DIGGING IN

NOVA SCOTIA HORTICULTURE FOR HEALTH NETWORK

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The Nova Scotia Horticulture for Health Network is a coalition of people interested in supporting horticulture for health initiatives through resource-sharing, exchange of practices/knowledge, and networking.

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Photo top right: L. Fleming

Research Informs Practitioners: Cancer Populations and Plant-Based Programs

By Lesley Fleming, HTR
Photos by The Spruce | Randy G. & L. Fleming

Evidence-based research is an important component in every field as science moves knowledge and practice forward at unprecedented rates. For research focused on cancer, cancer treatment, and interventions, understanding and applying research can impact patients, families and health providers. Plant-based programs for cancer populations span a wide range of topics and disciplines, and they too are informed by research across fields of oncology, nutrition, and horticultural therapy. Symbiotically, practice can inform empirical, evidence-based research and provide data used in research analysis.

Examining recently published selected research can be important for practitioners - interpreting the research, finding applications for practice and new opportunities for therapeutic horticulture.

Gardening and Horticultural Therapy Integrated into Cancer Care

An IRB-approved study published in the 2024 *Journal of Therapeutic Horticulture* on a patient population of women with gynecologic cancer explored the impact of therapeutic horticulture (TH)

interventions on quality of life and anxiety, and the feasibility of implementing a TH program in a university setting (Jhaveri et al., 2024). Though the study had a small number of participants (7), limiting the ability to draw conclusions, outcomes suggested benefits of improved overall mental and physical health, and increased sense of camaraderie. It was conducted amid current practices for oncology care where holistic approaches are gaining validity, with this study the first of its kind with TH as an alternative/adjunctive modality delivered to gynecologic cancer patients. The use of psychometric tools (State-Trait Anxiety Inventory, Functional Assessment of Cancer Therapy-General, pre and post TH intervention assessment) in TH empirical investigations are appearing more frequently in published studies. Challenges identified for this study's TH intervention included transportation, scheduling, and personal health changes. The University of Florida study felt it was feasible for such a TH intervention program to be implemented, and that collaborations between or near a National Cancer Institute gynecologic oncology clinic and a well-developed TH program could be effective in providing health services to this cohort of women.

The study provides relevant points for practice. As the study states, no such TH programs for this population exist. Opportunities for practitioners could be explored, with a therapeutic focus on reducing anxiety and increasing socialization for gynecological cancer patients as mechanisms for improving quality of life. The Jhaveri et al. (2024) study identified the types of gynecological cancers of participants. Practitioners should note that this study's participants were in surveillance vs active treatment. Recruiting participants for the study was an issue and may be one for TH interventions. TH programs delivered to patients with any type of cancer can be difficult given on-going cancer-related treatment. The pilot study identified challenges like participant's unwillingness/inability to commit to regularly scheduled TH sessions, changes in participant's health, and transportation, these relevant to practitioners who may pursue interventions similar to this. The study suggested providing a financial incentive (gift card) to overcome some of these challenges.

Potential collaborations with oncology health organizations, not necessarily at an academic health institution as was the case with this study, are possible. Considering the study's comments about the current context of cancer care where clinicians place greater emphasis on patient's mental health after the diagnosis (Holland, 2002) including complementary alternative medicine - holistic approaches like mindfulness, lifestyle changes and in this case, therapeutic horticulture, may be in line with their cancer services. The pilot program's TH activities included basic plant care, plant propagation, plant identification and plant art, these delivered over a ten-week period where a wellness strategy was integrated into each session. This format is typical for TH programming.

Jhaveri, V., Diehl, E., Cabana, S. et al. (2024). Exploring the impact of therapeutic horticulture in gynecologic oncology patients: A pilot study. *Journal of Therapeutic Horticulture, 34*(1).

Frontier in Public Health published a 2025 pilot study investigating hydroponic gardening (using systems kits) vs traditional in-ground gardening for cancer patients and the impact on mental health and quality of life (Roh et al., 2025). Cancer patients gardened for 8 weeks using an indoor hydroponic system. Noting that therapeutic benefits of gardening are well documented, the investigation was based on the concept of social prescribing, described as an innovative and holistic approach where patients were involved in non-clinical interventions using hydroponic gardening. The study commented on the current context of cancer management where more than just medical treatments are being used. Depression and high incident rates of cancer were noted as critical factors in wellbeing. Several psychometric tools evaluated patient outcomes (European Organization for Research and Treatment of Cancer Quality of Life Questionnaire (EORTC QLQ-C30); Behavioral Risk Factor Surveillance System (BRFSS) for fruit and vegetable intake; and the Short-Form Brief Pain Inventory (SF-BPI) for measuring pain). The scores for mental wellbeing over the 8-week intervention improved steadily. Stress and anxiety scores did not show significant changes. This empirical evidence supports "further benefits of gardening for cancer patients and survivors, such as improved pain management, better treatment outcomes, and reduced recurrence of health issues", with this type of intervention one strategy or method that offered beneficial outcomes.

The Roh study provides relevant points for practice. Hydroponic gardening, either in community settings (in hospitals or community gardens) or at individual's homes offer options for gardening and therapeutic horticulture with cancer patients. This can be particularly important for participants who may have challenges with transportation or days when they are not feeling well, these identified in the Jhaveri study as challenges to the investigation. Installation of in-home hydroponic vegetable systems may require support from HT practitioners including drop-off of equipment and materials, and on-going support and engagement. The 2025 study reported that all participants were able to set up and grow vegetables in the hydroponic system provided (AeroGarden model 100641). Indoor hydroponic set-ups can eliminate weather or seasonal challenges as well as insect infestation. Outdoor hydroponic systems should also be considered if space and setting allow. These systems have been used across populations effectively. Practitioners need to mindful of selecting plants that will thrive in hydroponic settings to ensure success. Many hydroponic kits suggest types of plants (shallow roots systems, fast rates of maturation for harvest) and may come with seed packets. University of Florida suggests leafy salad crops like romaine, Boston, bibb, mustard greens, mint and kale for hydroponic growing (2026). Becoming acquainted with the psychometric tools used in the study can expand HT practitioner professional knowledge. While the use of these tools by practitioners may not occur, understanding what is being measured for wellbeing and quality of life, and nutritious food intake will inform

professionals. Partnering with people who can administer such tests/evaluations may be a possibility particularly in clinical settings.

> Roh, T., Verzwyvelt, LA., Aggarwal, A. et al. (2025). Indoor hydroponic vegetable gardening to improve mental health and quality of life in cancer patients: A pilot study. *Front Public Health., 13.*

A study by Denmark-Wahnefried et al. (2024) investigating older cancer survivors and vegetable gardening and health improvements was undertaken over a period of years, from 2016-2022. Similar studies have been conducted, suggesting positive health outcomes, including the Harvest of Health feasibility trial. As functional abilities decline for cancer survivors, this randomized clinical trial of 381 cancer survivors determined that a vegetable gardening intervention "did not significantly improve composite index of diet, physical activity, and physical functions". Participants did increase vegetable and fruit consumption, and they self-reported perceived health improvements and physical performance.

Relevant points for practitioners include the important use of vegetables for HT/TH interventions. While ornamental plants can provide beauty contributing to improved quality of life, vegetables have the added element of improving nutrition, an important health determinant. The importance of perceptions by participants and its role in contributing to improved quality of life, particularly during a cancer journey when self-esteem and confidence typically are negatively affected, was noted in this study.

> Demark-Wahnefried, W., Oster, RA., Smith, KP. et al. (2024). Vegetable gardening and health outcomes in older cancer survivors: A randomized clinical trial. *JAMA Network Open*, *7*(6).

A variety of publications have included empirical studies illuminating the scope of research connecting gardening and/or horticultural therapy/therapeutic horticulture within a cancer treatment context. Research by Chang et al., (2024) investigated the use of digital tools assisting in assessing patient outcomes and quality of life from gardening and HT interventions within the current medical care environment. Nadeem et al. (2025) examined HT as a complimentary intervention in palliative care, and Lee (2023) investigated HT program impacts on cancer survivors from the perspective of "health status, quality of life, psychological symptoms".

Summary

Practitioners can benefit from research as it expands boundaries in horticultural therapy. Empirical studies, particularly when they are peer-reviewed, bring credibility to the field, using the latest

scientific methodologies to investigate health practices and outcomes. The studies are acknowledging different types of gardening including hydroponics, and expanding awareness of therapeutic use of plant-based interventions. Opportunities exist for collaborations between academic institutions conducting research and horticultural therapy practitioners delivering services to cancer patients and survivors.

Chang, TW., Tsai, ST., Huang, HY. et al. (2024). Slow well-being gardening: Creating a sensor network for radiation therapy patients via horticultural therapeutic activity. *Sensors*, *24*(12).
Demark-Wahnefried, W., Oster, RA., Smith, KP. et al. (2024). Vegetable gardening and health outcomes in older cancer survivors: A randomized clinical trial. *JAMA Network Open*, *7*(6).
Jhaveri, V., Diehl, E., Cabana, S. et al. (2024). Exploring the impact of therapeutic horticulture in gynecologic oncology patients: A pilot study. *Journal of Therapeutic Horticulture, 34*(1).
Lee, KM. (2023, March). Effects of horticultural therapy programs on health status, quality of life, psychological symptoms, and self-integration of cancer survivors. *Oncology Nursing Forum, 50*(2).
Nadeem, MB., Habib, E., & Hamayal, M. (2025). Horticulture therapy as a complementary intervention in palliative care: A narrative review. *Journal of Social Work in End-of-Life & Palliative Care*, *21*(4).
Roh, T., Verzwyvelt, LA., Aggarwal, A. et al. (2025). Indoor hydroponic vegetable gardening to improve mental health and quality of life in cancer patients: A pilot study. *Front Public Health., 13.*
University of Florida. (2026). Hydroponic vegetable gardening. *Gardening solutions.ifas.ufl.edu.*

Lesley Fleming, HTR updated the Florida Horticulture for Health Network Resource Hub's selected bibliography on cancer populations and plant-based programs in early 2026. It was from this source that the studies summarized in this article were drawn.

The articles in this issue of Digging In have been concurrently published in Florida Horticulture for Health Network's epub Cultivate, 6(3).

Specific Plants and Connections to Cancer Prevention and Treatment

Text by Lesley Fleming, HTR
Photos by L. Fleming, VOA, ShopRite, Edible Co. & SmartFood

"Significant number of studies connecting plants and cancer care have focused on nutrition and plant-based diets supporting this lifestyle choice, particularly as it relates to cancer (Guerra et al., 2018; Wu et al., 2020; Santana-Gálvez et al., 2020; Buentzel et al., 2022; Shen et al., 2023). Recent research has been published investigating plants' anticancer properties as potential preventative and treatment options." (FLHHN Resource Hub Cancer Populations and Plant-based Programs, 2026).

Patil's article (2024) identifies thirty-two plants as promising for cancer treatment and prevention and includes some common and well-known plants as well as some less common. The research suggests these plants and their bioactive compounds and mechanisms take action against cancer cells, contain anticancer properties, with ability to inhibit cancer cell growth, suppress angiogenesis, and modulate immune responses. Plants included in Patil's paper include *Asparagus racemosus and Asparagus officinalis, Allium sativum* (garlic), *Bacopa monniera* (Brahmi), *Arachis hypogaea* (peanut), *Camellia sinensis* (camelia), *Crocus sativus* (saffron), and *Oryza sativa* (rice).

Application for practitioners can include knowing and selecting plants that can contribute to cancer prevention, or oncology-suggested dietary guidelines. These can guide HT/TH practitioners in growing these in programs, tasting them as an introduction to foods and promoting their health benefits, selecting nutrient dense plants vs less nutrient strong edible plant foods, tailoring interventions to cancer populations, and supporting participants' knowledge acquisition and experience in growing these plants in home settings.

The following are selected empirical studies from the Florida Horticulture for Health Network Resource Hub that have examined and discussed specific plants and their positive impacts on cancer:

Hardt, L., Mahamat-Saleh, Y., Aune, D., & Schlesinger, S. (2022). **Plant-based diets and cancer prognosis: A review of recent research.** *Curr Nutr Rep., 11*(4).

Heydarirad, G., Choopani, R., Pasalar, M. et al. (2019). **The effect of a chickpea-based Persian diet on cancer-related fatigue in breast cancer patients: A semi experimental study.** *Complement Med Res.,* 26(6).

Huang, YW., Lin, CW., Pan, P. et al. (2020). **Black raspberries suppress colorectal cancer by enhancing Smad4 Expression in colonic epithelium and natural killer cells.** *Front Immunol., 11.*

Jahanafrooz, Z., Mousavi, MMH., Akbarzadeh, S. et al. (2024). **Anti-breast cancer activity of the essential oil from grapefruit mint (*Mentha suaveolens* × piperita).** *Fitoterapia, 174.*

Keaver, L., Houlihan, C., O'Callaghan, N. et al. (2022). **Evidence-based nutrition guidelines for cancer survivors in Europe: A call for action.** *Eur J Clin Nutr., 76*(6).

Kenchappa, PG., Vijendra, PD., Kumar, HV., & Swamy, PHM. (2025). **Plant-based foods for the management of cancer.** In *Functional compounds and foods of plant origin* (pp. 451-474). Apple Academic Press.

Li, X., Qin, Y., Liu, W. et al. (2018). **Efficacy of ginger in ameliorating acute and delayed chemotherapy-induced nausea and vomiting among patients with lung cancer receiving Cisplatin-based regimens: A randomized controlled trial.** *Integr Cancer Ther., 17*(3).

Mann, S., Sidhu, M., & Gowin, K. (2020). **Understanding the mechanisms of diet and outcomes in colon, prostate, and breast cancer; malignant gliomas; and cancer patients on immunotherapy.** *Nutrients, 12*(8).

Mazur, Ł., Balwierz, R., Michalak, K. et al. (2025). **Green tea catechins: A promising anticancer approach for leukemia.** *Planta Med., 91*(4).

Mondal, A., Banerjee, S., Bose, S. et al. (2021). **Cancer preventive and therapeutic potential of banana and its bioactive constituents: A systematic, comprehensive, and mechanistic review.** *Front Oncol., 11.*

Morrison, MEW., Joseph, JM., McCann, SE. et al. (2019). **Cruciferous vegetable consumption and stomach cancer: A case-control study.** *Nutr Cancer., 72*(1).

Patil, S. (2024). **Nature's cancer fighters: Thirty-two powerful plants with promising anticancer potential.** *World Journal of Pharmaceutical Sciences, 12*(01).

Poonkuil, NL. (2026). **Botanical-green warriors: The role of medicinal plants in revolutionizing cancer treatment.** In *Green antibacterial materials* (pp. 443-468). Woodhead Publishing.

Romanos-Nanclares, A., Willett, WC., Rosner, BA. et al., (2021). **Healthful and unhealthful plant-based diets and risk of breast cancer in US women: Results from the Nurses' Health Studies.** *Cancer Epidemiology, Biomarkers & Prevention, 30*(10).

Shafi, L., & Iqbal, P. (2025). **Indian gooseberry: Role in cancer prevention and treatment.** In *Neglected and Underutilized Crops* (pp. 94-115). CRC Press.

Lesley Fleming accessed research she did for the Florida Horticulture for Health Network's Resource Hub and its cancer populations and plant-based programs sharing current information, with this article's focus on plants, nutrition and cancer prevention connections.

Healthcare Gardens for Cancer Survivors, Patients and Care Partners

By Lesley Fleming, HTR
Photos by The News- Gazette, The Columbus Dispatch,
Chadwick Arboretum & Learning Center, Cancer Victory Garden

Gardens come in all shapes and sizes and can be impactful for people on a cancer journey—patients, survivors, family members and care partners—as they navigate what can be for some, extended periods of time. The gardens exist in a multitude of settings including hospitals, transfusion departments, hospices, clinics, and public parks.

Playing multiple roles, the gardens can be green space for mental restoration and renewal, as well as delivery sites for health services like infusion treatment, horticultural therapy or therapeutic horticulture, acupuncture, creative arts therapies, or therapeutic yoga. The gardens provide passive and active engagement with nature, and with other people, not just for cancer patients but also for others on the cancer journey including staff. Important elements guide the design and establishment of cancer gardens; an understanding of psychosocial impacts of cancer - sense of loss, fear, reduced independence and isolation, social stigma and labeling as a person with cancer (Fleming & Figuerio, 2016; Cooper Marchs & Sachs, 2013). Equally significant are physical and psychological symptoms associated with cancer that are considerations for garden design. "Cancer or cancer treatment (chemotherapy, radiation therapy, surgery) may cause fatigue, dizziness, loss of strength and stamina, reduced mobility and a sense of loss of control. These changes may only be temporary during treatment or may become permanent" (Sieradzki, 2013).

The field of healthcare environmental design now considers green space to be important components of all facilities including cancer centers. Such gardens are indoors, outdoors, in woodland settings, cultivated and in natural environments. Clare Cooper Marcus and Naomi Sachs' book provided a framework for therapeutic gardens including ones for cancer populations. *Therapeutic Landscapes: An Evidence-Based Approach to Designing Healing Gardens and Restorative Outdoor Spaces*, substantiated the use of evidence-based research, post-occupancy evaluations and principles from healthcare

garden design and landscape architecture disciplines. Examining gardens used by people who have experienced or are currently undergoing cancer treatment sheds light on the variety of green spaces that are designed specifically for this population for healing, restoration and improved health outcomes:

Outdoor Rooftop Garden Within a Hospital: *Carle Foundation Hospital* (Indiana) has a rooftop garden, opened in 2022, named after a young leukemia patient who passed away. Intended for use by cancer patients and families, the garden is plant-rich with 2,000 plantings, three small trees, a pergola and paved pathway. Photo page 1.

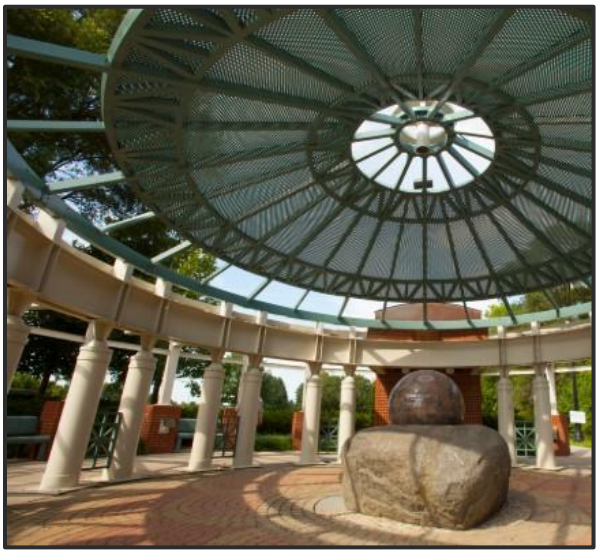
Enclosed Indoor Hospital Garden for Immune Compromised Patients: *Dana-Farber Cancer Institute's Morse Conservatory* in Boston, MA is unique for its enclosed space overlooking the Thea and James Stoneman Healing Garden in the Yawkey Cancer Care Center garden, with strict infection control standards, for use by those who are immune compromised. Both green space indoor environments provide quiet places for patients, visitors and staff during hospital time.

Urban Farm with a Nutrition Focus: *Garden of Hope*, a 1.5 acre urban garden in Columbus, OH was created by Ohio State University, designed in collaboration with OSU's agricultural research center and James Cancer Hospital with the goal of "reacclimating cancer survivors to healthy food and taste post-cancer treatment", using national oncology guidelines for plant-focused diets, nutritional education, and hands-on gardening/harvesting activities in addition to a variety of programs like cooking demonstrations, healthy lifestyle classes, and container gardening. Photo left.

Adjunct Cancer Services Delivered in a Garden Setting: *The Gathering Place Norma's Garden,* located in Cleveland, OH, adjacent to a cancer support center, has multiple gardens designed to support and symbolize multiple stages in a cancer journey, The garden hosts activities including support groups in this green setting using extensive plantings, a great lawn area, Walk of Friends, and a waterfall.

Cancer Survivors Parks: *The Richard and Annette Bloch Cancer Survivors Parks* in 24 communities (Dallas, TX, Memphis, TN, Ottawa, Canada) are individually designed based on local attributes, and are constructed based on three elements: positive mental attitude walk with plaques of inspiration; life-sized sculptures passing through a maze representing the cancer journey; and a Road to Recovery with information about cancer and actions to overcome the disease. Their mission – a message that death and cancer are not synonymous and fighting the disease is important. Photo page 8.

Garden Adjacent to Cancer Center: *Paula Fox Melanoma and Cancer Center and its garden* provide patients, families and staff with respite, retreat, and beauty in a hospital setting turning the area into a "people-humming place" in Melbourne Australia.



Many gardens that support people with cancer offer safe space and access to nature. *Carti Cancer Center Blooming Garden* was planted by cancer survivors, with a colorful garden space available for respite and serenity. *Pearson Cancer Center Garden* with outdoor beds, trellis vertical structures, and food gardening in Lynchburg, VA. is supported by master gardeners. A woodland setting at the *Virginia Thurston Healing Garden*, Harvard MA provides a tranquil natural location at its cancer facility. The *Cancer Victory Garden* provides cut flowers to cancer patients. This small sampling of gardens for people on cancer journeys highlights different approaches and use of gardens for healing and restoration for this population.

Cooper Marcus, C. & Sachs, N. (2013). *Therapeutic landscapes: An evidence-based approach to designing healing gardens and restorative outdoor spaces*. Wiley.

Fleming, L., & Figueiredo, M. (2016). Healing gardens for cancer populations. *Therapeutic horticulture – A practitioner's perspective.* Smashword.

Sieradzki, S. (2013). Enabling solutions for specific health conditions. *AHTA News Magazine 41*(2).

Lesley Fleming accessed research she did for the Florida Horticulture for Health Network's Resource Hub and its cancer populations and plant-based programs sharing current information, with this article's focus on gardens. She and M. Figueiredo had previously written an article on cancer gardens in 2016.

Gardens at Hospitals

Roger Ulrich's well-known work in healthcare environmental design and research, has stated that "physical environments can affect patient medical outcomes and care quality" (Ulrich, 1984). Supportive design, a term referring to factors facilitating coping and restoration from stress that accompanies illness and hospitalization, not limited to gardens in hospitals, but including them, validates these physical green spaces (Ulrich, 2000; Cooper Marcus & Sachs, 2013).

The Center for Health Design and The Facilities Guidelines Institute, are the leading authorities in this sector. They have "established parameters for hospital garden design, construction, and maintenance covering multiple facets: 'views of nature should [not shall] be considered in design of physical environment, ideally with direct physical access to outdoors or suitable alternatives', should provide a garden…[with] consider[ation] for specifically designed therapeutic or restorative gardens for patients and/or caregivers…separate outdoor respite areas for medical and support staff should be provided…opportunities for active as well as passive interaction with nature in outdoor spaces should be provided…[and] signage, access to both sun and shade' (2018). While hospitals are not required to have gardens, most have green spaces, because of mental and physical benefits for all stakeholders" (Fleming et al., 2022). Photo: The Cultural Landscape Foundation of The Gathering Place Norma's Garden.

Cooper Marcus, C., & Sachs, N. (2013). *Therapeutic landscapes: An evidence-based approach to designing healing gardens and restorative outdoor spaces*. Wiley.

Facility Guidelines Institute. (2018). *FGI guidelines for design and construction of hospitals*.

Fleming, L., Zhang, W., & Nelson, K. (2022). Horticulture for health activity in U.S. hospitals: Horticultural therapy, nutrition-led programming, gardens in hospitals, and affiliated community gardens. *Journal of Therapeutic Horticulture 32*(1).

Ulrich, R. (2000). Effects of healthcare environmental design on medical outcomes. *International Academy for Design and Health.*

Ulrich, R. (1984). View through a window may influence recovery from surgery. *Science, 224*(4647).

THAD Examples:

Plants Can Contribute to Cultural Connections

Text by Lesley Fleming, HTR
Photos by Sudachi, L. Fleming, WFAE, G. Sherman, M. Chen

Introducing and establishing cultural connections is important for understanding the world. Cultural connections promote sense of community, traditions and tolerance. Plants can play a role in cultural connections as evidenced by THADS, now available to practitioners. THAD therapeutic horticulture (TH) activities reflect diverse themes, as well as cultural touchstones, traditional celebrations and plants that are important in the traditions and activities. Many of the THADs described in this article include applications for other countries and cultures so that TH practitioners can adapt them to suit their purposes and populations while expanding tolerance for others. Cultural sensitivity to individuals and cultures is foundational in human health services including therapeutic horticulture.

Plums & Plum Syrup with Intergenerational Activities & Social Participation and Plum Syrup Refreshment, written and delivered by Yuki Miyake 三宅優紀 reflects interest in social participation and agriculture-welfare collaborations, ume or plum fruit prevalent in Japan, and an intergenerational activity that brought university students together with elders who shared their knowledge of traditions, strengthening sense of community for both. A second session focused on socializing and drinking the plum syrup refreshment which had been made in the previous session.

Fring Frang Acadian Potato Dish introduces and celebrates historic food pathways from Canadian Acadian culture with participants making this food, while strengthening physical skills, cognitive knowledge acquisition and social interactions. Sensory goals related to gustatory/taste, nutrition and eating challenges can also be integrated, these health challenges not restricted to one country or population. Potatoes are the fifth most important crop worldwide, so applications across countries and cultures can resonate with TH delivery beyond Canada.

Ring in the New Year: Plant Connections explores celebrations from Vietnam, Korea, Japan and Chinese communities that involve plants like apricots symbolizing perseverance and hope in Chinese culture, peaches representing growth and prosperity in Vietnamese celebrations, and the Korean New Year, called Seollal, with colorful peonies, orchids and plant gifts like money tree and bamboo. This can introduce and explore participants' heritage or local communities from these countries and cultures.

Caribbean Islands' Bush Tea using local plants and herbs like soursop, papaya, wild grass and vervine, based on traditions passed down from generation to generation, has historic and cultural significance and continues to be a popular beverage today in many Caribbean communities. Adaptations of this THAD using plants practitioners have available can incorporate sensory goals tasting the tea, practice of social skill development interpreting social cues and expansion of plant knowledge.

Earth Day Hanging Kokedama and Spring Kokedama in Vases are based on the traditional Japanese technique of growing plants in moss balls. Understanding the traditional methods, or celebrating festivities around the globe can support sensory therapeutic goals including increasing tolerance for materials like wet moss and scratchy twine. The spring kokedama activity focuses on hand strength, gentleness and power, applicable across populations and cultures, using plants like ferns, begonias, and strawberries which are commonly found in plant shops around the globe.

Decorating Pomelos as Faces for Mid-Autumn Celebration THAD presents this citrus fruit, important in Taiwan, as a TH activity that has been used to celebrate this fall festival and incorporate therapeutic goals for strengthening skills for facial recognition, emotional awareness, and fine motor skills. The commonality of pomelos, grown in Taiwan and other countries, promotes the concept of more in common than we realize. THAD written by Melanie Chen 湘華.

Easter Baskets with Ryegrass, Easter Extravaganza with Flowers, Passover Celebration with Plants, the latter with the 7 symbolic foods of the Jewish culture each use plants to introduce and expand participants' understanding of cultural connections and people-plant interactions. These highlight practitioner sensitivity to individuals and groups' cultural and religious affiliations, particularly where these traditions may not be their own. Many cultures have spring holidays that can be included in a TH activity with a hands-on activity or mention of other's customs.

Poem + Nature Walk – Bereaved written for outdoor connections to nature for the loss of loved ones is universal in its ability to address feelings of loss and find coping strategies using poetry, exercise and nature. Poems with cultural significance can provide participants with important links, including the poem suggested by co-author Siang Yu Tham from Singapore.

Lesley Fleming, HTR has led the THAD project since its inception, and identifies THADS from the database that have cultural components. Thank-you to THAD contributors Yuki Miyake 三宅優紀, Kathy Carroll, Gerry Sherman, Hsiang-Hua (Melanie) Chen 湘華, and Lesley, as well as the photographers listed in the article.

THADS with International Connections

Text by Lesley Fleming, HTR
Photos by Y. Miyake 三宅優紀, S. Sterling, L. Fleming

Interest in the therapeutic horticulture activities database, referred to as THAD, has been widespread including practitioners from multiple countries sharing their activities and expertise. Cross cultural connections and adaptations have been identified.

Canada –Celebrating Potato Blossoms, Making Agua Fresca based on Spanish cuisine, Blueberry Activities recognizing this fruit as an important local plant also grown worldwide, and Making Salsa borrowing from Mexican traditions.
(Mitchell Hewson, Kathy & Bob Carroll, Lesley Fleming)

Caribbean Islands – Bush Tea and Memory Recall – Flower Names activities from Antigua can be adapted to any location using local plants and flowers.
(Lesley Fleming, Anne Larsen & Curt Angol)

Japan - Origami Calendar with Seeds & Pressed Flowers uses universal calendar, and Pressed Flower Keychains can use locally available plant specimens.
(Yuki Miyake 三宅優紀, Akiyo Kawamura 川村明代)

Qatar – Bird Feeder - attract birds from any geographical location. (Christina Mortada)

Spain – Cultivating Gratitude with references to Naikan (Japanese) meditation, and Growing Mindfulness Awareness in TH Activities. (Eva Creus)

Taiwan – Decorating Pomelos as Faces for Mid-Autumn Celebration (see previous article)
(Hsiang-Hua (Melanie) Chen 湘華)

United Kingdom – Bulb Lasagna Planting written for bereaved populations, can be used across cultures, in memory of a loved one and Scents of Nature at Christmas.
(Eleanor Moriarty Wroath)

United States – Foot & Hand "Bath" with Fresh Herbs based on Japanese cultural tradition of O-shibori; Hapa-zome Leaf Dye Japanese technique delivered with American students; Alphabet Garden with adaptation using any alphabet and local plants; California Native Oaks: A Sense of Place relates the historical background of the state and the connections of Indigenous peoples to oak trees.
(Lesley Fleming, Diane Relf, Sarah Sterling, Kathy Oliver, Trish Hildinger)



Resources Summer 2026


Photo: eBirdKids

Plant ID tools and apps are encouraging citizen scientists to observe and share information about the natural world.

iNaturalist www.inaturalist.org
Website, app and science aggregator encourages and receives data from citizen scientists/naturalists from around the world for birds, insects, and plants. Using crowdsourcing identifications, along with networking, virtual forums, reports, requests for information, educator category, tutorials and projects like Nova Scotia Holiday Bird Bioblitz and Sugar Robbers, this engaging, interactive site promotes and supports interest in the natural world. Areas include: butterflies/moths, dogwood, bald eagle, fish, gastropods, hoary rosette lichen and so much more.

Pl@ntNet Plant Identification https://plantnet.org
Website and app – with this app, "identify one plant from a picture, and be part of a citizen science project on plant biodiversity". Gathering this information informs research data, projects, training, education, and community engagement as well as projects like robotic and sensor weed control investigation, or a microproject about a garden's species.

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Sarah Sterling, Kathy Oliver, Trish Hildinger

The News- Gazette, The Columbus Dispatch,
Chadwick Arboretum & Learning Center, Cancer Victory Garden The Gathering Place,
The Spruce | G. Randy, Sudachi, WFAE, G. Sherman, M. Chen 湘華, Y. Miyake 三宅優紀,
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Fall 2026 Issue of *Digging In:*
Plants and Sense of Place

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We would like to acknowledge Nova Scotia is traditional territory of the Mi'kmaq people. We are grateful for Peace and Friendship treaties. We are all Treaty people.