

Spring 2024

MEDICINAL ROOTS 相慧 MAGAZINE

Ancient Wisdom - Modern Healthcare



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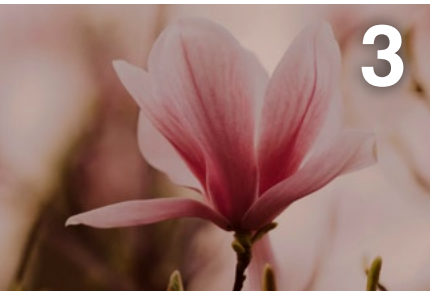
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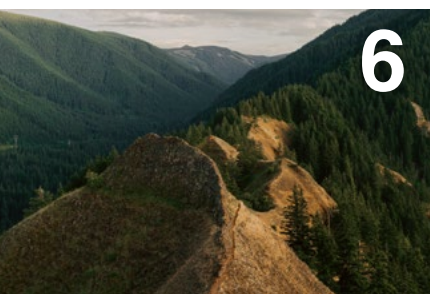
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BC TCMPA Proposed Regulation Amendment *Update*

by Suzanne Williams,
Executive Director, ATCMA

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We at the Acupuncture and Traditional Chinese Medicine Association of BC (ATCMA) have been so appreciative of the action that practitioners from B.C. and our colleagues in other jurisdictions have taken to voice their concerns about the proposed regulation amendments in our province. Our work is not yet done!

By the time you read this, there will still be a small window of opportunity to show your support for our profession and make sure that we do not lose our unique scope of practice. No matter where you are in the world, we need you to write to the Ministry of Health Professional Regulation and Oversight Branch (Pro Reg) by the end of April to ensure that your feedback is seen in time to impact the next iteration of our regulation.

WHAT IS HAPPENING?

On January 23, 2024, the Ministry of Health Professional Regulation and Oversight Branch published a proposed amendment to the TCM Practitioners and Acupuncturists Regulation. The proposed update *removed*:

- Chinese herbal medicine as a restricted act
- pinyin from the definitions for techniques used by registrants
- the scope of practice definitions by registrant title, and;
- neglected to incorporate almost all the regulation updates proposed by the CTCMA in 2015/17

Thankfully, Pro Reg has since realized that it missed the mark in the wording and content of the proposed regulation update.

Continued...

WHY DOES THIS MATTER?

- The Ministry of Health (MOH) did not consult BC's regulator (CTCMA) before making these changes, even though it had a proposal from them detailing all the amendments needed to bring our regulation up to date, align with the HPA and, modernize our scope to reflect current practice. Our profession has been waiting almost ten years for our scope to be updated, and we at the ATCMA, see the regulation amendment as the perfect opportunity to implement these changes.
- By the removal of Chinese herbal medicine as a restricted act, the use of traditional language in the form of pinyin and the lack of clarity regarding scope of practice definitions by title, not only dilutes our regulation, but also poses a risk to public safety.
 - If Chinese herbal medicine is not retained as a restricted act specifically for Registered Herbalists, TCM Practitioners and Doctors of TCM, anyone could prescribe and administer Chinese herbal medicine regardless of their training or credentialing. ***This is a public safety risk.***
 - Removing scope of practice boundaries by title (R.Ac, R.TCM.H, R.TCM.P, Dr.TCM) leaves room for the untrained, un-registered practice of acupuncture or Chinese herbal medicine within the profession. ***This is a public safety risk.***

- Using only English terminology for TCM techniques is confusing for practitioners, who learn the Mandarin Chinese terminology in school, and confusing for the public who would not be able to find information on things like “shadowboxing” instead of Tai Ji Quan. ***This is a public safety risk.*** Additionally, by removing pinyin terminology, the cultural roots and context of our medicine are lost. Although we do not believe that this was the intended outcome by MOH Pro when drafting these amendments, if not rectified, would be deeply impactful for our profession.

WHAT CAN YOU DO?

Take Action Now!

1. Write a personal letter to the MOH Professional Regulation and Oversight Branch [PROREGADMIN@gov.bc.ca] to support:
 - The retention of Chinese herbs as a restricted activity to ensure the protection of public health and safety and recognize TCM's unique role in the healthcare landscape.
 - The continuation of Chinese medicine terminology in pinyin to align with standard nomenclature that is taught in TCM school and used by TCM professionals worldwide.

- The modernization of the TCMPA scope of practice to include the techniques and modalities proposed by the CTCMA in 2015/117. You can read the full proposal here: <https://www.ctcma.bc.ca/wp-content/uploads/2023/03/media/1409/2017-05-03-ctcma-regulation-amendment-proposal.pdf>

2. Request a meeting with your MLA to discuss this issue.
3. Ask your fellow practitioners, your patients, friends and family to write to PROREGADMIN@gov.bc.ca.
4. Help us help you!

If you are registered to practice TCM or Acupuncture in BC, join the ATCMA - the more members we have, the more the government will listen to our united message.

*- Suzanne Williams,
Executive Director ATCMA*



PHOTO: Timothy Eberly for Unsplash.com



ABOUT THE AUTHOR

Suzanne Williams,
R.TCM.P, BA, APMCP, MBA

Suzanne is the Executive Director of the BC Association of TCM and Acupuncture Practitioners (ATCMA). She is an active practising Acupuncturist and TCM Practitioner in Vancouver, B.C. Suzanne graduated from TCICTCM and was in the first Cohort of Balance System Acupuncture students at Langara College. Suzanne shares her love of Balance System Acupuncture with practitioners as a certified Instructor with the Tan Academy of Balance. Having studied and worked in Taiwan, Hong Kong, and mainland China for over 12 years, Suzanne speaks and reads Mandarin Chinese. She draws on her career in business market research and consulting in China and Canada to advocate for the TCM and Acupuncture profession in British Columbia.

atcma.org



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Treating Addictions and Complex Pain with Bio-electrode Therapy

An Acupuncture Point Stimulus Method for Relieving Human Suffering

PHOTO: Spencer Backman for Unsplash.com

Les Moncrieff, R.Ac.

In a world awash in potent opioids sparking an international crisis, the urgency to explore safe alternative therapies has never been more evident.

Bio-electrode Therapy emerges as a novel adjunctive treatment method for relieving acute opioid withdrawal symptoms and various types of complex pain that are often the underlying cause of opioid dependence. By integrating the science

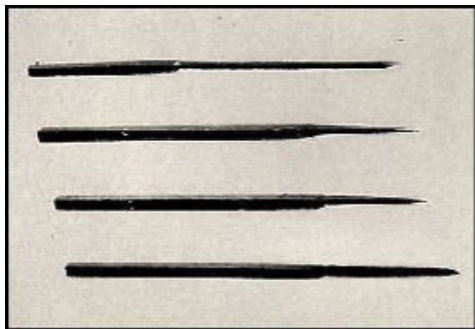
of developmental bioelectricity with traditional Chinese medicine's theory of acupuncture meridians and microsystems; rapid relief from pain and opioid withdrawal is routinely achieved in clinical settings. Tiny gold and silver-plated electrodes are secured to specific acupuncture points using established Chinese medicine principles and protocols. This procedure creates a microcurrent and electrical field between the electrodes, strongly influencing the endogenous current (Qi) in the meridian and connecting meridians. No external power source or electrical devices are required. Endogenous DC electric fields are crucial for development, regeneration, and wound healing. Disruptions in the normal ion-charge in the meridians and circulation

of blood manifest as pain and disease development. With the application of these simple electrodes (gold acting as cathode and silver as anode), injured or diseased cells, tissues and organ systems are stimulated by the electrical fields, causing a restoration of intracellular fluid levels, replenishment of electrolyte levels, pH balance, removal of toxins, and re-establishment of homeostasis.

Electrodes are secured to the Jing-Well points at the beginning and ends of the meridians found on the hands and opposite side feet, as well as on the reflex points of popular acupuncture microsystems. According to acupuncture meridian theory, maintaining a unidirectional flow of Qi (polarity) is crucial for health, and disruptions in this flow can lead to various health problems. The ancient practice of strategically placing gold and silver conductive metal needles, (electrodes) on the meridians, designating one as an anode and the other as a cathode, aligns with the principles of bioelectricity and bioelectric potential.

FIGURE 1

Gold and silver needles from Liu Sheng's tomb, from the 2nd century BCE



Bioelectric potential refers to the electrical potential or voltage present in living cells and tissues, arising from the movement of charged particles, such as ions, across cell membranes. This potential is essential for various physiological processes, including nerve impulses, muscle contractions, and cell communication. The treatment method of

using two different metals for electrodes creates a unidirectional microcurrent and electrical fields through the meridians (electrical grid) of the electrolyte-rich body. In the acupuncture microsystems, the entire body is mapped onto specific areas or points, such as on the ears, hands, feet, scalp, or other parts of the body. These points correspond to specific organs, systems, or functions within the body.

By stimulating these points, either with acupuncture needles, acu-pressure, lasers or electrodes, practitioners promote healing, alleviate pain, and restore balance to the body's energy flow.

Each microsystem reflects the whole body, allowing for targeted treatment of various ailments by stimulating specific points or regions. Examples of microsystems include auricular (ear) acupuncture, Korean hand therapy, scalp acupuncture, among others.

In the 1960s, Dr. Woo Tai Yoo successfully incorporated this acupuncture point stimulus method with copper and aluminum metal pellets in his widely embraced microsystem called Korean hand therapy. This system has gained popularity among acupuncturists internationally due to its efficacy and ease of use. For decades, in the microsystem known as auricular therapy, acupuncturists have successfully used tiny gold and silver electroplated metal spheres to stimulate ear acupuncture points. Additionally, the Tung style acupuncture system is unique in that microsystems are found on every long bone and appendage of the body (fingers, hands, arms, feet, legs, and even the head). Only silver electrodes are necessary for stimulating the Tung points of the hands and feet.

As mentioned previously, no external electrical devices are required. The heart's SA node generates the largest electrical impulse and electromagnetic field ranging from about 0.9 to 1 volt, which is fundamental to maintaining health and promoting healing within the body. The heart's electromagnetic field interacts with the heart meridian and other meridians and collaterals, contributing to the flow of Qi or energy throughout the body. This electromagnetic influence establishes a circuit, wherein ions, facilitated by the body's electrolytic medium, carry electric charges along the meridians, which are pathways of least resistance.

Understanding the mechanisms by which applied electrical fields direct the development and repair of cells and tissues enables present and future therapeutic applications of the electrodes to be optimized. Acupuncture points on the body are known to have higher electrical conductivity than surrounding skin tissue. Dr. Robert O. Becker, author of *The Body Electric: Electromagnetism and the Foundation of Life* (1998), has noted that the human body is a battery system. Dr. Becker, MD (1923–2008), the father of electrotherapy and electrochemically induced cellular regeneration, was a pioneer in chronic wound care and tissue regeneration. He postulated that we are electromagnetic beings—essentially vessels of electrolytic blood and tissue. Dr. Becker stated:

“To have a current flow you need a circuit; The current has to be made at one spot, pass through a conductor, and eventually get back to the generator.”



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The *Nei Jing* (Classic Chinese text, 475-221 BCE) provides a similar explanation:

“The twelve meridians control human life, yet they are the place where disease can live. If disease starts in the meridians, the physician can use the meridians to treat the root cause of disease.”

With the strategic application of electrodes using meridians, an electrical field can be directed to target injured or diseased organs and tissues. When injured or diseased cells have been electrically stimulated in this way, the permeability of the cell membranes is improved. The result is a balancing of positive and negative ions (sodium, potassium, calcium, magnesium, etc.), pH balance, the restoration of

intracellular fluid levels, replenishment of electrolyte levels, removal of toxins, and re-establishment of homeostasis. The electrical field stimulus also significantly increases the production of ATP, which provides the fuel for the transmission of metabolites and metabolic waste across the cell membrane.

There are a variety of methods for stimulating acupuncture points. These include acupuncture needles, moxibustion, acupressure, lasers, various types of electrostimulation devices, and even intention. While effective, these methods are not without problems as they are often painful, cumbersome, expensive, and require extensive skill, of training, and a license to administer. By contrast, Bio-electrode Therapy is a technique that can treat a broad range of pain and diseases, and is easily mastered by health care professionals and, with supervision, by the pain sufferers themselves. It is an ideal treatment for those with a needle phobia and for children. It is a safe, painless, non-invasive treatment method that provides rapid relief from complex pain.



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It should be further noted that the particular metal pairs being used as electrodes (silver-gold, or silver- copper) are biocompatible and have potent antimicrobial properties. These metals can be used to effectively treat pathogenic bacteria, viruses, and fungal infections. For example, silver ions can be directed to target infected tissues such as tooth decay or an infected root canal via the meridians. Pain symptoms are relieved almost immediately, and reduction of inflammation and swelling soon follows.

As an adjunctive solution to the opioid crisis, BeT appears to work well to relieve the addiction related withdrawal symptoms of what Chinese medicine would call a “yin deficiency condition.” Fear of opioid withdrawal pain is often the drug dependent person's largest barrier to seeking treatment.

If a drug dependent person has the option to detoxify without the typical withdrawal agony, then recovery becomes a much more attractive option.

When that person has the opportunity to detoxify without becoming dependent on even more addictive pharmaceuticals opioids like the long-acting Methadone, Sublocade or Suboxone, then true healing, treatment, and freedom becomes possible. All opioids, whether illicit or prescribed, have many serious side effects. Withdrawal management and detoxification are extremely difficult, and unrealistic without effective options for treating pain. Pain and addiction are as inseparable as are the two sides of a coin. A large percentage of people today started down the road to opioid dependency using highly addictive prescription pain medications. Individuals are able to carry on with their recovery when they are physically and emotionally more stable, without the pain that originally led them to seek an addictive medication.

NOTE: According to The British Columbia Center on Substance Use, they strongly advise against relying solely on detoxification and withdrawal management as a standalone treatment for opioid dependency. This approach poses significant risks, as individuals who relapse post-withdrawal often experience a rapid decline in opioid tolerance, heightening the likelihood of overdose. Instead, a comprehensive strategy incorporating medical, social, and ideally familial support is deemed essential.

As an adjunctive medical intervention for recovery, Long-Acting Injectable Naltrexone medication presents a promising option for withdrawal management by effectively reducing the risk of relapse and overdose during recovery. Monthly injections enhance treatment adherence and efficacy, offering a valuable tool in combating opioid dependency.

JAPANESE SAKAMURA MAGRAIN ION ELECTRODES ARE CONVENIENT AND EASILY SECURED.

FIGURE 2.

Sakamura Magrain Ion Pellets



BENEFITS OF BIO-ELECTRODE THERAPY

- Complex pain (often the original cause of opioid dependence) can be effectively treated.
- By relieving the excruciating anguish and prolonged pain of opioid detoxification, we eliminate the greatest fear of all opioid dependent individuals seeking treatment and abstinence.
- BeT protocols are simple, painless, non-invasive, non-toxic, and have no known side effects.
- Treatment response with BeT is rapid, usually relieving pain and discomfort within minutes.
- The BeT protocol is easy to learn and administer by any health care professional.
- With adequate supervision, patients can often self-administer this therapy (home detox).
- There can be a reduction (taper) from opioid-based medications, making freedom from opioid dependency a much more viable option than is currently the case.
- Extended-Release Injectable Naltrexone can be used to prevent relapse and overdose.

FIVE COMMON MEDICAL CONDITIONS RELIEVED USING SIMPLE ELECTRODES

FIGURE 3.

Opioid Withdrawal Management Protocol

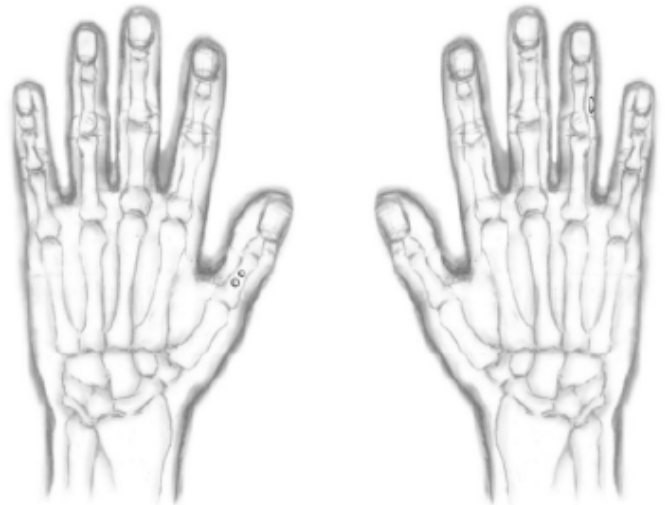


All-meridians Method with Gold and Silver Electrodes

NOTE: Clean the skin with an alcohol swab before applying the electrodes.

FIGURE 4.

Gynecological Protocol



*(Menstrual Cramps, Dysmenorrhea, PID, Endometriosis, Infertility)
Tung Method with Silver Electrodes*

The Tung-style acupuncture protocols are very effective for all gynecological problems. They are easy to learn and apply and can be taught to the pain



sufferer for self-treatment. These points should be used for all gynecological disorders; Endometriosis, PID, dysmenorrhea, irregular menstruation and cramps, infertility, menopause, and even difficult labor.

ALTERNATE the application of this silver electrode point combination, changing the electrodes on the thumb and the ring finger from the left hand to the right and vice versa with each treatment.

NOTE: Clean the skin with an alcohol swab before applying the electrodes.

FIGURE 5.
Headache Protocol



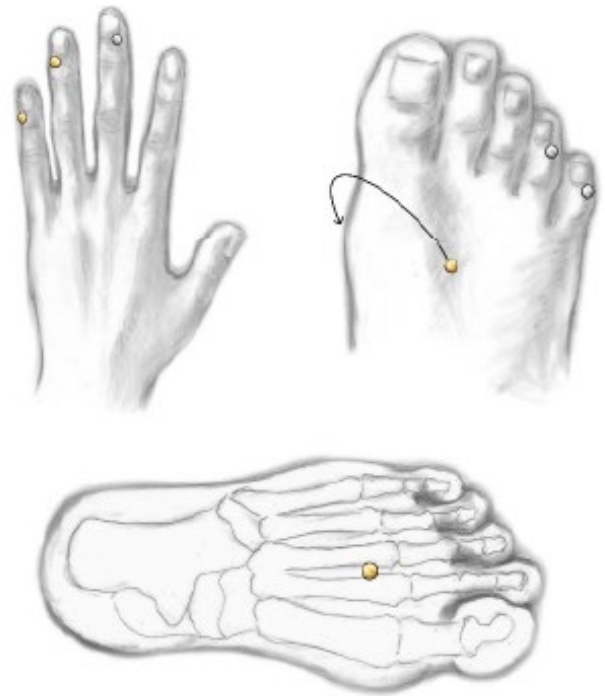
Tung Method with Silver Electrodes

This illustration shows the protocol for women. Treat left hand for men.

Apply the silver electrodes on the acupuncture points of the fingers (ie, on the sides of the finger at the top of the joint crease when the fingers are slightly flexed).

NOTE: Clean the skin with an alcohol swab before applying the electrodes.

FIG. 6
Back, Sciatica, and Hip Pain Protocol



Opposite Sides Foot/Hand Method with Gold and Silver Electrodes

Back and hip pain are common problems. If the pain experienced is only on one side, apply the electrodes to the affected side Jing-Well points of the foot and opposite side of the hand. If the pain is non-sided, treat the right foot for women and the left foot for men. Depending on the severity of the condition, it may take one treatment or many.

NOTE: Clean the skin with an alcohol swab before applying the electrodes.



PHOTO: Delphine Ducaruge for Unsplash.com

FIG. 7

Low Back Pain / Lumbago Protocol



Tung Method with Silver Electrodes

Treat healthy side hand. For non-sided pain, treat right hand for women, left for men.

NOTE: Clean the skin with an alcohol swab before applying the electrodes.

THE ELECTRODE MICROCURRENT STIMULUS REGULATES THE HEALING PROCESS

Bioelectricity researchers have proven that the process of healing, growth, and regeneration in all living organisms like our bodies is mediated by the organism's own electrical microcurrent and electromagnetic fields. This endogenous microcurrent is measured in the trillionths and billionths of an ampere range. As noted above, injury and disease affect the electrical potential or voltage of cells in the damaged tissues, creating an area of much higher electrical resistance than that of the surrounding tissue. This decrease in the microcurrent through the injured or diseased tissue affects the cellular capacitance, resulting in an impairment in the function of the cells. The imbalance of ions or electrolytes at the cellular-tissue level is the basis of this dysfunction, manifesting as pain, inflammation, swelling, pH imbalance, etc. The stimulus of the electromagnetic field by the electrodes affects the permeability of the cell membranes, opening and regulating ion channels (voltage-gated channels). This rapidly restores the natural electrical charge to every injured cell, recharging them similarly to a weak battery. The resistance of the injured tissue is eliminated, allowing microcurrents to pass through and triggering the body's own natural biochemical healing processes.



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CONCLUSION

The fusion of Chinese medicine meridian theory and microsystems with developmental bioelectricity has opened up promising avenues in therapeutic interventions.

Bio-electrode Therapy represents an innovative approach that bridges the gap between traditional Chinese medicine principles and contemporary scientific understanding.

By strategically placing metal electrodes based on established principles and protocols derived from both disciplines, this therapy harnesses galvanic potential to generate controlled microcurrents and electrical fields.

Clinical research is demonstrating the efficacy of Bio-electrode Therapy in modulating bioelectric signals and influencing physiological processes. For decades, clinical practice has shown that precise placement of electrodes in alignment with meridian pathways and microsystem reflex points can effectively enhance the body's natural electrical fields. This targeted approach has been found to promote tissue regeneration, alleviate pain, and restore homeostasis in many pathological conditions.

Moreover, the painless, non-invasive nature of Bio-electrode Therapy makes it an attractive option for healthcare professionals seeking integrative modalities for treating complex medical conditions such as addictions. Further research in this field holds the potential to uncover novel insights into the mechanisms of action underlying the therapeutic effects of bioelectricity, paving the way for innovative approaches in holistic healthcare.

- Les Moncrieff



ABOUT THE AUTHOR

Les Moncrieff

R.Ac.

Les is a health care professional employed by the Vancouver Coastal Health Authority Addiction Services for the past 30 years. His primary focus has been addiction treatment and pain management. He has spent several years living and studying in Asia. Les has found great success and satisfaction integrating a wide variety of complementary and alternative therapies as an adjunct to mainstream medicine practice. Empowering clients to heal themselves using the skills and understanding of energy medicine, consciousness and the principles of quantum physics is fundamental to his therapy practice.

www.bio-electrodetherapy.com



PHOTO: Mink Mingle for Unsplash.com

Letter to MRM Readers

From Golden Flower Chinese Herbs



Dear Canadian Practitioners using Golden Flower Chinese Herbs

The last year plus has been very difficult for our company and our customers. The pandemic years were a rough roller coaster ride. People's Republic of China (PRC) shut down. In PRC transportation shut down, electric power was rationed, international shipping was disrupted. Because of the control of international shipping is controlled by only a small handful of companies the actual cost of container skyrocketed. Since then, the cost of Chinese labor increased significantly.

Since PRC has opened the demand for Chinese botanicals increased in Asia and globally dramatically. The pandemic coincided with and increased the pace of the mass retirement of the baby boom generation. Due to this factor, there are severe labor shortages in Taiwan where our tablets are produced. I read a piece in the news

PHOTO: Tomoko Uji for Unsplash.com

about how labor shortages are affecting all aspects of the economy in Taiwan. The factory in Taiwan is struggling to cope with the labor shortages. They are currently working on ways to find ways to work around the problem. Many other countries like Italy, Japan, South Korea and other countries are coping with labor shortages.

We apologize for the stress these shortages have brought to Eastern Currents' customers and patients. The impact on our US customers has been very painful too. Please assure them that we are working on addressing this situation. It will require more time to find a solution to the current labor challenges. These labor issues are present here in the US too. The younger generation is smaller in numbers. We are grateful for your continued patience and loyalty. Because our specifications are a bit stricter than some suppliers some raw materials have been difficult to source.

*Sincerely,
John Scott*

DOM President, Golden Flower Chinese Herbs



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CARB-TCMPA Spring Update

Jennifer Bertrand
Executive Director, CARB-TCMPA

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The Canadian Alliance of Regulatory Bodies of Traditional Chinese Medicine Practitioners and Acupuncturists (CARB-TCMPA) is currently preparing for the April 2024 administration of the Pan-Canadian Examinations (PCE) for TCM Herbalists, TCM Practitioners, and Acupuncturists. The examinations will be held on the following dates:

- **TCM Herbalists Exam:** April 2 and 3, 2024
- **TCM Practitioners Exam:** April 4 and 5, 2024
- **Acupuncturists Exam:** April 24 and 25, 2024

CARB-TCMPA has also been moving forward with the new PCE Program Roadmap, which includes activities designed to address key issues with respect to the security and administration of the

examinations; build organizational capacity and examination content to support long-term program success; and review foundational documents, the structure of the program and examinations, and delivery approaches to verify the program reflects current needs and best practices.

In January 2024, CARB-TCMPA welcomed its new psychometric services provider, Spire Psychometrics. CARB-TCMPA sought a highly qualified team with psychometric expertise and support staff to assemble and validate exam forms, accurately score the examinations, report the results at several stakeholder levels, and support translated versions of the forms for administration. These processes must be completed on time, defensibly and accurately, and in an efficient and cost-effective way to support the ongoing stability and sustainability of the PCE Program.

Spire Psychometrics is a Canadian-owned and operated company that specializes in certification and licensing exam programs and brings to CARB-TCMPA decades of experience helping regulators and examining bodies of all sizes meet their exam program goals. CARB-TCMPA's new lead psychometrician, Greg Pope, has an MSc in Psychology, with a focus on quantitative research, psychometrics, and educational and psychological measurement. He has published and presented prolifically in his field of practice, and has over 30 years of experience providing psychometric services for a variety of government agencies and regulatory organizations, such as the Alberta College of Pharmacists, the Canadian Alliance of Physiotherapy Regulators, the Canadian Organization of Paramedic Regulators, the College of Massage Therapists of British Columbia, the College of Registered Nurses of Alberta, the National Dental Examining Board of Canada, the Massage Therapy Association of Alberta, and the Ontario College of Pharmacists.

In April 2024, CARB-TCMPA's staff team will also be growing with the addition of a new Examinations Director. This position will be responsible for the effective management of the PCE Program, including overseeing administration and development activities; supporting the PCE Steering Committee, Examinations Committee, Chinese Examinations Committee, and Appeals and Accommodations Committee; managing translation activities; and working with the Executive Director on key examination projects, such as competency profile validation. We are excited to continue to grow our team and enhance the quality and timeliness of examination services.

Finally, the CARB-TCMPA Board has been moving forward with actions arising from the governance review completed in 2023. The Board is exploring revisions to its bylaws, the establishment of a Finance and Audit Committee and Governance Committee to support the work of the Board, and revisions to its Strategic Plan to position the organization well



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for the future. To support this work, the Executive Director completed an organizational assessment and presented the findings to the Board in January 2024. The findings from this assessment will be used to guide strategic priorities and to create a roadmap for the future of CARB-TCMPA as an organization, with a focus on enhancements to governance and structure, programs and services, financial management, security and information technology, and certification standards.

We thank our stakeholders for their continued support during this extensive change process for CARB-TCMPA. This type of change initiative would not be possible without the support of our regulatory members, dedicated Board members, expert committee members, and input from associations, educational institutions, practitioners, and candidates across Canada. CARB-TCMPA is transforming because of the collective passion and commitment of these stakeholders: we have an exciting future ahead!

*- Jennifer Bertrand
Executive Director, CARB-TCMPA*



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Jennifer is the Executive Director of The Canadian Alliance of Regulatory Bodies of Traditional Chinese Medicine Practitioners and Acupuncturists (CARB-TCMPA).

CARB-TCMPA is the national forum and voice of provincial regulatory authorities that are established by their respective provincial legislation. Through collaborative activities, CARB-TCMPA promotes quality practice and labour mobility across Canada. For more information about CARB-TCMPA, visit: carb-tcmpa.org

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German Experiences Growing TCM Herbs:

Interviews with Dr. Heidi Heuberger and Valentin Weißenberger

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By Christiaan Spangenberg

The history of TCM herb cultivation in North America goes a few decades back at this point.

Over the last 30 years, the domestic and organic production of Traditional Chinese Medicinal herbs has been explored and developed by growers and groups across the United States to meet rising demand in the market, control quality, and to address concerns such as unsustainable over-harvesting in the herbal trade. Early growers such as Peg Schafer and Jean Giblette trialed dozens of TCM plant species at their farms and fostered educational

programming around the organic production of TCM herbs. More recently, the non-profit organization Liliium Initiative, founded in 2018, supports both herb growers and TCM practitioners with education, dialogue, and connection.

It might be surprising to learn that the longest initiative to grow TCM herbs in Europe also dates a few decades back. Since 1999, the Bayerische Landesanstalt für Landwirtschaft (Lfl for short, or the Bavarian State Research Center for Agriculture in English) has been leading an interdisciplinary research project to develop sustainable field

production methods for TCM herbs in the German state of Bavaria. During that time, researchers at the Lfl and industry partners undertook a comprehensive program trialing 19 TCM plant species to develop protocols and cultivation guides for each species that would yield high quality herbs. The project had an extensive scope, and aspects such as seed sourcing, plant breeding, quality comparison, and clinical application, were all tested and studied. This research project led to the domestic production of locally grown high quality TCM herbs by Bavarian farmers for a number of years.

In the fall of 2022, I visited Bavaria to see the field production of TCM herbs for myself, as well as to connect with the research team and local growers. During my visit, I met with Dr. Heidi Heuberger, the leading agronomist for the research project, as well as with Valentin Weißenberger, a local farmer in the region whose family had started growing TCM herbs in 2017. Both of them were kind enough to spare some time this February to respond to some questions via email about this agronomic project, and their experiences growing TCM herbs over the past years.

Interviews have been edited for clarity and to provide context where needed. Consult the article *Cultivation and Breeding of Chinese Medicinal Plants in Germany*, referenced by Dr. Heuberger, for additional information.



PHOTO: Provided by Christiaan Spangenberg

Test field of *Angelica sinensis*

INTERVIEW WITH HEIDI HEUBERGER

What motivated this research project? Why the focus on TCM herbs?

[The needs of TCM doctors and practitioners – see article]

The import of raw, dried plant products of Asian species which are mostly unknown in Europe poses problems ranging from drug material quality to sustainability of supply... field cultivation under controlled and documented conditions is a step towards improving drug safety and pharmaceutical quality characterized by its identity, purity and active ingredients.

[Heuberger et al., 2010]

Who were the main research and industry partners involved with this project, and what were their roles?

[See article]

Selected samples of imported and experimental herbs were analyzed for pharmaceutical quality... as well as sensory quality by experts at the laboratories of the two companies PhytoLab and Kräuter Mix. The experimental and... locally grown commercial herbs were observed in medicinal application coordinated by F. Friedl, Association for the Documentation of Chinese herbal Therapy, DECA, and by J. Hummelsberger, International Society for Chinese Medicine, SMS.

[Heuberger et al., 2010]

Which herbs did you trial in the research project?

[See article]

Angelica dahurica [Bai Zhi], *Angelica sinensis* [Dang Gui], *Artemisia scoparia* [Yin Chen Hao], *Astragalus mongholicus* & *A. membranaceus* [Huang Qi], *Bupleurum chinense* [Chai Hu], *Coix lacryma-jobi* [Yi

Yi Ren], *Glycyrrhiza uralensis* [Gan Cao], *Leonurus japonicus* [Yi Mu Cao], *Ligusticum chuanxiong* [Chuan Xiong], *Paeonia lactiflora* [Chi Sao], *Prunella vulgaris* [Xia Ku Cao], *Salvia miltiorrhiza* [Dan Shen], *Saposhnikovia divaricata* [Fang Feng], *Scutellaria baicalensis* [Huang Qin], *Sigesbeckia pubescens* [Xi Xian Cao], *Tribulus terrestris* [Bai Ji Li], *Xanthium sibiricum* [Cang Er Zi].

Plus: *Atractylodes lancea* [Cang Zhu], *Atractylodes macrocephala* [Bai Zhu], *Rehmannia glutinosa* [Di Huang], *Scrophularia ningpoensis* [Xuan Shen], *Saussurea costus* [Mu Xiang]. Only *Saussurea* is now in commercial production. *Xanthium* is no longer in commercial production due to its invasive behaviour and toxicity for mammals.

What were the criteria for selecting potential species for field production?

[See article]

The plant species for which production methods were to be developed were selected based on the following criteria: the climatic needs of the plants, supply difficulties, the advantage of local production [for example – controlled quality], the large quantities needed, the high price, and finally, that the plant should be neither a shrub nor an aquatic plant.

[Heuberger et al., 2010]

With which species did you experience the most and least success?

[See article: most success = commercial cultivation]

Angelica dahurica [Bai Zhi], *Artemisia scoparia* [Yin Chen Hao], *Astragalus mongholicus* & *A. membranaceus* [Huang Qi], *Leonurus japonicus* [Yi Mu Cao], *Salvia miltiorrhiza* [Dan Shen], *Saposhnikovia divaricata* [Fang Feng], *Scutellaria baicalensis* [Huang Qin], *Sigesbeckia pubescens* [Xi Xian Cao], *Xanthium sibiricum* [Cang Er

Zi]); least success = not suitable due to different reasons (climate, yield was not competitive, no mechanisation possible, invasive behaviour of the species) [these species include *Angelica sinensis* [Dang Gui], *Bupleurum chinense* [Chai Hu], *Ligusticum chuanxiong* [Chuanxiong], *Scrophularia ningpoensis* [Xuan Shen], *Tribulus terrestris* [Bai Ji Li].

Seed sourcing and germplasm acquisition is often problematic for herb-growers. Were there any challenges with sourcing seed, or with verifying botanical identity, during the research?

[See article]

Challenges included... difficult sourcing and frequently poor quality of seeds, uncertain botanical identity.

[Heuberger et al., 2010; and;]

You are right, it is difficult and problematic for farmers to purchase the correct and suitable seeds. We transferred the best varieties of each species to a seed trader that is now multiplying, cleaning and selling the seeds – multiplying sometimes in cooperation with the herb growers.



PHOTO: Provided by Christiaan Spangenberg

Field of two-year-old Astragalus

What were some of the biggest challenges during the research?

Developing vital seeds and making them germinate (for some species), and acceptance of Bavarian-grown TCM herbs just because they are not from China or because they look different (more intense colour, no root slices at the beginning) by wholesalers, pharmacists and some medical doctors.

What are the main differences between the agronomy of TCM herbs and other crops?

TCM herbs can be grown like European herbs, so for herb growers there is no difference. The difference to other crops is: limited information, high quality standards concerning purity and content of active ingredients, special infrastructure for (root) harvest, cutting and drying is needed, and a small market with a sometimes ideological understanding of quality – just to name a few.

How was the level and quality of the constituents of the domestically cultivated crops compared to imported herbs from China?

[See article]

Selected samples of ten species from experimental cultivation harvested in 2003 to 2005 and from commercial import bought anonymously from different wholesalers via two pharmacies in 2004-2006 were compared... It is difficult to make general conclusions about the quality of both imported and experimental herbal drugs. The quality of the imported samples was highly variable... the quality of the experimental material was also variable... the experimental samples were characterized by their fresh aroma.

[Heuberger et al., 2010]

If more information is needed, we have the detailed publications (in German). Update: the quality of



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Glycyrrhiza uralensis (Gan Cao), *Paeonia lactiflora* (Chi Shao), *Rheum officinale* & *R. palmatum* (Da Huang), *Xanthium sibiricum* (Cang Er Zi) were also compared and similar conclusions as for the first 10 herbs could be drawn.

At the start of the project, did you think that domestically grown herbs could match the potency of herbs grown in China? If so, are you still confident that domestically grown herbs match or exceed the potency of imported herbs?

Yes, we were convinced that they match if the proper genetic sources are used, the climate fits, [and the herbs are grown for an equal duration until active ingredients reach the needed levels (as noted in the Chinese Pharmacopoeia) and the processing is properly done. Two studies comparing the therapeutic effects confirmed this.

Herb-growers in the USA have emphasized the importance of replicating the wild conditions of medicinal plant species in cultivation. Did the field cultivation trial look at wild-simulated cultivation, and if so, how can growers preserve the wild nature of medicinal plant species?

What are wild conditions in cultivation? As stated in the question above: [we looked at] genetic source, climate, cultivation duration, and processing. If wild means mixing crops or letting weeds grow – this does not improve quality in most cases but makes it far less economical. Also in the Daodi regions in China, there is cultivation. There may be exceptions – like semi wild cultivation of *Glycyrrhiza* (Gan Cao) or plants that need tree canopies and shading, for example.

Do you think that there is enough demand for locally grown TCM herbs in Germany or Europe?

There is not enough demand at the moment. The market is very small, and the farmers need a certain volume to produce in order to keep the price on a relatively competitive level (although it is much higher than for Chinese sources anyway).

Are there any other agronomic projects focused on TCM herb field production in Germany or Europe that you know of?

I heard about the idea of growing TCM herbs in Spain but did not follow this (and never heard of it again). [There is] no other production in Germany, [except] maybe some single species that are also used for European phytomedicine or food.

Was the research aimed at conventional agriculture or organic agriculture? Is there room or applicability of the research for organic or biodynamic approaches?

The research was general and applicable to all cultivation approaches: we did not use pesticides (in Germany no pesticides are permitted to be used for cultivation of TCM herbs), and we used mineral fertilizer because this is more accurate in agricultural research. We determined the uptake of nutrients that is needed to do a proper fertilization management according to the needs of plants – irrespective of the form of fertilizer (organic, mineral). Commercial cultivation in Bavaria was either organic or integrated – depending on the farm. Organic medicinal herbs as such cannot be certified in Germany/ Europe because the regulation of organic production is related to food and feed, not for raw materials for herbal medicines.



PHOTO: Chi Liu for Unsplash.com

To what extent was pao zhi processing a part of the research?

We tried the fermentation of fresh roots of *Salvia miltiorrhiza* (Dan Shen), *Scrophularia ningpoensis* (Xuan Shen), and *Rehmannia glutinosa* (Di Huang). We had some success controlling the process and obtaining dark root tissues. However, more work would have been needed and as the commercialisation of the herbal drugs in general was so poor, we did not continue this.

What were the main results from the research project?

Cultivation guidelines for a number of TCM herbs considering the climate, domestic farmers' (infra) structure and regulations. Seed release (commercial availability) for the best variety of each TCM herb for production by farmers. Raised awareness of the wholesalers/ pharmacists/ medical doctors on the relevance of adequate germplasm, cultivation, and initial processing to obtain the desired quality (lab testing 'only' shows the result, you have to produce quality) Bavarian-sourced TCM herbs have the same therapeutic effects as those sourced from China.

How many farmers in the local region expressed interest in growing TCM herbs?

In total, 5 farming families produced TCM herbs between 2005 and 2023. At the moment, there are none [besides Valentin Weissenberger, who is still growing *Costus saussurea* (Mu Xiang)] – but this will change as soon as market demand increases.

Was there any follow-up support for farmers after the conclusion of the field cultivation trials to troubleshoot any issues?

Yes, we supported the farmers not only by print and written guidelines, but we also gave them agronomic experience (sometimes at field visits, but also by phone and email), supported the interaction with the wholesalers and other kinds of support. This was

special, because usually we do not have the time capacity to do 1-1 consultancy on farmers fields.

How many farmers are growing TCM herbs in the Bavarian region? Was there any interest from farmers or the farming/ agricultural community outside Bavaria to grow TCM herbs, or be involved with the research project?

See above. Sometimes, there are farmers that are interested in producing TCM herbs and they get in touch with me. But as the market is very limited, they usually drop the idea.

Would you suggest herb growers in North America try out cultivating TCM herbs?

Yes, why not, if they consider the aspects and experiences I described above for their own situation and market.

What advice might you offer for agronomists in other parts of the world hoping to start similar research projects for field production of TCM plants?

Do interdisciplinary research and include the actors of the value chain right from the beginning to properly address the relevant research questions and quality aims.

Heidi Heuberger

Dr. Heidi Heuberger is an agronomist, and the head of the working group Medicinal and Aromatic Plants Production Systems, Plant Genetic

Resources at the Institute for Crop Science and Plant Breeding, based at the Bavarian State Research Center for Agriculture.



INTERVIEW WITH VALENTIN WEISSENBERGER

Tell me a little about yourself, and how you got into farming:

My family has been running our farm for several generations. As a little boy, I was always out in the fields with my father and grandfather. I have always been fascinated by working with and in nature.

How did you and your family get started growing TCM herbs? Did you have any experience with traditional Chinese medicine?

In 2016, my father met Dr. Heidi Heuberger at an information event. At that time he was looking to build another pillar for the business. Up to this point, we had no contact with Traditional Chinese Medicine.

Is there a network of growers in the region growing TCM herbs?

We are the only ones growing TCM herbs in our region. As far as I know, there are 2-3 growers in Bavaria, but we have no contact with them.

How did the Bavarian State Research Center for Agriculture (LfL) support farmers trying to grow TCM herbs?

Dr. Heuberger from LfL in Freising was there to advise us right from the start. If we have any questions we can contact her at any time. She also advised us which plants grow best on our site.



PHOTO: Provided by Christiaan Spangenberg

Field at Valentin's family farm

How long have you been growing TCM herbs?

We started growing *Astragalus* (Huang Qi) and *Scutellaria* (Huang Qin) in 2017 and expanded cultivation to include seven different crops.

Are you also growing Western medicinal herbs on your farm? If so, which herbs?

No, we only grow TCM herbs. We wanted to limit ourselves to one niche.

What has your experience been growing TCM herbs?

The first few years were very difficult because we had no experience with cultivation, but we now know our way around quite well. But every year there are new challenges that we have to overcome. The biggest challenge of the last three years is climate change.



PHOTO: Provided by Christiaan Spangenberg

Field of two-year old *Scutellaria*

In your opinion, what makes Bavaria a good place to grow TCM herbs?

We actually have good conditions for growing TCM herbs here in Bavaria. Good soils, a mild climate, and sufficient rainfall. However, we have to realize that things have become increasingly difficult in recent years and, as already mentioned, this is due to climate change.

What are the main differences between growing TCM herbs and other types of crops?

The biggest difference when growing TCM herbs compared to growing other crops such as wheat, sunflowers or corn is that the personnel required to control weeds is much higher. With other crops, much more work can be done with machines. The TCM herbs require a lot of manual work, not only when controlling weeds but also during the harvest and the following processing steps up to the packaging of the goods ready for sale.

How was the level and quality of constituents of your domestically grown TCM herbs compared with imported herbs from China?

That is a question you would have to ask Ms. Heuberger. Over the last few years, I have repeatedly sent her analysis results from our TCM herbs. In many conversations with our customers, I learned that our goods can keep up with goods from China in terms of ingredients. However, in some cases a problem is the appearance of our goods (cutting patterns or colors), which leads to a certain degree of uncertainty among some customers.

What TCM herbs are you commercially growing at your farm?

We have tried growing a variety of TCM herbs over the years. These included: *Astragalus mongholicus* (Huang Qi), *Scutellaria baicalensis* (Huang Qin), *Saposhnikovia divaricata* (Fang Feng), *Salvia miltiorrhiza* (Dan Shen), *Glycyrrhiza glabra* (Gan

Cao), *Rheum officinale* (Da Huang), *Rehmannia glutinosa* (Di Huang), *Bupleurum chinense* (Chai Hu), *Ligusticum chuanxiong* (Chuan Xiong), *Coix lacryma-jobi* (Yi Yi Ren), *Scrophularia ningpoensis* (Xuan Shen) and *Saussurea costus* (Mu Xiang).

However, we mainly focused on the following TCM herbs: *Astragalus mongholicus*, *Scutellaria baicalensis*, *Saposhnikovia divaricata*, *Salvia miltiorrhiza*, *Glycyrrhiza glabra*, *Rheum officinale* and *Saussurea costus*. These TCM herbs grew best under our climatic conditions and we were also able to sell them well.

[At the moment, Valentin is only growing Saussurea costus (Mu Xiang) on his farm.]

What kind of processing do you do for the TCM herbs you grow?

All TCM herbs we grow are processed as follows: they are removed from coarse soil and then gently washed in a large vegetable washing machine without damaging the roots. They are then cut into thin slices using a special machine. This raw material is then dried in a large dryer with high air throughput at low temperatures. We then pack the goods into 5- 25kg bags or, for larger quantities, into big bags, depending on customer requirements. We also offered our products as powder for a while, but since customer response was very low, we removed these products from our range.

What is the market like for European-grown (or Bavarian-grown) TCM herbs?

At the beginning of our cultivation of TCM herbs, there was a relatively high demand and we were unable to produce the desired quantities. Since the start of the Ukraine war and the associated sharp rise in energy and wage costs, our sales have declined sharply. Buyers say that customers prefer to use the significantly cheaper products from China. Customers in Europe, but especially in Germany, are not prepared to spend a lot of money on good quality goods.

Which TCM herb have you found the easiest crop to grow? Which herb have you found the most challenging to grow?

The simplest and most productive culture is *Astragalus mongholicus* (Huang Qi). This plant is very robust and has the lowest demands on the local climate and the grower. The same applies to *Saussurea costus* (Mu Xiang). Cultures such as *Rheum officinale* (Da Huang) or *Scutellaria baicalensis* (Huang Qin) are also easy to cultivate but have very high germination requirements. *Bupleurum chinensis* (Chai Hu) would be very interesting for sale, but under our climatic conditions this plant only produces a very low yield and it is not at all economical to cultivate this plant.

What are some particular challenges and difficulties with cultivating TCM herbs?

The biggest challenge now is climate change. The periods of extreme drought and high temperatures are becoming longer and longer. But heavy rain events are also becoming more and more frequent. [This] other extreme with a lot of precipitation also worries us.

It started raining in our region in October 2023 and hasn't actually stopped to this day [February 19]. We cannot drive on our cultivation areas for sowing in 2024 because the soil is saturated with water. We hope that the weather will change in the next few weeks and we will get a stable weather situation with dry conditions.

What are the most important factors to consider when growing TCM herbs?

The most important thing is the soil structure. You can only work on the soil in spring when it has dried out sufficiently. If you start working too soon, you will destroy the natural structure of the soil and major problems will arise with the harvest in the fall. This can even mean that the plants cannot be harvested.

Which herb did you find the most interesting to grow, and why?

The most interesting is *Scutellaria baicalensis* (Huang Qin). If you get it in the spring you can establish a good population. It's always nice to admire the sea of blue flowers that appear from the end of July until September. It is also fascinating to see how many bees, bumblebees, and other insects are in this culture during the flowering period.

Is there support for TCM herb growers in Germany or Europe?

Ms. Heuberger supports us in cultivation with her great knowledge and experience.

Otherwise, we will not receive any further support from authorities or companies. The customers we supply have no experience in cultivation and cannot help us with any questions about the culture.



PHOTO: Provided by Christiaan Spangenberg

Salvia miltiorrhiza dan shen roots

What advice might you offer farmers in other parts of the world hoping to grow TCM herbs?

Courage to take risks and try out new cultures and cultivation techniques. To always be open to new opportunities that are offered to you. We have never regretted the step of growing TCM herbs. But everyone must also be aware that it involves a lot of work and setbacks. You'll never get bored.

Valentin Weißenberger

Valentin Weißenberger is a farmer in Bavaria who runs a fifth-generation farm with his father Alfons. He studied agriculture at the Weihenstephan-Triesdorf university and Osnabrück University. Since 2017, his family and him have been cultivating TCM plants.



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- *Christiaan Spangenberg*

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ABOUT THE AUTHOR

Christiaan Spangenberg

Christiaan Spangenberg is a gardener and medicinal herb grower of German-Chinese heritage based out of Vancouver, British Columbia. He is a recent graduate from the Global Resource Systems program at the University of British Columbia, where he studied ethnobotany and the cultivation of Asian medicinal plants, and is also a member of a working group of TCM practitioners, herb growers, and researchers in British Columbia that are working towards establishing a market for organic and locally-grown Asian medicinal herbs in the province. Christiaan is passionate about the cultivation and conservation of Asian medicinal herbs, and he is interested in exploring opportunities for dialogue between different fields that could lead to interdisciplinary collaboration. He is currently growing traditional Chinese medicinal plants at two community garden and farm sites in Vancouver to promote Asian herbal medicine and medicinal plant cultivation.

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