much service when there is a pale, flabby mucous membranes of the mouth, broad, thick, tongue with heavy dirty white coating. Dosage: 1:5 tincture; 60 drops three times a day.

**ADVICE GIVEN:** Megs's owner was on the verge of choosing euthanasia. We decided that we would try something simple and relatively inexpensive, to "give her a chance" before winter comes. Megs had been on a vitamin E/organic Selenium supplement; but we also added 400 mg of Co Q10 a day to improve mitochondrial function.

### FOLLOWUP:

**November 13, 2014:** Megs cantered up to the barn when I drove in. Her owner was ecstatic with the improvement in her energy and attitude. On physical exam, her heart rate was down to 39 beats per minute, there is a slight sense of heaviness in her lungs, but no ventral abdominal edema, and mentally she is bright and alert with her inquisitive nature back. Plan: decreased her dose to 40 drops twice a day. (Ellington writes that Lily of the Valley's effects can last for a long time after the herb is stopped) with two days off with no herbs per week.

Although her edema seemed to have resolved, we added *Taraxacum officinale*, Dandelion leaves to maintain proper potassium levels and to fully resolve her pulmonary congestion. 40 drops of a 1:2 tincture twice a day was to be given with the Lily of the valley.

**REFLECTION ON YOUR EXPERIENCE:** There is justifiably great concern over the use of cardiac glycosides. Glycosides found in *Convallaria majalis* though are rapidly cleared and do not accumulate making this cardiac glycoside much less toxic. In my opinion, *Convallaria* is an underused cardiac herb. The prognosis for horses with congestive heart failure is poor to grave. Although Megs had not yet developed into a full cardiac failure, her heart was very weak. The pharmaceutical drugs given in an attempt to cope with the condition have many side effects including laminitis and colic, toxicity issues are common and cost is often prohibited. *Convallaria* can be used safely provided it matches the therapeutic indications and therapeutic cautions are observed. Commission E approved the use of *Convallaria* for mild cardiac insufficiency, heart insufficiency due to old age, and chronic cor pulmonale. Although potassium levels need to be watched, it is suggested that any side-effects can be avoided with the concurrent use of *Taraxacum* leaves.

Currently, Megs' owner is very happy. We are in a wait and see plan but her owner feels grateful that we have already given her additional time with a good quality life.



*Taraxacum officinale*, **Dandelion**



*Convallaria majalis*, **Lily of the Valley**

# HERBAL MONOGRAPH: AMERICAN GINSENG



Photo courtesy [herbamasakini](#)

**COMMON NAME:** American Ginseng

**LATIN NAME:** *Panax quinquefolium*

**OTHER NAMES:** Five Fingers, Tartar Root, Red Berry, Man's Health

<b>Common Name: American Ginseng</b>	<b><i>Panax quinquefolium</i></b> , Five Fingers, Tartar Root, Red Berry, Man's Health
<b>Family</b>	Araliaceae
<b>Part Used</b>	Root
<b>Active constituents</b>	Triterpenoid saponin glycosides, ginsenosides, (Quinquenosides I,II,II, IV and V are ginsenosides unique to this species. <i>P. quinquefolium</i> also contains ginsenosides found in <i>P.ginseng</i> ) and panaxoside 5-7%; essential oils 3%; resin; mucilage, starch, Unique high molecular weight polysaccharides known as glycans (quinquefolans A, B, C),, 18 amino acids, trace mineral, copper, zinc, selenium, iodine, manganese; polyacetylenes, sesquiterpenes, sterols, flavonoids; The bitter taste comes from the sesquiterpene content.
<b>Actions</b>	Bitter tonic, rejuvenative, adaptogen, mild stimulant, and of the central nervous system; bitter tonic, immune amphoteric; mild demulcent; adaptogen, nerve tonic; Chinese Actions: 1. Spleen Qi deficiency; Liver Yin Deficiency: increases digestive Qi, promotes absorption and relieves fatigue, restores the endocrine and nervous systems, replenishes deficiency and enhances immunity; 2. Lung Qi deficiency; Lung Yin deficiency and clears deficiency heat; 3. Heart Blood and Spleen deficiency, nerve and brain deficiency
<b>Indications</b>	Brain exhaustion from overwork; dry red tongue with often yellow coat and tooth decay;; Weakness and debility from chronic illness or stress, cough, "nervous stomach" with lack of saliva, loss of appetite, malabsorption, adrenal cortex deficiency, estrogen deficiency relaxing tonic that also improves mental function. Diabetes. Gravel with weakness; ligamentous looseness, adaptogen from radiation treatments; yin deficient geriatric tonic, improves cognitive function, absent-mindedness, unrest, depression, cerebral anemia.
<b>Cautions</b>	<b>Endangered herb use only cultivated sustainable sources; never use wild American Ginseng</b>
<b>Contraindications</b>	Forbidden in intestines damp cold with indigestion and in high fever; incompatible with Li Lu, Radix et Rhizoma Veratr
<b>Herb Drug Interactions</b>	At very high doses it can alter the effects of warfarin.
<b>Dosage</b>	(use animal doses where available, otherwise human doses can be included here but specify): Human: Powdered root: 0.25 – 2 gm daily; Tincture:0.25 – 2 ml TID; Tea (1/2 tsp powdered root boiled in 1 cup water): 1/4-1 cup TID; Matt Wood uses 3-5 drops 1-3 times a day Small animal: dried herb: 25-300 mg/kg, divided daily; Decoction and infusion: 2.5-10 g per cup, 1/4-1/2 cup per 10 kg, divided daily

**Notes:** American Ginseng is native to deep forests in Eastern North America. It is sweet, nourishing and moistening whereas Asian ginseng is more strongly warming and moistening

**Tissue State:** atrophy

**Energetics:** Sweet, slightly bitter, neutral and cooling, moist

**Meridians Affected:** spleen, lungs heart

**Native American use:** Cherokee: analgesic for headache, anticonvulsive, expectorant, used for colic; weakness of the womb and nervous affections; for oral thrush; Creek: also used poultice for bleeding cuts; diaphoretic and febrifuge; short-windedness; used for cures where all others have failed; antiemetic, and vomiting from cholera morbus, vomiting gall; rheumatism; ear drops for ear ache; topical for sore eyes; seedpods during a difficult labor; smoked for asthma; used for gonorrhea; used in hunting bundles; strengthener of mental powers; Meskwaki: also used as an adjuvant to render other remedies more powerful, love medicine; considered the universal remedy for children and adults; Micmac also used as a detergent for the blood, reproductive aid; Semimole also used to ward off baby's fearful dreams about raccoons or opossums.

**Matt Wood:** It is the ideal Yin tonic or moistener and rejuvenative for dry mucosa. It works slowly. By increasing lubrication it is cooling, but deeper down in the endocrine system it has an activation effect, which is warming. It is the most soft and feminine plant in the woods. Specific Indications: nervous exhaustion, following loss of fluids, dry, atrophic debilitated habits, exhaustion of the brain or nervous system from overwork, children that are too nervous to play lack of saliva, loss of appetite, weak stomach, dry, red tongue, sometimes with yellow coating and tooth decay; gravel with weakness, ligamentous looseness, easily injured, slow to heal, pain in bones, with weakness, worse from exposure to cold; arthritis, travel fatigue

**Holmes:** It acts as a yin tonic, moistening and rejuvenating dry mucosa while it deeply stimulates the endocrine system by warming it. Hence, it is one of the herbs that can expel a deeply retained pathogen in the Tai yin level.

**William Bryd** said of American Ginseng "Its virtues are, that it gives an uncommon Warmth and Vigour to the blood, and frisks the Spirits beyond any other Cordial" He used it "as a help to bear Fatigue, I us'd to chew a root of Ginseng as I Walk't along."

The early eclectic herbalists used American Ginseng mostly for exhausted digestive systems and mental exhaustion from overwork.

**Samuel Henry** (1814) wrote that, " This root is good in gravel and all debilitated habits, creates a good appetite invigorates the system and is an excellent restorative to those fatigued by travelling; in all weaknesses from excess in venery." It helps treat bone pain from cold, and gravelly complaints; bone pain from syphilis, hence strongly indicated as a recovery from Lyme and vaccine induced diseases.

**Jacob Bigelow** used it for moistening and nourishing the mucosa of the respiratory tract, in tedious chronic coughs, incident to people in years.

**Fyfe:** It has been employed in nervous dyspepsia with marked advantage. It is a true nerve tonic, and exerts a quieting influence. It aids the stomach in performing its functional action, and not only increases the muscular power of the stomach, but it stimulates the gastric glands. It is especially adapted to cases in which the brain and nervous system have been overworked. The effects of ginseng are not promptly manifested, as it is slow in its action. It is a nerve tonic and stimulant; Indications-gastric derangements of nervous origin, nervous debility; loss of appetite; exhaustion of the brain or nervous system from overwork.

**Scudder:** It is feebly tonic, a pleasant stomachic and aromatic stimulant, a gentle nervine, slightly diaphoretic and somewhat demulcent; it promotes the appetite, facilitates digestion and invigorates the general system, and is consid-

ered beneficial in morbid states of the nervous system. It can be used as a nervine and antispasmodic, either alone or associated with other agents belonging to that class, in cases of debility or irritability of the nervous system. Scudder used it for lack of saliva and noted that it must be used for weeks to obtain good results.

**Ellington:** improves capillary circulation of the brain and used in cerebral anemia.

**Wynn and Fougere:** This herb is similar to P.ginseng, but is considered milder and safer for use in younger patients.

**Holmes:** It is outstanding in its ability to tonify Lung Yin, which is unlike Asian ginseng which is put under the Qi and Yang tonics. It is the best cookie-jar tonics for the Earth/Melancholic and Lung types. With its adaptogenic effect that tones brain and endocrine centers, it enhances long-term immunity and reduces the ravages of stress. Possessing a restoring/regulating influence on digestive and metabolic function it is one of the best Qi tonics known. Its sweet, bitter qualities fully substantiate this. It is similar to acupuncture points; CV 6, 12; St 36; Bl 24, 38.

**Historical note:** Daniel Boone made his fortune trading American Ginseng; George Washington relied on the money made from Ginseng sales to fund the war effort. Although the root is traditionally used; David Winston's uncle would put a bit of a Ginseng leaf in all of his herbal formulas, he said it made everything work better.

**Published research:** prevents colds, improves exercise performance, antioxidant activity show, reduces prolactin levels; may regulate GABAergic neurotransmission; has hypoglycemic activity; its safety is noteworthy for long term treatment; has potential chemopreventive effects and may prove to be a therapeutic agent against hepatocarcinogenesis; attenuates intermittent-high-glucose-induced oxidative stress injury; causes regeneration of  $\beta$ -cells resulting in enhanced insulin secretion; protect the myocardium by attenuating oxidative stress and ERS induced by myocardial infarction, highlighting the ERS pathways as potential therapeutic targets for AMI. (Acute myocardial infarction; ); improves cancer related fatigue; potent antitumor activity; beneficial supplement during chemotherapy for enhancing the antitumor efficacy and reducing the toxicity of the chemotherapy; prevents the diabetes-induced retinal and cardiac biochemical and functional changes probably through inhibition of oxidative stress; potent inhibitory effect of ginseng against leptin-induced cardiac hypertrophy; reduced the growth of 3T3-L1 cells, down-regulated the accumulation of lipid and up-regulated the expression of adiponectin in the 3T3-L1 adipocyte cell model.; is critical in achieving life span augmentation in these leukemic infant/juvenile mice; can be used as an effective adjuvant agent for the clinical management of colorectal cancers; significant improvement of working memory (WM) performance associated with *P. quinquefolius*. Corsi block performance was improved by all doses at all testing times; exert anti-cancer effects; Clinical study of supportive therapy with radiation.

### **In Traditional Chinese Medicine:**

Xi Yang Shen, *Panax quinquefolium*

**Properties:** bitter, sweet, moist

**Channels:** Kidney, Heart, Lung

### **Actions:**

1. Tonify Qi and nourish Yin; Lung and Kidney Yin Deficiency
2. Clears Fire and Generates Body Fluids;
3. Sedates Heat in the Intestines and Stops Bleeding

**Chen:** Xi Yang Shen is cool in nature and is stronger in nourishing the yin and sedating fire, while its qi-tonic action is weaker than that of Ren Shen. As such, Xi Yang Shen is best used for patients with both qi and yin deficiencies as is often seen in Lung yin deficient fire. Ren Shen is warm and stronger in tonifying qi and is used for patients experiencing deficiency and cold. Ren Shen is especially effective for severe conditions where there is exhaustion of qi, in which case the patients often show Spleen and Stomach deficiencies, Lung qi deficiency, qi and blood deficiencies or possible Qi collapse.

# HERBAL MONOGRAPH: TURMERIC



Photo courtesy Wikipedia

**COMMON NAME:** Turmeric

**LATIN NAME:** *Curcuma longa*

**OTHER NAMES:** Indian Saffron

<b>Common Name: Turmeric</b>	<b><i>Curcuma Longa</i></b> , Indian Saffron
<b>Family</b>	Zingiberaceae
<b>Part Used</b>	Root
<b>Temperature</b>	Warm
<b>Taste</b>	acid, aromatic, slightly bitter
<b>Organs</b>	Sp, St, Intestines, Liver, GB, Ht
<b>Cautions</b>	Mills and Bones: No proven increase in the frequency of malformation or other harmful effects on the fetus despite consumption by a large number of women as an item of diet. In Ayurvedic medicine to treat vomiting of pregnancy, and in Indonesia and Fiji, is given at parturition and given to promote lactation.
<b>Actions</b>	<ol style="list-style-type: none"> <li>1. regulate Intestines Qi, regulate St Qi-carminative, anti-inflammatory-to treat abdominal distension and pain, flatulence, constipation</li> <li>2. regulate Spleen qi: hypoglycemic- adjunctive treatment for diabetes type 2</li> <li>3. tonify and regulate liver qi; choloretic, hepatoprotective, hypolipidemic, anti-fibrotic- hepatic and biliary weakness, prevention of gallstones, liver fibrosis</li> <li>4. regulate Blood, clear heart Phlegm-cardioprotective, antiplatelet, antilipidemic</li> </ol> <p>Therapeutic benefits as an adjuvant therapy for precancerous conditions and for gastric ulcers.</p> <p>Curcuma is a stimulant with an affinity to the liver, gallbladder, and digestive tract. As a stimulant to the liver it acts on both the catabolic side to "purify the blood" and on the anabolic to create more bile. It is also thought to rebuild hepatic tissue. By increasing the output of bile, it promotes gallbladder function, clears intermittent heat and chills, fullness, constriction, heat and pain in the gallbladder region and jaundice. While increasing bile production, it stimulates digestive secretion and is used as a carminative. By stimulating liver function, and increasing the circulation to the periphery, Turmeric is used to remove skin conditions associated with impure blood, coagulated blood, and depressed circulation. Turmeric has an effect on the uterus that is quite strong, causing contractions for several hours. By stimulating the general circulation and uterine contraction it removes coagulated blood and promotes the menses.</p>
<b>Tissue States</b>	(Matt Wood) Depression, stagnation

## **Traditional use in China (Chen and Chen)**

Rhizome-Jiang Huang

**Properties:** warm, acrid, bitter

### **Actions:**

1. Activate Blood circulation, eliminate blood stasis- pain due to blood stasis-hypochondriac, chest, epigastric pain also hepatic pain
2. Opens Channels and collaterals to relieve pain
3. Reduces swelling

Yu Jin-Tuber

**Properties:** acrid, bitter, cold

**Channels:** Liver, Heart, Gallbladder

### **Actions:**

1. Activates Qi and blood Circulation and relieves pain
2. Clears Heat and cools Blood-treats bleeding from heat in the blood
3. Clears the Heart, opens orifices and promotes consciousness- treats disorientation,, epilepsy, mania
4. Treats jaundice

## **TIERRA**

Michael Tierra writes that it regulates the menses, aids digestion, dissolves gallstones, decongest the liver, and may be combined with barberry or Oregon Grape root for releasing the liver as Chai Hu. It relieves menstrual pains and helps reduce uterine tumours.

## **KHALSA**

Karta Purkh Singh Khalsa writes: Turmeric is a perennial herb of the ginger family. It is extensively used for flavor and color in many foods around the world, known as Indian saffron. It has wide applications and is used to treat arthritis, ulcers, flatulence, bloody urine, bruises, colic, chest pain, jaundice, menstrual difficulties, hemorrhage, and toothache. It is classified as aromatic, stimulant, tonic, caminative, anthelmintic, vulnerary and antibacterial. and has adaptogen-like properties. It has two primary actions; inhibition of lipoxygenase, and antioxidant effects. Turmeric's anti-inflammatory effects are comparable to cortisone and phenylbutazone. It treats pain directly; it depletes the nerve endings of substance P, and suppress pain through the COX-I and COX-II enzymes. It is widely used for indigestion, and can treat dyspepsia. It increases the mucin content of the stomach and stops bleeding so it can stop ulceration of all types of gastritis, peptic ulcer and irritable bowel syndrome/colitis. (Hemorrhoids also respond well to turmeric.) It is used to treat Inflammation of the skin; as it reduces heat and cleanses the liver. It is also useful in treating all connective tissue, as it can help to stabilise collagen, and will enhance healing after surgery, reduce adhesion and scarring. Topically, it has been combined with Neem to kill insects and heal skin lesions, used to treat scabies and ringworm. It has proven potential to prevent cataract formation; and also for any inflammatory eye conditions. Modern Research shows it has broad anti-cancer effects. It affects cancer during initiation, promotions and progression of the tumors. Historically has been used specifically in the treatment of breast or uterine cysts or tumors. It increases Bile flow, increases bile acid output and increase the solubility of the bile; reduces liver enzymes; considered to be a blood purifier, normalizes cholesterol, can reduce bleeding, reduces arterial plaque, and inhibits platelet aggregation It has also been used to treats anemia.as it facilitates the production of new blood cells. Long used as a respiratory herb, turmeric excels in reducing cough. (A household remedy is turmeric with coriander and cumin. Gargle with warm turmeric tea, or drink turmeric boiled in mild to relieve coughs and sinus congestion) turmeric has a long history as an antimicrobial; inhibits a wide variety of microbes, including staph, strop, ameobas, and fungi. It is anti-diabetic in its action and will help to normalize blood sugar. Being anti-inflammatory and astringent, it is a superb medicine for oral care.

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*Image: Herbs, marketplace in Mongolia*



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