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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". Nonveterinary 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

**President:** Robert Silver  
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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

## Welcome to the Spring Edition of the VBMA Journal!

This action-packed 41 page issue has a Memorium for our dearly-missed colleague, Kerry Ridgeway, who passed away this year. Kerry's contribution to our profession is his legacy that will live on long after we have all passed. Thank you Kerry, we miss you much!

We have several interesting clinical reports from members in this issue. Astri Hagenlund, our Norwegian colleague and who is also featured in our Day in the Life column, has contributed a case report of the herbal treatment of Demodex in a canine.

Our own Rick Palmquist reports on the use of a TCVM herbal formula, Liu Jun Zi Tang in managing metastatic gastrin-secreting tumor in a dog. Rick has addressed this herbal approach as yet another tool we can use with our pet hospice patients.

Cindy Lankenau has contributed a case report detailing the herbal treatment of juvenile lymphosarcoma with thymic involvement in a Ferret.

Our snapshot of a Day in the Life of an herbally-knowledgeable holistic veterinarian follows one of our European members, Astri Hagenlund, DVM, CVA from Norway, from the moment she awoke to her own dog's retching, through the many hats we all wear in our lives as caretakers of animal health, and caregivers to our own families.

Our colleague from Down Under, Elaine Cebuliak generously contributed three offerings for our Masterchef column - two anti-cancer recipes (Turmeric Bomb and Paw Paw Leaf Tea) and one to treat swimmer's ear infections. All simple to prepare and easy to use.

I've written a "short" article expanding our current knowledge of veterinary applications for Cannabis sativa L., which also gives some background on this multifunctional plant.

Our herbal monographs this issue are for Cat's Claw, (*Uncaria tomentosa*) and common Garlic (*Allium sativum*), and you'll also find a review of one of our favorite speakers, Jeffery Yuen, who presented a riveting seminar on Stones and Gastroenterology, all submitted by Cindy Lankenau.

Also, don't forget to read an update about our VBMA annual meeting held in Augusta Georgia last Fall, and some more details regarding our international and domestic Eco-tours this year to Peru and the Rainforest of Washington State.

Whew! What an amazing issue. Our thanks to Amy Keane, Journal editor, and our many contributors for a job well done.

Rob Silver, your Fearless Leader 😊

## EDUCATIONAL EVENTS

### [NYCAVMA Annual Conference](#)

April 8th - 10th 2016

Niagra Falls, NY - Featuring a plant-centered workshop with botanist Judith Sumner and a two-day seminar on pulse and gold bead implants with Dr. Terry Durkes. Click link for info.

### [VBMA Domestic EcoTour 2016](#)

Quinalt, Washington June 12th - 16th

We'll be staying at the Rain Forest Resort Village. There will be hiking, lectures and free time. Details are available on our website.

### [VBMA International EcoTour 2016](#)

Jillian in the Jungle, Cusco, Peru

July 20th - 30th

The price is \$2,850 and includes all expenses except the airfare to meet in Cusco. The trip only accommodates 12-15 people, so sign up soon. Our past president Laurie Dohmen wrote of her experience here in the [Winter 2015 VBMA Journal](#). It was one of the most powerful and amazing experiences of her life. For more information and to sign up, click the link above to visit our EcoTour page or contact Dr. Jillian Stansbury of Naturopathic College of Natural Medicine directly at: [jstansbury@ncnm](mailto:jstansbury@ncnm).

## 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.

### **2016 Requirements**

A 1000 word essay on "The emerging science of herbal medicine - from tradition to the potential role of herbs in solving some chronic conditions in veterinary medicine", due July 15, 2016. This essay must be sent 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.

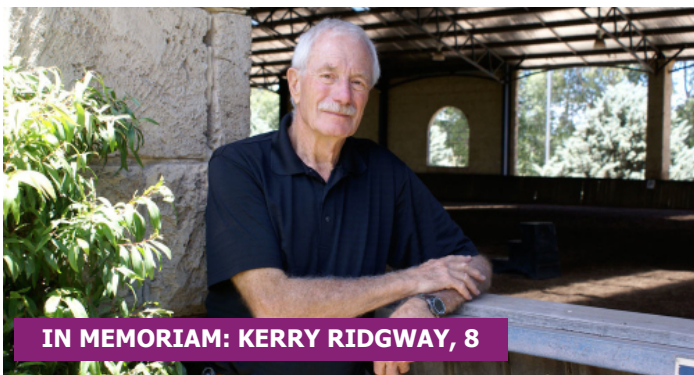
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# VBMA NEWS

## VBMA ANNUAL MEETING



Our annual meeting was held in Augusta, Georgia on October 17th, 2015. Pictured above are Past-President Laurie Dohmen, President Robert Silver, President-Elect Ihor Basko and International Advisor Barbara Fougere.

If you'd like to read the Annual Meeting Minutes and President's Message, [CLICK HERE](#).

## VBMA INTERNATIONAL ECOTOUR

**JILLIAN IN THE JUNGLE, CUSCO, PERU**  
**JULY 20th - 30th**

From Laurie Dohmen, VBMA Past President: I have the long-awaited details of the VBMA ecotour to Peru! The price is \$2,850 and includes all expenses except the airfare to meet in Cusco. The dates are July 20-30, 2016. The trip only accommodates 12-15 people, so sign up soon. If you want details of the trip, I wrote a review of my experience in the [Winter 2015 VBMA Journal](#). It was one of the most powerful and amazing experiences of my life. I took over 600 pictures of herbs, and over 50 pages of notes. It was definitely a total herbal immersion and I got more than my money's worth. For more information and to sign up, please download the documents that appear below or contact Dr. Jillian Stansbury of Naturopathic College of Natural Medicine directly at: [jstansbury@ncnm.edu](mailto:jstansbury@ncnm.edu)

## VBMA 2016 DOMESTIC ECOTOUR

**QUINAULT, WASHINGTON JUNE 12th - 16th** Have you ever wanted to spend time in the Valley of the Rain Forest Giants? The World Largest Sitka Spruce, a mountain lake and five miles of Quinault Forest trails will be steps from your door on our VBMA domestic EcoTour! The magic of cascading waterfalls, the magnificent Pacific Ocean and endless medicinal plants and soft green moss and lichen-rich forests await you. The rain forest and Olympic Peninsula are world-renowned, and whether you want easy flat hikes along river beds, mountain hikes with views and elevation or a combination of everything the Orcas have to offer, this EcoTour has it all!

This VBMA sponsored USA EcoTour is being held directly after the 2016 combined IVAS/AAVA meeting, June 8-11, 2016 in Tacoma, Washington. Register now at [www.vbma.org](http://www.vbma.org). [CLICK HERE](#) for a printable flyer.

### SCHEDULE:

Beginning on June 11, 2016, we will be traveling to Rain Forest Resort Village, located at 516 South Shore Road, Quinault, WA 98575. Here we will enjoy three days of herbal lore, hiking in the rainforest, native lore. This is a wonderful resort on Lake Quinault in the heart of the Quinault Rain Forest with fireplace cabins and suites.

### LODGING:

Participants **MUST** make their own room reservation and travel arrangements. Car pooling and room sharing is strongly encouraged. To co-ordinate travel and lodging, contact Cindy Lankenau at [cyndvm@gmail.com](mailto:cyndvm@gmail.com).

Speakers will include Hanna Jordan, Liz Hassinger, Donna Kelleher and Ihor Basko.

# NYCAVMA HERBAL TALK: JUDITH SUMNER



On April 8, 2016, the New York Complementary & Alternative Veterinary Association will be sponsoring a talk given by Judith Sumner, plant botanist, herbalist, and faculty member of the Herbal Academy of New England. She will speak for the day on various herbal topics including lessons and information taken from the old herbal texts, current herbal topics, and much more. Her day will be followed by a two day seminar on Pulse and gold bead implants by Dr. Terry Durkes. For more information go to [www.nycavma.org](http://www.nycavma.org) or contact Cindy Lankenau, DVM at [cyndvm@gmail.com](mailto:cyndvm@gmail.com).

In this plant-centered workshop on herbal medicine for veterinarians, we will begin with traditional medicine and ethnobotany, from the Doctrine of Signatures to the evolution of secondary compounds in ecosystems. We will focus on science (while still including some lore and history) to glean lessons from natural history, herbal medicine, Eastern traditions, zoopharmacognosy, and current research in veterinary herbal medicine.

Judith Sumner is a botanist who specializes in ethnobotany, medicinal botany, flowering plants, and plant adaptations. She has taught medicinal botany both at the college level and at botanical gardens, including the Arnold Arboretum of Harvard University and Garden in the Woods and has lectured for the Integrative Veterinary Herbal Medicine Course at Tufts/Cummings School of Veterinary Medicine. She writes and lectures for the Herbal Academy of New England and has been a featured lecturer at the several Herb Society (USA) annual meetings. Judith graduated from Vassar College and completed graduate studies in botany at the University of Massachusetts at Amherst. She studied at the Royal Botanic Gardens, Kew, and at the British Museum (Natural History) and did extensive field work in the Pacific region on the genus *Pittosporum*. She has published monographic studies in the *American Journal of Botany*, *Pollen et Spores*, and *Allertonia*, as well as monographing two families for *Flora Vitiensis Nova*. She is the author of *The Natural History of Medicinal Plants* and *American Household Botany*, which received the American Horticultural Society Book Award in 2005. In 2007 Judith was awarded the Gertrude B. Foster Award for Excellence in Herbal Literature by the Herb Society of America. She is currently writing a botanical history of World War II, tentatively titled *Plants Go to War: A Botanical History of World War II*. Judith is a frequent invited lecturer for botanical and horticultural organizations and symposia, including the New York Botanical Garden, Mohonk Mountain, Cornell University, Maine Garden Day, and Strawberry Banke.

## Elaine's Remedy Recipes

by Dr Elaine Cebuliak BVSc MACVSc, CMAVA, Queensland Australia

### Tumeric Bomb

#### Ingredients

- 100 ml of coconut oil
- 80 - 100 gm of turmeric powder
- 2 teaspoons ground black pepper OR Young Living or other food grade pepper essential oil 10 drops
- 2 tbsp cinnamon
- 1 tbsp nutmeg
- 1 tsp ginger powder

#### Directions

Take 1 teaspoon each day with your morning tea (or put it in the dog's food if treating dog 1tsp/30kg dog) and repeat as required, 3 times daily if requiring anti-inflammatory or anti-cancer properties. Store in fridge.



### Paw Paw Leaf Tea

#### Ingredients

- 1/2 Paw Paw Leaves
- 1/2 Wormwood (*Artemisia vulgaris*) Leaves
- 1 tbsp/100 ml Apple Cider Vinegar (optional)

#### Directions

Fill a pot with fresh leaves of both 50/50, cover with water and simmer for 20 minutes or more. You can add apple cider vinegar about 1 tbsp/100 ml to act as a preservative. It seems to last well in the fridge for weeks. Tastes very bitter, the alkaloids are powerful and amazing help for anticancer properties. Lots of literature in pubmed for both.

### Swimmer's Ear Infection Fighter

#### Ingredients

- coconut oil
- crushed onion
- garlic juice
- noni juice

#### Directions

I once had an agonizing swimmers ear infection on a remote island. Made a brew with fresh local coconut oil, crushed onion and garlic juice (all antibacterial, antifungal) and some noni juice topically for the pain. Had a dry day reading a book lying with sore ear up and a tissue wick of the juice, and was all better the next day- to resume snorkeling!



# IN MEMORIAM

## Dr. Kerry Ridgway

Memories of Moments from a Compassionate Life  
by Bruce Ferguson, DVM, MS Karawara, WA Australia



Although Kerry Ridgway and I never spent enough time together to become close friends, each of the few times that we did spend with one another felt very close and special indeed. So let me just remember some moments from Kerry's life to illustrate what an amazingly insightful and compassionate fellow he was and to honor this unique man. Kerry and I first met about 16 years ago when I was a TA for the IVAS Basic Acupuncture course in Havana, Cuba. I had already heard wonderful things about Kerry as a practitioner, innovator, and teacher, all of which were true. But Kerry was so much more than those simple labels. When I saw Kerry he seemed to be suffering and in quite a bit of pain. I asked him the source of his suffering, and he shared that he had chronic Lyme Disease and associated fibromyalgia-like pain. So, here was Kerry, suffering daily physical and psychological pain, and not uttering even ONE complaint. In fact, I had to dig it out of him. For Kerry, the task at hand was where he placed his energy and focus. He did not become distracted and whinge and whine, like many of us might have. Nor were his lectures "tainted" with negative comments and remarks concerning either people or events in his life. I asked this kind gentleman if I could be of assistance by giving him some bodywork or massage after his lectures and, although he accepted my offer, he was concerned that it might take some of my precious life time to give him my help, and was cautious about accepting. Kerry was always such a self-less gentleman. But his first great act of compassion which allowed me to see into his gentle soul, was concerning the equine subjects for our points identification labs. Cuba is, according to the Lonely Planet guide, "a third world country with first world citizens". And because they are so poor, the Cubans are forced to "recycle" virtually everything. This includes their horses. So the old, feeble, beasts of burden are killed and fed to the lions in the Havana zoological gardens. Their last stop, for at least this group of horses, was to be our acupuncture point models before they became lion-food. Kerry knew this, and he also recognised that these horses had been over-worked and underfed during their lives of service to the Cubans. This group, in particular, had been carriage horses, hauling humans and baggage around the historic but dilapidated city of Havana. So Kerry called for a few moments of silence to show respect and appreciation for these peaceful creatures who had served man-kind, and were continuing to serve even as they marched to their graves. I met Kerry again when he came to Western Australia to teach non-veterinarians various issues concerning saddle-fitting. Kerry was certainly a veterinarian wanting to help people to get the best performance out of their horses. But, even more so, Kerry was interested in the comfort of the horses themselves. He wanted these equine athletes to be happy in their world and work, and not to be tortured by the various man-made appliances used on their bodies. As you might expect, the multiday Saddle-Fit class was excellent, partly because of the contributions of Kerry's Equestrian partner, Christine. And that is another aspect of Kerry which I admired; the love that flowed from his lips in admiration of his wife, and the twinkle in his eye when he looked into her eyes, were and indeed are enviable. To see love spoken of and expressed so openly and willingly, touched the hearts of all of us. I was honored to loan Kerry and Christine my soft-top Mazda MX-5 for a few days while they visited. It was especially fun for all of us, because they had owned a similar car in the past and found joyful memories using this one. Probably my favorite memory was having them over to my home in Coogee, Western Australia where we talked about life and love and horses and all of the things associated with equine world that passionate practitioners such as ourselves might discuss. I could have spent weeks with Kerry and Christine, they were such repositories of information, each of them knowing so much more than I shall ever grasp about our equine companions. And the wisdom that accompanied their knowledge stands out as a type of active compassion that endears Kerry always to my heart. Lastly I must mention Kerry's insights in equine inflammatory or ulcerative bowel disease. He virtually discovered the pandemic of equine large bowel ulcerative disease and put me on a path of discovery of acupoint diagnosis. Further, he equipped me with the tools to work on the problem myself, and this has revolutionized my practice and saved innumerable horses from chronic pain. Thank you Kerry, the world is a little less brightly lit since you left us.

# A DAY IN THE LIFE

## Featuring Astri Hagenlund

DVM, CVA, Norway

I woke up this morning to the sound of retching and pacing – again...my own dog, Marte, is having a bad day – again...looks like morning routines will have to be postponed. I'm lucky enough to have time for yoga and/or work-out several days a week – great way to start the day. Then, tons of coffee makes me ready to attack the PC and get down to e-mails, answering the phone, set up appointments with clients, meeting deadlines for articles, course-preparations or – presentations, lectures – whatever is on the agenda. However, first and most important thing on agenda for today, will be to take care of Marte!



Marte and Fredrik looking for cats.

Standing next to my bed, a bit shaky – but still slowly wagging her tail as if to say “oh, I’m ok really – just a bit of vomit again...sorry about that”. Marte is a little old Border terrier-lady, who with terrier-zest has been collecting accidents, drama and injuries to body and soul over the years. Her collection of known diagnoses are, no wonder, also steadily growing and include periods of reverse sneezing/tracheal collapse after near self-strangulation episodes while on leash – regular use of harness has more or less taken care of that problem, though; mitral valve insufficiency; a “bad back” i.e. 4 slipped discs, spondylosis and arthrosis, causing a slight instability now and then in left back leg as only visible symptom. Her digestive system has taken some beating since a young age. Living on a diet of healthy, fresh food does not really help when you devour large amounts of potentially lifethreatening tid-bits lying around; one Christmas, eating large amounts of chocolate (and the box!) – the following Easter, emptying a bowl of Brazil nuts and – not to forget the Winter she ate glass, having found some nice-tasting leftovers buried in the snow after the roads had been cleared – only the “nice taste” was very much part of the original wrapping - a smashed

bottle...these things happen when you have a rather dim owner with little imagination as to what a terrier is able to do...and eat! That said – Marte is also the smartest, most easy-going and nicest dog ever. My grandchildren love her and consider her one of them; they share all treats and play games adjusted to age and circumstance – often involving a tennis-ball. She is a trained search-and-rescue dog, she can also search and find mushrooms, she does well in obedience – and will happily show-off with all her circus tricks when prompted. But it seems that age and injuries are catching up on her and I feel pretty useless trying to sort this out. What is really the main issue – now? The very cold weather we’ve had for weeks is not doing her any good...but – the retching, vomit, anorexia and pacing and belly ache?! Jeez – being an owner/vet is not always the best combination. I’ve had nightmares lately, recalling the more obscure and horrid diagnoses from our days at vet school – thinking “what if it’s not just the bad back causing pain and stagnation...what nasty things could be lurking in liver..kidneys...spleen!?! Acupuncture and herbs certainly help – but ...” Aaargh - definitely time to take dog to the vet!

After dressing up for the arctic cold – minus 16 Celsius today, we go for a short walk hoping to empty bladder and bowel before check up. The garden holds plenty of signs of visitors from the forest near by; moose tracks and droppings from our friend the cold and lonely year old calf. She gnaws on our fruit trees – and the odd apple, really left out for the birds who flock around the feeding station all day. I’m amazed that these tiny, feathery creatures make it through the freezing Winter every year – though with a little help from their two-legged friends. The squirrels have wisely decided to just sleep through the cold spell, and Badger-boy I have not seen for a while – must be sleeping in a warmer den than under my veranda – but he’ll be back – leaving just the cutest little paw-prints behind.



Badger prints in the snow.

We show up early for the appointment at my “old” clinic where I have nice, clever colleagues working. I leave Marte with them for clinical exam, blood samples, radiographs and ultrasound. Instead of fretting in the waiting room, I sit

in my car and get gack to all "missed calls" on my phone. I only see patients one or two days a week now, and today nothing is scheduled as the two oldest grandkids are coming for dinner. But – phonecalls from "old" and new clients still needs to be taken care of. Owner of "Hero" has finally decided to take him for behaviour consultation – can I recommend someone? His skin and digestive troubles have cleared up nicely with acupuncture, herbs and change of diet but during his sick periods, owners' TLC was just that – loving and caring – but not including much discipline – and now Hero is "suddenly" a big, healthy, rowdy and pretty unruly GSD. Appointment for them is made with a behaviour consultant I work a lot with. Owner of "Daisy", sweet, timid little mongrel, calls for new appointment next week; we treat her hips with acupuncture when needed and then follow up with herbs. Three more owners of dogs with various painful muscle/skeletal problems are also fitted in for next week (achy bones ache in the cold).

But here comes Marte's vet – with good news; they've found...nothing! The relief! No indication of serious trouble except it's serious enough to be in agony due to a "bad back" – and certainly giving me a serious reminder; pain can make you puke! We decide on prescribing fast acting school medicine for pain now – we will try a rather new product in this country – Arthri Dog, combining phenylbutazone and prednisolon, to give instant and good relief at least untill the weather gets warmer. And, yes – keep up the acupuncture sessions as well as warm and support digestion and circulation with herbs.

Time for shopping for food. I leave Marte in the car, wrapped up in her wooly coat; just getting out of the clinic, she looks better already. We need something nice and warming today. OK – veggies are maybe not the most warming of foods, but various roots, sweet potato, onions, garlic, some peppers sliced and diced and rolled in oil and spices then all baked in the oven will be great with the meat balls. These I have already prepared; a small mountain of spicy venison meatballs sit in the fridge (yes, venison – I buy a deer or two from a hunter friend every year in order to eat "happy" meat or at least, meat from animals that have led a natural and happy life; meat from regular production animals are just too depressing to eat, and organic is not always available). I'm picking up the grandkids, age 12 and 9, after school. They will have dinner with us as mum and dad are working late. And for dessert? I think cocoa with a scoop of whipped cream - yummy.

Granddad Leif – my love my Leif - will entertain the kids after dinner – he enjoys games as much as they do and a serious game of Yatzy is on. Grandma serves cocoa and is politely invited to take part in the game – but Marte announces loudly that there is someone at the door, so Grandma will have to answer. Outside I find neighbour and dog. Neighbour looking very upset – demanding: "you must check "Milly" – I think she's pregnant!!!" Grandma must be vet, then – Yatzy and cocoa will have to wait while I try to talk neighbour out of panic. The dog's heat was 5 weeks back and even though neighbour was certain she'd not let the dog out of her sight at that time, she could not guarantee about hubby's time with dog...I check the dog and thoroughly palpate abdomen. This being a young, slim English setter I am 98% sure there are no pups in the making. Neighbour calms down – a bit, but I recommend her to take dog to clinic if she wants to be 100% sure. She might just wait and see – worrying now how much she will have to pay at a **clinic...\***

The kids beat granddad in Yatzy – I join them for one round – and get my cocoa! Too soon it's time to take the kids home – school again tomorrow. We put on all our clothes again, take Marte with us in the car, wave the kids off at home – kiss and goodnight – and go for our evening walk, meeting up with all the other dogs in the neighbourhood. There are nice big fields and paths nearby where the dogs can be off leash, meet and check their p-mails and we, owners, can say hello and catch up on the latest news. No one staying out long today, though – we all want to get back inside and keep the fire going. Marte happily settles down in sofa in front of telly with Leif.

I just have to go through my e-mails now; order herbs! – pay bills! – and spend some time preparing for next session of our IVAS/NoVAS basic course in acupuncture. I'm not lecturing a lot – but I will be giving a two hour lecture for the students: "Introduction to Chinese Herbal Medicine" and I'm such a slow lecture-writer! As I only use Western herbs myself, I also learn a lot preparing this lecture – and I can only hope the saying; "you teach best what you most need to learn" will prove to be true...

It's getting late, another day in my slightly fragmented life will soon turn into night. Dividing my time between clinic at home, board member of NoVAS; arranging courses, lecturing, travelling. Writing articles, giving courses for dog owners – and not to forget: training with Marte and also training myself – not just jogging, lifting heavy things or calming body and mind with yoga, but always finding new interesting stuff to study and learn. And my book! Or what I hope

will eventually be a book; my ambition is to complete the book-project I've titled "A herb a day..."

Last but not least – my four wonderful grandchildren. I consider myself extremely privileged to have them living nearby and being able to take an active part in their lives.

Oh – there's a message on the phone now from my son: "Hi mum – can you pick up Sander from kindergarten tomorrow?" Of course I can.



*Greetings from my den!*

**\*NOTE: We do not, as a rule, spay/neuter/castrate dogs in Norway; it's actually against the law to remove body parts from an otherwise healthy animal (as stated in our Animal Welfare Act).**



**VBMA Member Astri has worked with small animals part time or full time ever since graduation in 1988, combined with large animal practice for a few years and later as veterinary inspector in Ministry of Agriculture. After working in various clinics, she founded AlternatiVet AS in 2004 with two colleagues. The clinic's main focus was alternative medicine and rehabilitation. Today she works at her own home-based clinic, concentrating on acupuncture, herbs, nutrition, behavior and manual therapy. She writes articles on herbs and herbal medicine for small animals, lectures and gives short herbal-courses for animal-owners. Astri has been on the NoVAS board since 2004 with main responsibility as course arranger.**

# MINI CASE REPORT: CANINE

## Herbal Treatment of Demodex

by Astri Hagenlund, DVM, CVA, Norway

This case involved a 1 year old female, intact pug with demodex that came to the clinic referred from an acupuncturist colleague. The dog was a very tricky acupuncture patient and owner wanted to try herbal treatment as she was against "school medicine".

### Herbs Prescribed:

In tincture form - *Echinacea purpura* (echinacea), *Arctium lappa* (burdock), *Tabebuia impetiginosa* (Pau D'Arco), *Matricaria recutita* (chamomile), *Taraxacum officinale* (dandelion)

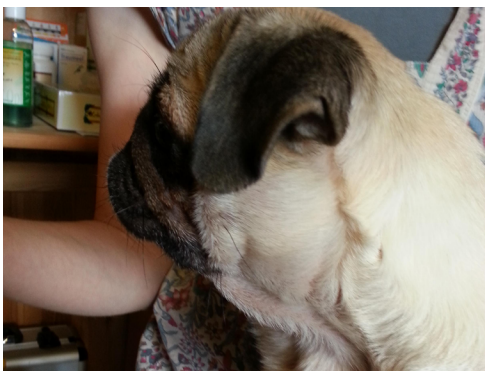
### Additional Treatments Suggested:

- Wash dog with Optima pH 1 – 2/week. Use spray on more acute spots if needed (Optima pH is an acetic acid based wash made by a Norwegian veterinarian).
- Diet modifications

The three photos below were taken after the dog had been on herbs for 2 weeks; already it shows that the coat has started to come back and red skin is much less obvious.



The first photo on the left below was taken on April 30th, 2014, the other two on May 26, 2014. By this date, the dog's coat and skin were more or less back to normal. All herbs tinctures were continued for some weeks, then the decision was made to keep administering echinacea long term on an alternating schedule. Also, the owner agreed to try "school medicine" if demodex should flare up again.



# CASE REPORT: CANINE

## Modified Hospice: Use Of An Ancient Chinese Medicine, Liu Jun Zi Tang, In Management Of A Metastatic Gastrin-Secreting Tumor In A Dog

by Richard E. Palmquist, DVM, Inglewood, CA

**Conflict of Interest Statement:** None

### Abstract:

An eleven year old, spayed-female mixed-breed dog diagnosed with terminal gastrin secreting neuroendocrine cancer of the pancreas, stomach and liver presented for humane hospice. The dog was heavily medicated, demonstrated profound weight loss and severe vomiting. Mentally, she seemed bright and alert, and without pain except for nausea. A Chinese medical examination was performed and nutritional and herbal treatment directed according to Chinese medical theory with the guardian understanding the grave nature of the case. The dog improved steadily, gained weight and began running and playing again. Even though her disease advanced, her condition and quality of life improved. This is a rare tumor and little exists in the formal veterinary literature. This case report serves to document the case and provide ideas for veterinarians in similar situations.

### Introduction:

Primary neuroendocrine, gastrin secreting tumors are rare in the dog. Surgery is often ineffective due to delayed diagnosis and aggressive nature of metastasis. Most treatments are symptomatic pharmaceuticals aimed at lowering gastric acid secretion and damage done by its excess. These "include inhibitors of gastric acid secretion (proton pump inhibitors and H2-blockers), gastro-protectants (sucralfate and misoprostol) and somatostatin analogs (octreotide)."<sup>1,2</sup> Definitive, evidence-based therapy does not exist, nor is it likely to in the near future owing to the rare nature of the disease.<sup>3,4</sup> Patients usually manifest complications leading from excess gastric acid secretion including ulceration of esophagus, stomach and duodenum resulting in anorexia, nausea, vomiting, regurgitation and weight loss. Disruption of intestinal digestion leads to maldigestion, loss of body condition and diarrhea.<sup>1</sup> In such cases veterinarians must make decisions based on several factors and this case report exists to contribute to our knowledge base of this condition.

Treatment of cancer has long concerned itself primarily with length of survival, but modern thinking in both human and veterinary oncology deals with increasing concerns regarding quality of life.<sup>5,6</sup> Conventional oncologists and integrative veterinarians recently united to address this topic in an unpublished paper.<sup>7</sup> No doubt further work will follow on this important issue.

Traditional Chinese Veterinary Medicine (TCVM) is spreading in popularity as veterinarians around the globe begin to see the benefits it presents for many conditions commonly encountered in veterinary practice. As the metaphorical language of TCVM is translated into more understandable scientific terms, veterinarians are beginning to appreciate the subtle power of metaphorical approaches. Enrollment in courses certifying veterinarians in various aspects of TCVM are rising steadily.<sup>8</sup> Sufficient evidence now exists to see acupuncture and herbal medicine electives taught within veterinary schools of the United States.

TCVM developed as professionals strove to improve the life of humans and animals. While these early pioneers lacked sophisticated scientific understanding and tools, they observed things directly and developed a system of communication that allowed them to craft therapeutic plans for a wide variety of diseases. They used simple but powerful traits, such as taste, to estimate usefulness of herbs. Through gradual trial and refinement, we come today to a large body of historical, ethnobotanical and scientific knowledge. In many ways, these medicines can accomplish things that modern drugs simply cannot claim.<sup>9</sup> It is our modern activity to translate this ancient knowledge into usable evidence so the profession of veterinary medicine can better serve its patients and public.

Liu Jun Zi Tang, also known as Rikkunshito or Six Gentlemen is an herbal formula originally published in the Tai Ting Hui Min He Ji Ju Fang (Imperial Grace Formula of the Tai Ping Era), circa 1078. Various versions are available commercially. It is purported to “strengthen Spleen Qi, transform Phlegm and stop vomiting.” The formula is appropriate for patients that are weak, fatigued, losing weight or suffering anorexia, diarrhea and/or vomiting. Such patients usually have pale tongues and weak pulses. While extremely safe, traditionally it is contraindicated in patients diagnosed with Yin Deficiency.<sup>10</sup>

This formula has extensive scientific research and while there are no randomly controlled, blinded trials in canine medicine, its phytochemical components are highly applicable. One canine study demonstrated a relaxing effect on the proximal stomach.<sup>11</sup> As an evidence-based practitioner and teacher, Marsden lists the following broad actions and uses that may stem from improving blood supply: countering degeneration of brain and resulting anxiety; improving energy; countering nausea from chemotherapy drugs and radiation therapy; improving appetite, immunity; as an aid in gastric adenocarcinoma; and in improving bone-marrow function.<sup>9</sup> Reviewing all the literature is beyond the scope of this case report. For interested readers see the following references.<sup>11,12, 13,14,15, 16, 17,18,19,20,21,22,23</sup> A meta-analysis regarding Six Gentlemen and another Chinese herbal strongly suggested that these herbs were superior to pharmaceutical agents for human dyspepsia, another finding in support of its common use.<sup>24</sup> The fact that this herbal combination has little effect on P-450 suggests little chance of drug interaction and relative safety.<sup>25</sup>

### Case Report:

An eleven year old, 17.5 kg, spayed-female, mixed-breed dog presented with a body composition score of 2/5 after undergoing extensive testing by a local board certified veterinary internist. Abdominal ultrasound revealed a large gastric mass, pancreatic mass, and extensive hepatic metastasis. Surgical biopsy demonstrated pancreatic neuroendocrine tumor, gastric carcinoma, and hepatic metastatic carcinoma. Chest radiographs appeared normal. The internist prognosticated less than two months of life expectancy. Gastrin levels performed at Michigan State University were pending on initial presentation, and found to be significantly elevated a few days later (112ng/L; normal range is 10-40ng/L). The dog’s conventional medical treatment plan included famotidine 10mg PO BID, ondansetron 4mg PO once daily, and metoclopramide 7.5mg BID PO before meals.

The guardian’s largest concern was her inability to eat, rapid weight loss and vomiting. She did not show sensitivity or pain but suffered from severe nausea. This patient had a long history of severe adverse reactions to food and rapid development of intolerance requiring frequent change in diet. Feeding history included commercial dry foods, antigen-restricted diets, home prepared and raw diets. Earlier in her life, she also suffered from dermatitis and otitis externa that seemed food related.

On initial examination she was alert, responsive and happy, deficient, listless and duller than normal. Her extremities were cool to the touch. She had a sour, rancid smell reflecting vomitus/esophageal reflux. Her pulse was slow, deep, and sufficiently weak as to be hard to locate. Her sclera and other mucous membranes were pale and had tenacious saliva and cloudy, white phlegm.

We discussed the grave nature of her illness, the rarity of the diagnosis and the lack of evidence base for the disease. The owner was aware of all these things and knew others whose animals and families had benefited from an integrative approach. He desired to “think outside the box to buy her some more time and quality of life.”

Our first prescription was for Liu Jun Zi Tang<sup>a</sup> at a very low dosage to test her response. The guardian was understandably concerned regarding any adverse effects or interactions. She was vomiting regularly, so we began at one tea pill BID PO X 5 days, then two tea pills in the morning and one at night. The higher dose resulted in increased vomiting and lethargy, so we added one capsule of Er Chen Tang<sup>b</sup> every three days to warm Stomach, move Phlegm and decrease nausea. She responded well. Suggested diet was whatever protein she could eat and keep down. After experimentation, the guardian found success with 2.5 oz of organic lamb bone broth TID, 3.5 oz of cooked ground organic pork TID, and 1.5 oz of organic pumpkin puree TID. Due to her severe digestive and immune challenge, no raw food was recommended.

Once she stabilized, her tongue remained thin and pale but phlegm disappeared. Her pulse stayed weak and deep and her coat showed fine flakes reflecting Blood Deficiency. Gradually, mild itching appeared. The addition of Xue Fu Zhu

Yu Tang<sup>c</sup> at one tablet PO BID resolved these signs within two weeks. We also could reduce her dose of metaclopramide from 7.5mg BID to 2.5 mg BID PO while maintaining excellent control of her vomiting.

The patient improved rapidly and was managed as discussed below. Her current weight is 19.4kg representing a 3/5 body composition score. Her stool is normal and she rarely vomits. She has an excellent coat, bright eyes and is extremely playful and mischievous. Her diet is unbalanced but she is thriving and has eaten this exclusive lamb bone broth, pumpkin and pork diet for longer than any other food without developing adverse signs. The guardian, veterinarian and family are very pleased. Recently we stopped ondansetron therapy.

### Discussion:

The word, diagnosis originates from roots that mean, “to look through and know.” Our purpose as clinicians is to perceive the normal and abnormal, and to gain an understanding sufficient to assist our patients in their efforts to maintain homeostasis. In this simplicity we find a quiet elegance within TCVM. We begin our examination by simply using our basic senses and observing our patient as we perceive the basic fundamental components of Qi, Yin and Yang, Blood, Fluids and organs involved.

In this case, we see low energy and exhaustion, which indicate difficulty with metabolic processes, circulation and elimination of wastes as imbalance leads to inability to obtain, hold on to, and transform nutrients, maintain body condition and continue vital functions. The balance is obviously shifted towards death. Without resorting to medical data, we see the following and can organize our Chinese medical diagnosis accordingly. The signs and significance in TCVM appear in Table 1 below:

**Table 1. Signs and Symptoms correlated with TCVM diagnostic rule-outs and treatment goals.**

Signs & Symptoms Observed	Applicable TCVM Diagnoses	Treatment Goal
Weak, listless, fatigued	Qi Deficiency	Tonify Qi
Slow pulse	Qi and Blood Deficiency, Cold?	Tonify Qi and Blood
Deep pulse	Qi and Blood Deficiency	Strengthen Qi and Blood
Whitish phlegm, copious mucous	Phlegm, Cold invasion?, Empty Cold	Transform Phlegm, Gently warm
Vomiting	Qi and Blood Deficiency, Stomach/Spleen Orans, Rebellious Qi, Damp invasion, Phlegm	Tonify Qi of Stomach and Spleen, Transform Phlegm, Drain Damp
Dull coat, Dry flakey coat, small flakes	Qi and Blood Deficiency	Tonify Blood and Qi
Erosive stomach and esophagus	Qi and Blood Deficiency	Improve Blood Flow
Tumor	Phlegm, Blood Deficiency	Transform Phlegm, Tonify and move Blood, Drain Damp
Tumor, endocrine	Possible Triple Heater Obstruction, stagnation	Reduce carbs in diet, increase vegetables, ease digestive efforts.
Tumor, stomach	Spleen injury, Damp Heat, Blood Deficiency, Qi Stagnation, Phlegm	Reduce dietary carbs, higher fat and protein, ease digestive effort. Antiangiogenesis, apoptosis.

When considering the following metaphorical issues, we seek an herbal combination that can relieve the issues and restore balance. Ideally we seek to gently support rather than suppress as this allows the body to maintain control of regulation and assist in healing. The contents and activities of Liu Jun Zi Tang appear in Table 2 below:<sup>9,10</sup>

**Table 2. Properties and Constituents of Liu Jun Zhi Tang.** Note, the formula prescribed herein contained Red ginseng and the following additional herbs: Da Zao (Jujubae fruit)(Tonifies Spleen and Stomach, Tonifies Blood, Calms Shen, Harmonizes, anti-cancer<sup>26</sup>), and Sheng Jiang (fresh ginger).

Chinese Herbal Name	Western Herbal Name	Comments
Bai Zhu	White Atractylodes root	Support digestion, reduce Phlegm
Fu Ling	Poria	Removes Damp, Supports Spleen

Ban Xia	Pinellia root	Transforms Phlegm and directs stomach contraction downward
Ren Shen or Dan Shen	Ginseng root, Red Ginseng root	Qi Tonic, Supports digestion, reduce Phlegm, Moves Blood
Chen Pi	Citrus peel	Directs Stomach Qi downward, reduces nausea
Gan Cao	Licorice root	Adaptagen, harmonizes formula, supports adrenal axis

Tonifying herbs like Panax ginseng, serve to activate energy production and protect against damage from reactive oxygen species.<sup>27</sup> In this way they create improved cellular function, increased resistance to toxicity, and improved tissue repair potential, which can delay disease and senescence.<sup>28</sup> In neoplastic cells, mitochondria are down-regulated in favor of more inefficient energy production through glycolysis. This prevents mitochondria from exercising their regulatory functions of inducing apoptosis. It also causes endogenous toxins to accumulate. Panax ginseng contains active constituents known to bring about apoptosis.<sup>29</sup> In this case we observed the dog's condition immediately improve, and as her energy increased, so did her nausea. She vomited more and with greater aplomb, but she looked extremely energetic and happy while doing so. This represents accumulation of toxins and unmasking of the chronic issue as the body addresses its imbalance.

The addition of Xue Fu Zhu Yu Tang, a Blood tonifying and moving herbal formula, brought improvement as circulation arrived delivering immune elements and the ability to carry away toxins while nourishing healthy cells with protein and fat nutrients that were not easily utilized by the cancer cells. Xue Fu Zhu Yu Tang also has antiangiogenesis effects that assist in slowing tumor growth and advancement.<sup>9</sup> Bupleurum within the formula supports immunity, shows anti-Helicobacter activity, protects liver from acute swelling and toxicity, and assists in Triple Heater obstruction if present.<sup>30, 31</sup> The sophisticated nature of these herbal formulas is readily evident.

Holistic and integrative pioneering clinicians have long discussed the importance of the Extracellular Matrix (ECM), which consists of connective tissue elements, neuro-endocrine and immune components, which autoregulate connective tissue function.<sup>32</sup> Taken together, connective tissue is found to be organized and highly responsive. It the largest organ in the body uniting all cellular activities. Ancillary CAVM fields such as Bioregulatory medicine concentrate of this area, which is particularly important in geriatric and cancer patients. The regulation and monitoring of the ECM is under the auspices of the fibroblast in coordination with the central nervous system and local reflexive arcs.<sup>33</sup> Improving mitochondrial function allows it to better regulate its critical functions, further supporting healing and repair efforts. Herbs that assist in drainage and improved mitochondrial function can only be beneficial in this sense. They become advanced and useful drugs in management of complex disease states such as cancer.

Congestion (Stasis and Stagnation) within the ECM leads to fibroblast malfunction and accumulation of materials, a phenomenon known in Chinese medicine as Damp. This triggers defensive efforts (chemoreceptors and pain pathways) leading to inflammation (Heat). This understanding of terms removes the mystique of metaphorical terminology and makes it quite clear what we are addressing.

In this case, efforts to support and balance the patient's needs rapidly improved her clinical condition in support of the guardian's desired quality of life goals. She became very active, playful and rapidly gained weight as her coat condition improved. Within three weeks she was running trails in the canyon and chasing squirrels.

She improved for a few more weeks and then began subtle itching and dry flakes, indicative of Blood Deficiency. Theoretically, as Blood arrived at the exterior it triggered detoxification and resulting mild itch as skin healed and coat improved. This is an expected and welcomed development. The skin contains active detoxification systems that may trigger inflammation as toxins move from the interior to the exterior. In this sense such changes are welcome. It took some discussion to convince the owner this was good, but eventually he realized the importance of not suppressing the process.

Three months later she developed urine leakage after exercise. This is a sign of Qi Deficiency and coupled with the itching caused me to prescribe a formula to raise the Qi upwards. Bu Zhong Yi Qi Tang<sup>d</sup> and Bladder Support Formula<sup>e</sup>

assisted both these issues nicely.

If we are lucky enough to continue this effort, I suspect she will begin to develop more obvious Damp Heat signs, which her lifelong food allergy/adverse reaction to food and earlier dermatitis signaled. I suspect her pathogenesis proceeded as follows: Damp (high carbohydrate, environmental and xenobiotic toxin accumulation, dry kibble diet), Damp Heat, Blood Deficiency, Qi Deficiency and Phlegm with malignant transformation. It is intriguing to wonder if her “pathology” is her body’s misguided attempt to create better digestion in an effort to better manage a troublesome diet. Formulas that cool and transform Damp will be helpful if those signs surface (ie, Si Miao Wan, San Ren Tang or Wei Ling Tang).

It is interesting to note that the doses of herbs utilized are much lower than traditionally recommended. Low doses of agents may be more stimulatory than inhibitory according to the Arndt-Schultz principle.<sup>33</sup> For whatever reason, in treating chronic diseases we must always treat the patient at hand and not be bound by written material that is not working in the clinic. Higher doses of herbs were not tolerated in this patient.

In spite of ultrasound evidence of tumor advancement, she is surviving in excellent condition four months past her initial visit (twice her anticipated prognosis). Her oncologist is now considering metronomic chemotherapy and palladia, and the guardians are happy to have these choices to consider. We call this approach “modified hospice” because it can continue for an extended time and involves actually giving sophisticated medications that support the patient, improve comfort and make it difficult for the tumor in spite of a grave prognosis.

### Footnotes:

- a. Liu Jun Zi Tang tea pills, Plum Flower, 1338 Mandela Parkway, Oakland, CA.
- b. Er Chen Tang 500 mg capsules, Jing Ting Herbal, Reddick, Florida.
- c. Xue Fu Zhu Yu Tang 550mg tablets, Kan Essentials, Kan Herb, 380 Encinal, Suite 100, Santa Cruz, California.
- d. Bu Zhong Yi Qi Tang, 500mg capsules, Jing Tang Herbal, Reddick, Florida.
- e. Bladder Support Formula, VetriScience, 200 New England Drive, Suite 10, Essex Junction, Vermont.

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# CASE REPORT: MUSTELID

## Ferret - Juvenile Lymphosarcoma with Thymic Involvement

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

**Patient:** Gracie Korts, 2 year old female spayed rescue ferret

**Date or Initial Presentation:** July 23, 2013 for TCM herbal, August 22, 2013 for initial western herbal intake

**History:** Gracie was rescued by her owner from a "ferret mill" two months prior; she had just been diagnosed by her regular veterinarian with juvenile lymphosarcoma with thymic involvement. On July 23, 2013 she was seen and was treated with TCM. In July, Gracie was a very depressed ferret. She did not explore the office; she just quietly lay on a towel on the exam table. She was in moderate respiratory distress with severe sneezing spasms. She was an exhausted animal. Her heart sounded muffled, her chest was not compressible; she also had a palpable mass on the right side of her abdomen in the area of her adrenal gland. She had no Kidney pulse; she was very painful on BI 20; with a palpable pit on BI 23. Her Chinese diagnosis was Kidney Qi deficiency with Qi and Blood stagnation with secondary Wind and pathologic Phlegm. To treat the presenting symptom of chest oppression, Gracie had been started on a Chinese Modular Formula called Harmonize Lung and Liver. This formula is designed to tonify Blood, disperse Blood and Qi, and dispel Heat, Wind and Phlegm. The primary herb in the formula is Bupleurum root, Chai Hu, a harmonizing herb. Fritillary Bulb, Zhe Bei Mu, and treated Pinellia rhizome, Fa Ban Zia are used in this formula to help resolve Phlegm; White peony root, Bai Shao Yao help to disperse blood; Lycii Fruit, Gou Qi Zi, is a yin tonifying herb that has stimulates a non-specific immunity and can suppress the growth of cancer cells. Scutellaria root, Huang Qin, clears Heat and Damp. Perilla seed, Zi Su Zi ; is used in the formula for the control of the symptom of coughing and wheezing. Licorice root, Gan Cao, is an adaptogenic herb that helps to harmonize the whole herbal formula and also in strongly antineoplastic. Cyperus rhizome, Xiang fu, is used in the formula to regulate the flow of Qi. Platycodon root, Jie Geng, helps to resolve and dispel pathologic phlegm. Chrysanthemum flower, Huang Ju Hua, and Morus leaf, Sang Ye, are used in this formula to help relieve the symptom of wind and relieve heat (inflammation) that is to clear the heat from the lungs. A formula to support her weakened state called Fu Zheng was also started. Fu Zheng includes Coriolus, Reishi, Cordyceps, Flammulina mycelium and fruiting bodies, Astragalus root; Eleutherococcus root bark and Suma root. The final herb used for Gracie was Chaste berry, Vitex agnus-castus. Chaste berry has been widely used to control the Pituitary-adrenal-gonad axis. The Harmonize Liver and Lung comprised 60 %, Fu Zheng 25 % and Chaste Berry 15 % of the formula. Gracie was sent home with these herbs in a tincture form with the owner given instructions to give 3-5 drops of the mixture three to four times a day.

**Signs/Symptoms:** Gracie had a remarkable change from July. Her sneezing and wheezing was gone, her chest auscultated normally with normal chest compressibility. It was assumed that her thymic mass was smaller if not gone. No mass was palpable in her abdomen. She was very active and inquisitive but very restless and seemed to be uncomfortable. She was now itching and ripping hair and skin. Her skin was rough, red yet had a very strong odor with a greasy feeling. She was covered with hot red papules and also oozing pustules. She seemed uncomfortable when touched or held. It was felt that she was "de-toxifying"; trying to heal herself of cancer and using her skin as her avenue to excrete toxins.

**Western Diagnosis:** Detoxification from juvenile lymphosarcoma with thymic involvement.

**Western Diagnostics:** Physical exam and observing the 'Law of cures'.

**Treatment Goals:** To restore health and vitality, To improve internal organ function in order to assist her excreting wastes and toxins; To give her symptom relieve of her itching; to give pain relief, to continue to use immunomodulation to prevent the reoccurrence of her cancer.

- To restore health and vitality, she needs alteratives, immunomodulating herbs and adaptogens.
- To improve internal organ function, we need trophorestorative herbs with alterative, cholagogue, lymphatic

effects.

- To assist excreting wastes, we need a slight laxative effect
- To give her symptom relief of itching, we need anti-pruritic, anti-inflammatory, alterative herbs.
- To give her pain relief, we need an herb with analgesic effects.
- To prevent reoccurrence or re-growth of her cancer, we need to maintain immunomodulation.

### **Prescription - Herbs Selected and Why:**

**Corydalis**, *Corydalis yanhusuo* - This herb is an analgesic used for blood stasis with pain, and can stimulate the liver and gallbladder. Corydalis inhibits cancer growth by inhibits MCF-7 cell proliferation by inducing apoptosis, relieves inflammation. Corydalis also has a strong anti-cancer metastasis effect. It also provides adrenocortical support. It is strongly indicated in the treatment of pain, especially from cancer.

**Figwort**, *Scrophularia nodosa* has anti-inflammatory, antimicrobial and alterative activity. It stimulates lymphatic circulation. It is also a skin tonic. Its use is specific if there is dry fragile skin with heat sensations or psoriasis with red papules. One of the specific unique symptoms that Gracie presented with was raised red papules.

**Red Alder Bark**, *Alnus rubra*, enhances liver and bowel function and is used for chronic skin conditions. It is an alterative, mild laxative and cholagogue with antibacterial properties. It is considered specific for skin conditions where the eruptions are red, and raised. Red Alder is strongly indicated for Gracie with her skin issues. Red Alder Bark also has been shown to have the ability to inhibit the proliferation and to induce apoptosis in a human colon cancer cell lines.

**Yellow Dock**, *Rumex crispus*, promotes liver and bowel function; to clear liver torpor. It has the ability to promote apoptosis in leukemia cells. It is a general tonic alterative that has special influence upon skin eruptions. Yellow Dock is a tonic and laxative- cholagogue, improves bile secretion and excretion. Some of Gracie's skin eruptions were more of a pustular nature with a slight dampness. Her overall coat felt damp with a strong fetid odour. Yellow Dock has a long traditional use in the treatment of cancer. Yellow Dock has been found to have cytotoxic activities on leukemic.

**Mayapple**, *Podophyllum peltatum*, is used to promote liver and bowel activity. The formula was made with a special water extraction to eliminate any potentially toxic resins that can be found in the rhizomes.

**Poke root**, *Phytolacca americana*, was added into the formula to help relieve the lymphatic stagnation. Poke root has strong antimicrobial, anti-inflammatory, anticatarrhal, diuretic, laxative effects and is a dermatological agent. Dr. Freidman, a ND uses significantly high doses of Poke root in the treatment of lymphosarcomas with excellent results.

Equal parts of a 1:3 tincture (Mayapple was a water extraction from Herbalists and Alchemists) were blended together. Gracie was given 5 drops of this formula three times a day.

**Followup:** October 12, 2013 - Gracie seemed to be in normal health. She had no radiographic evidence of her thymic mass, no palpable abdominal mass; her skin has cleared up with just a few dry areas. Gracie was maintained on a few drops of the formula since October, 2013. She had maintained a good level of health with no apparent recurrence of her cancer. In October 30, 2014, tragedy struck the rescue's facility, with a fire. Gracie succumbed to smoke inhalation.

**Reflection on this Experience:** Ferrets currently have a 70% chance of developing cancer, primarily insulinomas, lymphosarcomas or adrenal cancer, before the age of 3. When in these young pets, symptoms progress very rapidly. In this disease, large immature lymphocytes quickly infiltrate the viscera, including the thymus, spleen, liver, and many other organs. This form can take a myriad of clinical appearances depending on which organs are involved. One of the more common presentations results in dyspnea with rapidly growing thymic masses with pulmonary compression. The prognosis given using conventional medicines is extremely guarded in these cases; the survivability is often seen in weeks. Gracie was a remarkable ferret; she appeared to have been completely cured of lymphosarcoma. She demonstrated Hering's Law of Cures, in that, initially she felt better and was more active, and then her disease shifted for internally to the superficial level. Her disease appears to be been completely resolved. Although Chinese herbal medicines had been used initially, it was her western herbal formula with its alterative action that enabled her to completely excrete her disease.

# TCM: JEFFERY YUEN SEMINAR REVIEW

## Jeffery Yuen on Stones and Gastroenterology - February 2016, Tuscon AZ

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



Jeffery Yuen has been instructing students on the medicinal use of stones for many years. For thousands of years, they've been used traditionally as a component in Chinese herbal formulas and bring a 'consciousness' into the body that increasing the awareness of what is happening in the body.

Stones can be used as a topical treatment when taped to or worn on the body. Another exciting method is to bring the energy of the stone into the body by using acupuncture. Using a bead, a Copper acupuncture needle passed through the bead will bring the energy of that stone into the body. Pretty neat! Internally, stone elixirs can be drunk. Since there is only a almost homeopathic amount of actual material in these elixirs, this is truly a form of vibrational material.

As in all Chinese formulas, a stone formula involves the use of a principal stone, Jin; a associate stone, Chen; an assistant stone which acts as a transformer, Zuo; and an envoy stone which is our harmonizer, Shi.

This particular seminar focused on Stomach/Spleen issues so yellow colored stones predominated in the talk. Citrine (pictured at right) is one of the harmonizing stones. It can be taped on St 30 or needled through a citrine bead at St 36 and is considered the Lico-rice in the world of stones, carrying the intention of healing to the body.



The transforming stones are consciously aware of of their existence and want to be more refined and strive to move to their completion. Agates (shown at left) are examples of transforming stones.

In dealing with stomach issues, one of the most important tasks the digestive system conducts is to separate the pure and turgid fluids. This separation process is reflected in the use of Agates that are banded, yellow stones if a stomach disorder, or red agates if more of a small intestine issue. Banded stones are very helpful in cases of dysbiosis, directly on St 25.

Most of the principal stones Jeffery discussed were yellow in color like yellow prehnite, golden beryl, yellow calcite. The Liver is often involved in digestive issues, and if a disharmony is found between the Liver and Spleen, topaz (shown at right) is used topically on Liver 3 to harmonize those organs.



When discussing the principal and associate stone, there are three classifications of stones: primary, metamorphic or sedimentary. A stone classified as primary would be selected if the problem is at the Yuan Qi level, if at the Ying level a metamorphic stone, and if at the Wei level a sedimentary stone is used.

The amount of information presented at one of Master Yuen's seminars is amazing not only in the pure volume but also in the connections with the spiritual manifestations. From February 2-4, 2017, Master Yuen will be presenting another stone seminar in Tucson. This might be the last time he will be coming to Tucson for a while, so save the dates and plan to come! More information on Jeffrey Yuen can be found [here](#).

# LIVER DISEASE PROTECTION - CANINE

## Why You Need to Protect the Liver in Your Clients' Dogs - Now More Than Ever

by Ihor Basko, DVM, CVA

Liver disease can be a slow and insidious process. Dogs that are overweight, suffer from diabetes, or have reoccurring incidences of pancreatitis are the most susceptible. Inappropriate diets (high fat, high carb, rancid or moldy ingredients) and not enough antioxidant function by the liver are the usual causes of the onset of fatty liver disease and cirrhosis.

In current times, we have many liver-damaging environmental toxins that commonly appear in our food, air, and water. And with dog food increasingly made using contaminated food ingredients from China and other countries, aflatoxins, and "condemned for human use" meat from rendering plants, we are finding more environmental toxins in our commercial dog foods.<sup>1</sup>

Veterinarians are prescribing more monthly flea and tick preventative chemicals than ever (probably due to the rising incidence of Lyme's Disease), as well as (concurrently) heartworm medications, NSAIDS, phenobarbital, steroids, and antibiotics; all need to be detoxified by the liver.

With the increase in popularity of certain breeds, comes the increased incidence of their genetic problems. Belington Terriers, Doberman Pinschers, and Labrador Retrievers are susceptible to Copper Storage disease, while toy breeds such as the Maltese, Yorkshire Terriers, and Cavalier King Charles Spaniels are often born with liver shunt anomalies; Scottie Terriers can be susceptible to both diseases.<sup>2</sup>

As people migrate from cities to the countryside, unimmunized and at risk dogs may become infected with hepatitis due to leptospirosis, or CAV-1 virus from exposure to coyotes, raccoons and other wild life (bears, mink, ferrets, skunks, fox). The Adeno virus (CAV-1) consists of medium-sized double-stranded DNA molecules, which cause hepato-cellular degeneration and necrosis, resulting in chronic liver disease in adult animals, and a high fatality rate in puppies.<sup>3</sup>

The liver is an important organ of survival. It protects the body against the onslaught of harmful pollutants in drinking water, food, and air. These compounds and chemicals cause oxidative stress and DNA damage to liver cells resulting in poor function, fibrosis, cirrhosis and possibly cancer.

The liver processes and detoxifies digested food molecules into the pure energy and nutrients needed to feed and sustain the living being. We must protect and care for it with proper diets, antioxidants, and supplements that optimally support its functions.

### The Liver Has Many Functions

The liver is one of the largest internal organs in the body, and has over 500 functions. One of the most important functions is to process ingredients from the diet into nutritive factors which support regeneration in the body. The liver creates vitamins, antioxidants, enzymes, glucosamine, carnitine, and hormones, and generates and stores energy in the form of glycogen while also assisting in the distribution of nutrients to the appropriate organs and tissues.

The liver is important in detoxification of substances that are toxic and is responsible for removing them from the body. In the process, liver cells may die and tissues may become fibrotic or necrotic.

The liver also functions in transporting immune complexes from serum into bile which, when secreted into the GI

system, protect against pathogenic bacteria, viruses, and parasites.

In Traditional Chinese Veterinary Medicine (TCVM) terms, the Liver stores the Blood and manages and regulates the Qi (Energy) flow in the body. The Liver assists digestion and improves the Quality of the Blood.<sup>4</sup>

### The Liver Needs Protection and Regeneration

A good liver supplement should do the following:

- 1.) Provide hepato-protection from toxins, which cause DNA damage. These toxins include metabolic waste, oxidation, environmental toxins, as well as veterinary drugs, pesticides, and chemicals in the food and water;
- 2.) Improve function (transform and utilize food, dietary substances, and energy) including interactions with the pancreas, gall bladder, and intestines. It should break down carbohydrates and fat into energy, and create and recycle antioxidants;
- 3.) Regenerate new hepatocytes, reverse fibrosis, and improve intra-hepatic blood flow;
- 4.) Assist in detoxification of toxic metabolic by-products, toxins and heavy metals;
- 5.) Support related organs by decreasing toxins and oxidative stress on the heart, kidney, pancreas, and intestines;
- 6.) Protect against pathogens, viruses and bacteria, and parasites.

**Table 1. Summary of Therapeutic Properties of Various Ingredients found in Liver products**

Ingredient	Hepato-protection	Improve Function	Regeneration	Detoxification	Organ Support	Immune system	Anti-Inflammatory
Milk Thistle	X	X	X	X		X	X
Schizandra	X	X	X	X	X	X	
Astragalus	X	X	X		X	X	
Phos-Choline	X	X	X		X	X	X
Vitamin E	X	X	X	X	X	X	
Alpha-lipoic acid	X	X		X	X		

### Milk Thistle, St. Mary's Thistle, *Silybum marianum*, Silymarin

Historically, milk thistle has been used as a medicine for over 2,000 years, dating back to ancient Greece. Native American healers used milk thistle topically to treat skin infections and abscesses.<sup>5</sup> European herbalists and homeopaths used preparations to treat jaundice, peritonitis, gallstones, and bronchitis.<sup>6</sup> The German Commission E recommends milk thistle for treating digestive complaints, toxin-induced liver damage, hepatic cirrhosis, and as supportive therapy for chronic inflammatory liver conditions.<sup>7</sup>

Silymarin is extracted from milk thistle seeds and contains the flavonoids silybinin, silydianin and silychristin. The flavonoid silybinin, which is approximately 60-70% silymarin, has been identified as the main active ingredient. Silymarin has potential benefit in conditions such as liver necro-inflammation and fibro genesis, due to its free-radical scavenging, antioxidant, anti-inflammatory, and immuno-modulatory effects.<sup>8</sup> Milk thistle improves hepatic function<sup>9</sup>, v protects cell membranes from oxidative damage<sup>10</sup> and helps to neutralize toxins and repair damaged hepatocytes.<sup>11,12</sup>

Silymarin has synergistic effects when combined with vitamin E and phospholipids. A 2007 study demonstrated that treatment with silybinin + vitamin E + phospholipids led to persistent and significant reductions in ultrasonographic scores for liver steatosis, liver enzymes and hyperinsulinemia among subjects.<sup>13</sup>

Silymarin therapy helps correct liver damage and function from the chronic use of psychotropic medications and drugs. A 1998 study showed that silymarin had positive effects on histology, lymphocyte proliferation and lipid peroxidation; AST fell by 36%, the mean ALT by 34%, and GGT by 46%. There was also a decrease in palpable hepatomegaly.<sup>14</sup>

Silymarin enhances the activity of hepatocyte RNA-polymerase I, complexes toxic free iron, protects cell membranes from radical-induced damage, and blocks the uptake of toxins such as *Amanita phalloides* toxin. Silymarin is also a potent free radical scavenger, preventing lipid peroxidation and normalizing the lipid profile of hepatocyte membranes.<sup>15</sup>

### **Schizandra, Schisandra chinensis, Wuweizi, Schisandrin, Gomisin, Chinese magnolia vine fruit**

Schizandra is a woody vine with numerous clusters of tiny, bright red berries. It is found throughout northern and northeast China and the adjacent regions of Russia and Korea. The fully ripe, sun-dried fruit is used medicinally. It is an important herb in Chinese medicine, used as a tonic and restorative as well as for liver protection. It is also used to treat cardiovascular diseases, diseases of the nervous system, and in combination with other herbs for the treatment of liver disorders and digestive problems. Recently, there has been increased scientific interest in the herb's ability to treat liver cancer, and in its tonifying and adaptogenic effects.

The major active principles of schizandra are lignans called schizandrins. These substances have energizing properties because they increase the activity of enzymes, which participate in the oxidative phosphorylation process.

Schizandra reduces fatigue and increases exercise resistance.<sup>16</sup> It increases endurance and accuracy of movement, mental performance, and working capacity.<sup>17</sup>

Schizandra is a broad-spectrum herb. Its phyto-adaptogenic properties have beneficial effects on the central nervous, sympathetic, endocrine, immune, respiratory, cardiovascular, and gastrointestinal systems, as well as on lipid oxidation, blood sugar and acid-base balance, and uterine myotonic activity.<sup>18</sup>

Besides having phyto-adaptogenic and immuno-modulating<sup>19,20</sup> effects, the lignans in schizandra are believed to be actively hepato-protective,<sup>21,22</sup> hepato-regenerative, anti-inflammatory, anti-cancer,<sup>23,24</sup> and anti-HIV. The herb decreases hepatic total cholesterol and triglyceride levels (up to 50%), and is thus useful for removing fatty deposits in the liver.<sup>25,26,27</sup>

Schizandra and the herb astragalus have synergistic effects when used together.<sup>28</sup>

### **Astragalus, Astragalus membranosus, Huan Qi**

Over 2,000 years ago, the founder of Chinese herbal medicine, Shen Nong, first discovered astragalus, classifying it as a superior herb in his classical treatise *Materia Medica*. Since then, TCM has utilized this herb for the treatment of deficiency of energy, fatigue, weakness, loss of appetite, and diarrhea.<sup>29</sup>

The genus *Astragalus* belongs to the legume family (Fabaceae) and, with over 1,700 species, it is one of the largest genera of plants. (The species of astragalus used in this formula, and in TCM, is non-toxic and should not be confused with native North American species such as locoweed (*A. mollissimus*), which produce a dangerous neurotoxin affecting cattle.) *Astragalus* grows as a native plant in China, from the far northeast province, south to Shandong. It prefers successional habitats and forest margins. It is now generally produced in cultivation for commercial purposes and harvested after one year of growth.

The key constituents of astragalus are triterpenoid saponins, flavonoids, polysaccharides, phytosterols, essential oil, and amino acids (gamma-aminobutyric acid, canavanine). The polysaccharides are the constituents most responsible for astragalus' immune-boosting powers.<sup>30</sup> The triterpenoid saponins known as Astragalosides are used for the identification and standardization of the plant.<sup>31</sup> Both polysaccharides and triterpenoid saponins act together as immuno-stimulants, which enhance and increase NK cell and phagocytotic activity.

The positive effects of astragalus have attracted ever-increasing attention in the biological world of research. Primary attention has been focused on the herb's positive effects: immuno-modulatory,<sup>32</sup> cardio-protective, anti-hyperglycemic, hepato-protective and anti-cancer.<sup>33</sup>

Astragalus also appears to have a number of immuno-modulatory functions:<sup>34</sup> anti-tumor activity on liver cells, and restoration of T-cell function, which is suppressed in cancer patients.<sup>35,36</sup> The herb demonstrates synergistic anti-cancer effects with vitamin E and selenium supplementation.<sup>37</sup>

There has been considerable research on the application of astragalus in treatment of viral diseases including hepatitis B<sup>38</sup>, parainfluenza and coxsackie B2 virus, where astragalus treatments have had a protective effect on the host cells.

The herb displays hepato-protective and antioxidant properties<sup>39</sup> and acts in a synergistic manner with Schisandra chinensis in protecting the liver from oxidative damage due to excess fat or chemical toxins.<sup>40,41</sup> Astragalus will alleviate liver injury from toxic chemicals, and decrease elevated levels of SGPT.<sup>42</sup>

### **Phosphatidylcholine, PC**

Phosphatidylcholine (PC) is usually produced from the substance lecithin, which is made up of phosphate, fatty acids and choline. The choline in PC is essential for metabolism of fatty acids and also for the transportation of fats through cell membranes. PC is also responsible for maintaining the health and structure of cell membranes.

Choline is known to aid in the breakdown of fats in the body, and phospholipids are one of the essential ingredients in bile, which is secreted by the gallbladder to aid in the digestion of fat. Choline acts as a methyl donor, fuelling the metabolic process that transports fatty acids from the liver to other tissues.

When fat and cholesterol are digested, their byproducts are transported to the liver by lipoproteins called chylomicrons. In the liver, fat and cholesterol are packaged into lipoproteins called very low-density lipoproteins (VLDL) for transport through the blood to tissues that require them. PC is a required component of VLDL particles. Without adequate PC, fat and cholesterol will accumulate in the liver.<sup>43</sup>

Increasing evidence suggests that lipid accumulation in the liver plays an important role in the pathogenesis of obesity, diabetes and cardiovascular disease. In addition, a fatty liver gives rise to more severe forms of fatty liver disease including steatohepatitis, fibrosis, and hepatic cirrhosis.<sup>44</sup> New studies in experimental animals suggest that dietary phospholipids might be of benefit in the treatment of fatty liver disease.<sup>45</sup>

Consistent results have been reported supporting the concept that phospholipids from various dietary sources (i.e., soybean, safflower, egg and fish roe), or taken as a supplement, can reduce liver lipid levels.<sup>46</sup> The primary site of action for this effect appears to be in the intestinal lumen, where dietary phospholipids are able to interfere with neutral sterol absorption.

Experimental results have also demonstrated that dietary phospholipids can stimulate bile acid and cholesterol secretion.<sup>47</sup>

PC's anti-lipo-peroxidant effects are synergistic with silymarin and Vitamin E.<sup>48,49</sup>

### **Vitamin E, d, alpha tocopherol, Natural vitamin E**

Supplementation with vitamin E helps to support the treatment of chronic diseases such as ischemic heart disease, atherosclerosis, diabetes, cataracts, Parkinson's disease, Alzheimer's disease, and impaired immune function<sup>50</sup>.

Research has demonstrated vitamin E's highly powerful antioxidant effects<sup>51</sup>: it has been shown to influence a variety of cell functions, including free-radical scavenging mechanisms that trap oxyradicals from toxins and carcinogens and prevent oxidative damage to cells<sup>52</sup> that could lead to cell death. Vitamin E's antioxidant properties have been beneficial in the treatment of biliary cirrhosis and chronic liver disease.<sup>53</sup>

Hepatic fat-storing cells play a key role in the development of fibrosis as a major source of collagen and other extracellular matrix proteins that form "scar tissue" after the liver is injured.<sup>54</sup> Both experimental and clinical studies have shown that lipid peroxidation is often associated with liver fibrosis. Vitamin E supplementation will decrease free-radical formation and protect the liver from steatosis and cirrhosis from high-fat diets.<sup>55,58,57,58</sup>

### **Alpha-lipoic acid, Lipoic acid, Thiotic acid, ALA**

Alpha-lipoic acid (ALA) is an antioxidant that is produced in the liver and is found in every cell, where it helps turn glucose into energy. Other antioxidants work only in water (such as vitamin C) or fatty tissues (such as vitamin E), but

ALA is both fat- and water-soluble. That means it can work throughout the body.

Antioxidants attack free-radicals, the waste products created when the body turns food into energy. Free radicals cause harmful chemical reactions that can damage cells in the body, making it harder for the body to fight off infections. They also damage organs and tissues. Alpha-lipoic acid is a valuable antioxidant because it also assists in recycling other antioxidants such as vitamin E and vitamin C, which in turn offer protection to organs such as the heart, kidney, and pancreas.

Antioxidants in the body are used up as they attack free radicals, but evidence suggests ALA may help regenerate antioxidants and make them active again.

ALA has heavy metal-chelating properties.<sup>59,60</sup> There is also evidence that ALA can improve the function and conduction of neurons in diabetes.<sup>61</sup> ALA can enhance insulin sensitivity by reducing oxidative stress and improving endothelial function and blood flow to the skeletal muscles, the major site of insulin resistance.

One of the problems that occur with liver fibrosis is a decrease in blood flow and circulation within the organ, which results in hepato-necrosis with hypertensive stress on the kidneys and heart. ALA improves intra-hepatic blood flow.<sup>62</sup>

ALA has hepato-protective and detoxification properties: it protects the liver from hepatic necrosis due to poisoning, such as eating poisonous mushrooms or poisoning with solvents. ALA assists in detoxification and counters the side effects from many drugs including aminoglycoside antibiotics, Adriamycin, doxorubicin and glucocorticoid steroids.<sup>63,64,65,66</sup>

### **Dietary Considerations**

Diets of liver-compromised patients should be low in saturated fats and refined carbohydrates to prevent further oxidative stress to the liver, pancreas, and gall bladder.<sup>67</sup> Dogs with liver disease should eat diets high in methionine, cysteine, taurine, selenium, Omega 3, and zinc.

A good liver diet should consist of:

Chicken, and turkey meat (vitamin B6, selenium and phosphorus)  
Eggs (methionine, B vitamins, vitamin D, selenium and iron, as well as high biologic protein)  
Oats (cysteine, selenium, vitamin B1, and manganese.)  
Yogurt (methionine, calcium, phosphorus, iodine, zinc, potassium and vitamins B2 and B12)  
Broccoli (methionine, vitamin C, biotin, B2, B6, folic acid, manganese, potassium and antioxidants)  
Beef, lamb and pork liver (taurine, high biological value protein)  
Ocean fish, salmon (taurine, Omega 3)

A diet following these guidelines, combined with a hepato-supportive supplement, can do much to support the health of a liver-compromised dog. The synergistic blend of traditional Asian medicinal herbs, phospholipids, and antioxidants in Genesis Resources' Hepato-Plus satisfies all of the parameters needed when treating liver disease in dogs.

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# VETERINARY APPLICATIONS: CANNABIS

## Veterinary Applications for Cannabis sativa L. and its Derivatives

by Robert J. Silver DVM, MS, CVA  
President, VBMA 2015-2017

### Introduction

With the flurry of media and consumer excitement regarding the many states that now have laws allowing the use of medicinal marijuana by people, and even more states that now allow the legal cultivation of hemp, I think there is an opportunity for veterinary herbalists to promote the value of herbal therapies in general. The door is now open (a crack) and it's up to us to help educate our clients on the many values of using herbs conjunctively with conventional therapies or as bona fide, evidence-based, stand-alone therapies to treat, palliate and support our veterinary patients.

Clearly, the states statutes allowing medicinal marijuana for people do not allow the prescribing or dispensing of medical marijuana by veterinarians for their animal patients. This is because marijuana, and particularly, THC ( $\Delta$ -9-tetrahydrocannabinol) is classified as a Schedule One by the Drug Enforcement Agency (DEA). Many of us are registered with the DEA for our licenses to allow us to prescribe Schedule Two controlled substances, but very few, except for one or two researchers nationally, have DEA registrations allowing for the use of Schedule One substances, and those allowances are primarily for research purposes.

This is in contrast to the fact that the Federal government holds a number of patents for medicinal applications of cannabidiol (CBD) and there is an FDA-approved synthetic form of THC, dronabinol whose trade name is Marinol, that are available as Schedule Two drugs for prescription by physicians and veterinarians.

As herbalists, we are all acutely aware of the benefit of using whole plant extracts for our veterinary patients, knowing that in most cases, using the whole plant is vastly superior to using a single molecule considered to be the "active" of the plant. The Cannabis sativa L. plant is a good example of the value of the synergy amongst plant components. It has been found in numerous studies that when you isolate a single molecule from the whole cannabis plant that it either has un-wanted side-effects, or lacks the same efficacy for the same applications as when the whole plant is being used.

### The Botany of Cannabis sativa L.

The botany and phytoconstituents of this plant that has been a part of the human story since before recorded history bear a brief discussion. Anthropological evidence supports that fact that at the beginnings of agrarian culture for "primitive" humans, over 10,000 years ago, the cannabis plant was being cultivated and harvested for its many beneficial properties.

Cannabis sativa was first described botanically by Linnaeus in 1737 and Cannabis indica was first described botanically by Lamarck in 1785. It was originally considered that these were two different species, and quite a bit of debate has ensued in the world of botanical taxonomic classification ever since. (1) Based on the genetic analysis of 157 Cannabis samples from known geographic origins, a distinct genetic difference between the two species was determined. (2)

The sativa gene pool included hemp fiber and seed landraces from Europe, Central Asia and Eastern European ruderal (roadside) accessions. The indica gene pool comprised narrow-leaflet strains from Southern Asia, Africa and South America, and wide leaflet strains from Afghanistan, Pakistan, Far Eastern fiber and seed landraces, and feral populations from Nepal and India.

Currently, as a result of extensive co-cultivation and crossbreeding practices over the years, the boundaries between the different taxonomic categories within Cannabis have become blurred.

Cannabis is a member of the Cannabaceae family. Hops (*Humulus lupulus*) belongs to this same taxonomic Family. The correct botanical nomenclature for Cannabis species is: Cannabis L. which includes both Cannabis sativa and Cannabis indica. Its correct nomenclature for the Herbal Pharmacopoeia is Cannabis Inflorescentia, and is described in the Pharmacopoeia as the "dried inflorescences and subtending leaves of pistillate Cannabis species plants." Common names for Cannabis spp. are: "Cannabis, ganja, grass, hemp, marijuana (alternatively spelled marihuana), pot, weed; sinsemilla (for unfertilized female inflorescences only). (1)

Cannabis yields healthy oils from pressing its seeds. The seeds have an ideal ratio of 1:4 omega 6:omega3 oils. The seeds themselves have been pressed into a cake that is high in vegetable protein that has been used to feed just-weaned infants. The plant stalks are high in fiber that can be made into fabric and into paper. In fact, one of the reasons why Britain was so interested in the American colonies was for the fact that Cannabis sativa L., also known as hemp grew better here than in England. Hemp is used extensively for sails and the cordage or ropes used on the tall-masted sailing ships that England depended upon so much for trade and to control their colonial interests. The tall first-growth trees found in the American forests on the Eastern coast were also ideal for the tall masts of these sailing ships.

#### **Four Types of Cannabis sativa L.**

Cannabis sativa L. is very adaptable and has been easily bred into several cultivars. Just as a St. Bernard and a Chihuahua are both Canis familiaris and have almost identical genotypes, the small difference in their genomes makes a big difference in their phenotypes. Similarly, the cultivars of Cannabis sativa L can be divided into 4 basic categories. Hemp, which is three cultivars has been bred to have either 1) **High fiber** for fabric and paper, and even building materials; 2) **High seed** production for food oil and protein; 3) High cannabidiol (CBD) content, this is a valuable medicinal constituent of the hemp plant that will be discussed a little further on in this article; and 4) Marijuana which produces high THC and CBD of a variety of differing potencies dependent upon the specific cultivar, with low fiber and low seed production. Of these four cultivars, only marijuana is considered to be illegal.

#### **Cannabis and Legal Issues.**

The Federal government passed the Farm Act of 2013 which allows each state to pass legislation allowing the cultivation and commercialization of hemp on a state by state basis. As of this writing 27 states have passed this legislation and are currently growing hemp legally. The largest producers according to current statistics are Colorado, California and Kentucky.

In comparison, only 23 states allow the use of marijuana for medicinal purposes, and because these are state and not federal statutes, the marijuana grown in one state can not be transported to another state without Federal interdiction and severe penalties.

For domestically-grown hemp this is not true, since there is a Federal law allowing for hemp cultivation, it can be transported from state to state. I know these legal issues are very important to veterinarians as we have our licenses to practice medicine at risk if we violate a Federal or State law, which is why I feel it is important to cover this information in depth to begin with.

#### **Constituents of Cannabis sativa L.**

The cannabis plant contains hundreds of compounds, many of them medicinally beneficial. This fact is what led Raphael Mechoulam, to call cannabis: "A "Pharmacological Treasure Trove". Mechoulam, in 1964, was the first researcher in the world to determine the structure of  $\Delta$ -9-tetrahydrocannabinol ( $\Delta$ -9-THC). As of this writing, it has been found that the cannabis plant contains more than 421 individual compounds. (3) These constituents include: Cannabinoids, terpenes and terpenoids, flavonoids, non-cannabinoid phenols, nitrogenous compounds and compounds commonly found in plants. (1) This diversity of constituents helps to explain the multitude of effects that have been historically, anecdotally and scientifically described for cannabis. Different parts of the cannabis plant have different constituents in them, and different strains and growing conditions can alter the phytochemical profile in a given plant.

Cannabinoids exist in the plant mainly as carboxylic acids, which are called cannabinoid acids and are all non-psychoactive. The acidic form is converted to neutral molecular analogs by light, heat and combustion. (1) The phytocannabinoid that has gotten the most attention in this plant is  $\Delta$ -9 THC, which provides its psychoactive qualities, and, subsequently, has resulted in its value, notoriety and illegality. However, the other phytocannabinoids, which are divided into multiple classes based on chemical structure, are not psychoactive, but contain the majority of the medicinal properties of this plant.

Other, equally important phytoconstituents of cannabis are the terpenes and terpenoids. These organic compounds are produced by a variety of plants. It is thought they serve a protective function for these plants. They are a significant component in plant essential oils. These molecules are responsible for the aroma of cannabis, and because they, like cannabinoids, are lipophilic, they also cross the blood-brain barrier and contribute to the medicinal benefits of cannabis.

The US FDA considers terpenes and terpenoids to be Generally Recognized as Safe (GRAS), as they are flavor and fragrance components common to human and pet diets. Cannabinoids, terpenes and terpenoids are all produced in the same glandular structure on the cannabis plant, the trichome, from the same chemical precursor, geranyl pyrophosphate. Hops (*Humulus lupulus*) is a member of the same Cannabaceae Family as cannabis, and they share many of the same terpenes and terpenoids such as  $\beta$ -myrcene,  $\beta$ -pinene, humulone, and  $\beta$ -caryophyllene. Cannabinoids are virtually odorless, emitting only a slight pitch-pine scent.

The biological effects of cannabis are due to interactions among the many various phytoconstituents of cannabinoids, terpenes and terpenoids. This phytochemical interaction has been termed the "Entourage Effect", and is believed to explain the multiple biological activities of the cannabis plant, and the differences that are seen in bioactivity of the different strains of the cannabis plant. The Entourage effect states that the potency of the whole plant extract is the sum total of the interaction of all of the plant constituents involved, and is different than the effect of any individual plant component alone.

Following the determination of the structure of the first cannabinoid  $\Delta$ -9 THC in 1964, researchers started looking for the membrane receptors that could mediate the activity of the cannabinoids. In 1988, the first cannabinoid receptor was discovered in the rat brain using a radioactive-labeled THC derivative. This receptor, termed Cannabinoid Receptor 1 (CB1), was determined to be a G-protein coupled receptor with the highest density in the rat cerebral cortex, hippocampus, hypothalamus, cerebellum, basal ganglia, brain stem, spinal cord and amygdala. This receptor is present in all vertebrate species, indicating that the endocannabinoid system has been in existence for over 500 million years.

### The Endocannabinoid System

The Endocannabinoid system (ECS) consists of 1) the cannabinoid ligand, which binds to the cannabinoid receptor, 2) the receptor itself, and 3) the enzymes that synthesize and degrade the ligands.

The endocannabinoid receptors evolved along with the endocannabinoids to constitute a naturally-occurring cellular communication system, which is the endocannabinoid system. It is sheer coincidence that the phytocannabinoids found in the cannabis plant resemble the endocannabinoids enough to activate the cannabinoid receptors.

The endocannabinoid system's major homeostatic functions were summarized by McParland as: "**Relax, Eat, Sleep, Forget and Protect.**" The Endocannabinoid system has an effect on embryological development, neural plasticity, neuroprotection, immunity and inflammation, apoptosis and carcinogenesis, pain and emotional memory, hunger, feeding and metabolism. (4)

The endogenous agonists for cannabinoid receptors are long-chain polyunsaturated fatty acids (eicosanoids) that are derivatives of arachidonic acid, and have varying degrees of selectivity for either one or both of the cannabinoid receptors. Endocannabinoids are unlike other neurotransmitters in that they are lipids versus aqueous in nature. They also are not stored, but are manufactured ad hoc from the cellular membrane.

Endocannabinoids are released as calcium levels increase inside the neuron or when G-coupled protein receptors

are activated. Endocannabinoids function as neuroprotectants by virtue of their antioxidant activity and by inhibiting calcium influx and excessive glutamate production. There are both cannabinoid receptor-dependent and cannabinoid receptor-independent actions of endocannabinoids.

Activities that are cannabinoid receptor-dependent include cognition, memory, appetite control, emesis, motor behavior, sensory, anxiety, and autonomic and neuroendocrine processes. Endocannabinoids induce hypotension and bradycardia, inhibit cell growth, affect energy metabolism and modulate immune responses, as well as being involved in fat accumulation, glucose and lipid metabolism. Endocannabinoids can also exert pro-inflammatory actions such as enhancing the cellular migration of eosinophils, neutrophils and natural killer T cells (5)

### **Potential Clinical Applications for Cannabis (6)**

Pain, Inflammation and Immunomodulation

- a. Effective for both acute and chronic pain by centrally and peripherally modulating nociception
- b. CBD affects T-cells resulting in a mild generalized immunosuppressive effect
- c. CBD has been found to have potential benefit for arthritis and psoriasis in humans

2. Epilepsy

- a. CBD attenuates seizures in experimental models of epilepsy in animals
- b. THCV inhibits CB1 receptor activity resulting some anticonvulsant activity

3. Anxiolytic

- a. CBD exerts benzodiazepam-independent activity, postulated to be via post-synaptic 5-HT<sub>1A</sub> receptors

4. Neuroprotection

- a. CBD acts as an antioxidant and as such has been suggested for Alzheimer's, Parkinson's and Huntington's diseases.

5. Anti-emesis

- a. CBD in animal models has been found to be effective for the control of vomiting that is unresponsive to 5-HT<sub>3</sub> agonists such as metoclopramide or ondansetron

6. Diabetes Mellitus

- a. CBD inhibits development of diabetes in experimental models of diabetes in mice. Reduction of pancreatic inflammation and antioxidant effects are credited with this benefit

7. Bone formation

- a. Cannabinoids stimulate the stem cells responsible for fracture healing and bone formation, as well as reducing bone loss by controlling bone reabsorption

8. Cancer

- a. Many of the cannabinoids have anti-apoptotic effects and reduce neoplastic proliferation in selected tumor cell lines
- b. Anecdotal reports from both human and veterinary patients indicate the potential for complete remission and possibly even cure of a number of different neoplastic diseases

9. Anti-microbial

- a. Both CBC and CBG have potent anti-bacterial effects including against MERSA (MIC of 0.5-2 mcg/ml)

### **Evidence-Based Veterinary Applications of Hemp**

Recently, a study was published in the Spring 2016 issue of the Journal of the American Holistic Veterinary Medical Association reporting the results of a survey of pet owners' uses of a commercially available hemp product. (7) The results were very interesting. Dog owners reported that hemp was moderately or very helpful for a number of applications. The best effect of hemp was seen for relief from pain (64.3%), followed by helping their pet sleep at night (50.5%) and relief from anxiety (49.3%). The most frequently reported side-effects were sedation (22.0%) and over-active appetite (15.9%).

Cat owners reported that their feline companions were benefited with relief from pain (66.0%), reduction of inflammation (56.3%) and helping them sleep at night (44.0%) which is a benefit my own three cats have demonstrated in our household. The side-effects that were most common were sedation (19.2%) and an over-active appetite (16.0%)

Many of the pet owners who responded to the survey felt that the hemp worked better than other treatments, but

there were 7% who did not feel they worked as well. (Kogan LR, Hellyer PW, et al. Consumers Perceptions of Hemp Products for Animals. JAHVMA Spring 2016 pp40-48)

The dosages that were commonly used in these commercial hemp products, based on their content of cannabidiol (CBD) was usually fairly low at about 0.1 mg/kg BID, and ranged for some individuals to as high as 0.5 mg/kg BID. These dosages were not recommended by the commercial product in the survey, but this author analyzed the content of this hemp product and was able to derive these numbers which have held up clinically. (8)

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# HERBAL MONOGRAPH: GARLIC



Photo courtesy [MediPlusPets](#).

**COMMON NAME:** Garlic

**LATIN NAME:** *Allium sativum*

**OTHER NAMES:** Allium, Dasuan, Dawang, Lasun, Stinking Rose

<b>Common Name: Garlic</b>	<b><i>Allium sativum</i></b> , Ail, Allium, Dasuan, Dawang, Lasun, Pa-se-waa, Rasum; Stinking Rose
<b>Family</b>	Liliaceae
<b>Part Used</b>	Bulb
<b>Active constituents</b>	Alliin; allinase, an enzyme; allicin; thiosulfinates, many sulfur containing compounds; amino acids; glycosides; vitamins; mineral and trace elements, Calcium, selenium, and germanium, and fructans which support beneficial bacteria within the digestive tract and can help to eliminate pathogenic gut bacteria and yeast.
<b>Actions</b>	Antiplatelet, anticholesterolemic, antiseptic, mucolytic, vasodilator: <b>TCM Actions:</b> 1. Stimulates digestion; resolves mucus damp, removes accumulations and relieves abdominal fullness, promotes bile flow; reduces liver congestion and relieves jaundice.- treats Spleen damp- interesting that garlic kills bacteria by changing the environment and has an ability to destroy foreign pathogens while supporting the positive flora of the intestine; relieves food poisoning. 2. Reduces infection, stimulates immunity and clears toxins, clears parasites and antidotes poison; reduces Swelling, relieves toxicity 3. Tonifies the yang, stimulates circulation and dispels cold; balances blood pressure and blood sugar- treats Yang deficiency. and coronary blood deficiency 4. Promotes sweating, dispels wind/Damp/ Cold, resolves phlegm, and opens the chest. - treats wind/damp/cold/ invasions 5. Promotes urination and detoxification. 6. Kills parasites 7. used to prevent influenza
<b>Indications</b>	Sores, swellings, toxic swellings, carbuncles, tuberculosis, whooping cough, dysentery, diarrhea, influenza, ; parasites, hookworms and roundworms; prevention of hookworm; fish and crab food poisoning; Specific Indications: 1. Incipient head cold; Burning and itching in the throat 2. Phlegm accumulation- ear infections 3. Respiratory conditions with impacted mucus 4. Digestive stagnation, parasites, worms, candida, phlegm, gas; Hyperlipidemia, atherosclerosis, hypertension, cough and respiratory infection, poor circulation; Adjunct treatment for cancer, poultry husbandry, carp husbandry, thrombosis, cough

<b>Cautions</b>	Can cause digestive upset in those with a weak liver; individuals with adrenaline excess tendencies might be intolerant to garlic. Not to be given when signs of heat and nervous irritations are seen; caution with any evidence of gastric irritation; monitor RBS and WBC parameters with long term use; topical application of Da Suan is sometimes associated with redness, burning sensation, and blistering of the skin. Not recommended as a rectal enema is not recommended for pregnant women.
<b>Contraindications</b>	Contraindicated in cases of yin-deficient heat; and in cases of excess heat affecting the eyes, throat, mouth, tongue and gums. Dog with high erythrocyte levels of reduced glutathione and potassium, like Akitas and Shibas, are susceptible to the hemolytic effects of oxidants such as N-propyl disulphide and may be at greater risk of allium toxicity. Cats are more susceptible to the effects of garlic; their hemoglobin contains more sites for oxidation.
<b>Herb Drug Interactions</b>	May interact with antiplatelet and anticoagulant drugs; it can reduce blood glucose, so if on insulin, watch for potential decrease insulin needs.
<b>Dosage</b>	<b>Human:</b> Tincture 1:2 2-4mL TID; garlic tablets 600-800 mg per day. Garlic oil - 10 mg per day; 1 moderate size fresh clove; <b>Small Animal:</b> 0.4ml 1:2 tincture per 10kg daily, divided. Garlic powder, mixed with food. Cats and small dogs 50-100mg garlic , small dogs 50-100mg , medium dogs 100-300mg, large dogs 300-600 mg and giant dogs 600-900mg; <b>Horses and Cattle:</b> 60-120 g; <b>Llamas, alpacas, Goats, and Pigs:</b> 5-30 g; <b>Dogs:</b> 2-3 g; <b>cats and rabbits:</b> 0,5-1 g; <b>Birds:</b> 0.1-1 g

**Notes:** Indigenous to Asia but commercially cultivated in most countries

**Energetics:** pungent, acrid; sweet, slightly salty, warm, moist, oily

**Meridians:** Spleen, lung, heat and liver

**Holmes:** Most beneficial in cold and dry conditions not hot conditions. As it is warming, it thins cloying phlegm and expels them. Salmon said "when the bowels are afflicted with a gross, tough, and cold matter. It is an admirable thing; for it exceedingly heats and warms; discusses wind profoundly and withal prevents the breeding and increase of the cold flegmatick humor."

**Culpeper:** "if being a remedy for all diseases and hurts..it provoketh urine and women's courses, helpeth the biting of mad dogs, and other venomous creatures; killeth worms in children, cutteth and voideth tough phlegm, purgeth the head, helpeth lethargy, is a good preservative against, and a remedy for any plague, sore, or foul ulcer, taketh away spots and blemishes in the skin, easeth pains in the ears,; and for all those disease the onion are as effectual. But the Garlick hath a special quality to discuss inconveniences coming by corrupt agues and mineral vapours, or by drinking corrupt and stinking waters; as also by taking wolf bane, henbane, hemlock or other poisonous and dangerous herbs. It is held good in hydropick diseases, the jaundice, falling sickness, cramps a, convulsions, the piles, or hemorrhoid, or other cold diseases. **NOTE THIS** Its heat is very vehement and all vehement hot things send up but ill-favoured vapours to the brain. In choleric men it will add fuel to the fire. In men oppressed by melancholy, it will attenuate the humors and send up strong fancies and as many strange visions to the head therefore let it be taken inwardly with great moderation and outwardly you may make more bold with it."

**Cook:** "Garlic excite the mucous secretions, facilitating digestion in sluggish stomachs, improving chronic catarrh, and promoting expectoration. Considerable quantities or a long-continued application outwardly will excite the circulation. By continued action on the nervous system, it exhilarates it in sudden depressions, and often proves antispasmodic- as in "worm fits" of children and spasmodic cough..... Applied outwardly, it is a strong counter-irritant, and is often used as a fomentation on the feet to relieve the brain in cerebral excitement. Poultice applied over the pubes has been said to relieve paralysis of the bladder; A drop or two of the juice in the ear three times a day has been commended in atonic deafness. It is NOT to be used inwardly during the existence of inflammation or acute irritation."

**Scudder:** *Allium sativum* is applied to the surface as a topical irritant, rubefacient and revulsive. It is mostly applied to the feet in diseases of the head or thorax. It is sometimes applied as an antispasmodic embrocation in infantile convulsions, its juice being combined with olive oil or some other agent, or it may be simmered in dilute alcohol. It is also employed as a resolvent to indolent tumors, and the juice sometimes dropped into the ear in cases of earache.

**De Bairacli Levy:** The modern farmer apt to look upon this supreme medicinal plant as a 'troublesome weed', because cattle, recognizing its beneficial and medicinal properties, have a craving for it, and are apt to gorge themselves and affect the flavour of their milk. The plant is rich in a volatile oil and sulphur and is worshipped by the gypsies who uphold that it possesses magic properties on account of it being able to cure the majority of ailments which afflict man and the animals he has domesticated. Their secret name for this herb is moly. It is highly antiseptic; acclaimed as an internal purifier of the greatest importance, contain powerful anti-toxic elements essential for good health; credited with great anti-plague powers; gorillas often plant areas of garlic where they have their colonies; it has remarkable penetrative disinfectant and mucus-expellant powers, it is a valuable basic remedy for the treatment of all ailments in which the cleansing of the blood-stream and expulsion of mucus accumulations are required. It is supreme in the cure of all infectious ailments of the blood-stream, lung and digestive areas. It is also of especial use as a febrifuge and vermifuge; it is a fertility herb for both sexes; externally, for the disinfecting and healing of all types of sores and wounds, also parasitical infections. Uses: treatment of all fevers, pulmonary, gastric and skin complaints, rheumatism, all worms, also liver-fluke, mange, ringworm, ticks, and lice. It is the most famed cancer curative herb. Dose: a handful of leaves and several whole roots for sheep and goats, and double the dose for horses and cattle. A Spanish gypsy remedy of renown, for treatment of inflamed joints and rheumatism, is made from a dozen garlic cloves, well minced, put into a tin large enough to hold half a pint of live oil; tie a thick piece of cloth over the top of the tin. Then place the tin in a pan of hot water and keep the water simmering for several hours. Allow to stand and steep; do not strain; reheat before use and rub affected parts. A few drops into the ears is a good remedy for ear-ache. Crushed spice cloves added to the oil further improves this remedy. Garlic also can be used for coccidiosis in poultry, for coughing and bronchitis in dogs; for breast tumors in dogs; for distemper, for jaundice, for rheumatism, and for thyroid complaints and worms.

**Research:** antineoplastic action against nose and throat cancer, leukemia, stomach cancer, liver cancer with ascites, and lymphatic cancer; reduction of blood pressure, blood cholesterol levels, and atherosclerosis; anti-viral effects against cytomegalovirus and antibiotic effects against *Candida*; mycobacterium tuberculosis, *Bacillus dysenteriae*, *Salmonella typhi*, *Vibrio cholerae*, and *Bacillus paratyphosus*; protective against liver damage; decreases blood glucose; inhibits platelet aggregation, immune enhancement, reduces systolic and diastolic blood pressure and has antithrombotic and antioxidant activities. Garlic extract has an antiarrhythmic effect on ventricular and supraventricular arrhythmias. It suppresses tumor proliferation; inhibited growth of canine mammary tumor cells; reduces tumor volume and mortality; successfully reduced parasites in carp and has been used as a mosquito larvicide; successful in the treatment against several flagellated poultry parasites; effective against Northern Fowl Mites; wide range of antibacterial and antifungal activities; reduced newborn pig mortality.

**In TCM,** Da Suan it is classified in the Substances for topical application category.

Classified as acrid and warm used to

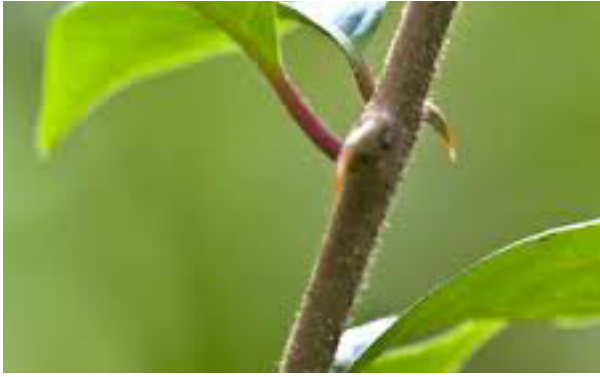
- 1) Reduce swelling and relieve toxicity, to
- 2) Kill parasites and to
- 3) treat food poisoning.

Chen notes that today used for cardiovascular system and has many anti-cancer properties. Excessive use internally is associated with eye deterioration.

**Chen:** Breath odor from ingesting Da Suan may be neutralized by chewing a small portion of tea leaves or a small slice of Dang Gui.

**Xie:** Can be used as an enema for dysenteric diarrhea, has antiparasitic, antimicrobial and antifungal effects.

# HERBAL MONOGRAPH: CAT'S CLAW



*Cat's Claw*

**COMMON NAME:** Cat's Claw

**LATIN NAME:** *Uncaria tomentosa*

**OTHER NAMES:** Una de gato, life-giving vine of Peru, hawk's claw

<b>Common Name: Cat's Claw</b>	<i>Uncaria tomentosa</i> ; Una de gato, life-giving vine of Peru, hawk's claw; <i>Uncaria guianensis</i> is another South American Species but with fewer active constituents.
<b>Family</b>	Rubiaceae
<b>Part Used</b>	Inner Bark of the stem or root; for sustainably purchase the stem bark
<b>Active constituents</b>	<p>ndole alkaloids: Isopteropodine, pteropodine, rhynchophylline, mytraphylline, speciphylline; Indole alkaloidal glucosides: flavonoids;;Hirsutine; Quinovic acid glycosides; Tannins; Polyphenols; Catechins; Beta sitosterol;</p> <p>Plant has two chemotypes; one that is high in pentacyclic alkaloids and other is high in tetracyclic alkaloids. These have opposing effects in vitro; pentacyclic have immune-enhancing and anti-inflammatory effects while the tetracyclic oxindole alkaloids have CNS activity and counteracts the immune stimulant activity of the pentacyclic alkaloids</p>
<b>Actions</b>	anti-inflammatory, astringent, antirheumatic, immunomodulatory
<b>Indications</b>	<p>asthma, gonorrhea, diverticulitis, Crohn's disease, peptic ulcers, colitis, gastritis, parasites, leaky gut, parasites, hemorrhoids, HIV, cancer, herpes, chronic fatigue, diabetes, arthritis, cognitive disorders, circulatory problems, as an immunostimulant and as an adaptogen.</p> <p>Osteoarthritis, chronic debility and immunosuppression; viral diseases including Parvo and FIV; mammary cancer, demodectic mange</p>
<b>Cautions</b>	If overdosed, diarrhea, possible bleeding; possible of hypotension
<b>Contraindications</b>	Pregnancy or possibly in the very young
<b>Herb Drug Interactions</b>	May alter the metabolism of drugs which are substrates of CYP3A4 enzymes; may add to the effect of antihypertensive drugs. The theoretical immunostimulant effect of cat's claw may be issue if on immunosuppression.
<b>Dosage (use animal doses where available, otherwise human doses can be included here but specify) (Wynn, Fougere)</b>	<p><b>Human:</b> Capsules containing 500-600mg each: 2-9 capsules divided daily; Decoction of 1 tsp pulverized root in 1 quart of water for 45 minutes: ¼-1 tsp on an empty stomach; Tincture :0.5 – 2 ml up to 5 times daily</p> <p><b>Small Animal:</b> Dried Herb: 2-10 g; Decoction: ½ cup per 10 kg divided daily; Tincture 1:2-1:3: 1.0-2.5 ml per 10 kg divided daily</p>

**Notes:** found in Tropical South and Central America

**Energetics:** slightly bitter

**Traditional use:** Ethnobotanical information primarily from the Ashaninka tribe of Peru. Used as a South American tonic taken regularly to prevent illness; and used for cancer, rheumatism, and urinary tract problems; an anti-inflam-

matory agent, contraceptive and for stomach ulcers.

**Research:** Most research is focused on the alkaloids. The oxindole alkaloids have immunostimulating properties in vitro, increasing phagocytotic activity and synthesis of WBCs and enhancing T-helper cell function. Rhynchophylline is anti-hypertensive; it relaxes the endothelial cells of blood vessels, dilates peripheral blood vessels, inhibits sympathetic nervous system activities, and lowers the heart rate and blood cholesterol. Mytraphylline has diuretic properties, and hirsutine inhibits urinary bladder contractions and possesses local anesthetic. The anti-inflammatory activity is caused by the inhibition of TNF-alpha production; water extracts have been shown to enhance DNA repair after chemical-induced damage; shown to enhance phagocytosis, display immunomodulatory properties, alleviate inflammation, and possess anti-viral activity; demonstrated anticancer effects; antimutagenic activity; relief in clinical studies of osteoarthritis and rheumatoid arthritis; clinical improvements with animals with mammary cancer, parvo virus; pain relief in cases of osterarthritis, hip dysplasia, and disk disease; and hair coat improvement; improvement of AIDs cases, and FIV.



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*Image: Cat's Claw, Uncaria tomentosa*



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