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Local Herb Growers Think Globally

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A new Web site, www.localherbs.org, is taking orders from members of the acupuncture and Oriental medicine profession for domestically and ecologically grown Chinese medicinal herbs. Announced last November at the Pacific Symposium, the Web site was launched by a national group of farmers working together since 2000 as the Medicinal Herb Consortium (MHC).

LocalHerbs.org is intended as an open bid for the endorsement of the AOM community to support a cooperative process expected to unfold over many years' time. As more hearts and minds seek harmony with nature, that new awareness extends to medicine and people begin to question what's in those pills. Herbal practitioners are challenged to reassure patients that their herbs are sourced in a sustainable manner with full consciousness of conservation and ecological issues. Meanwhile, herbs offer several advantages as crops for small-scale, biodiverse farmers. Although herbs will continue to be imported from China for the indefinite future, both AOM practitioners and growers can benefit from a concept of food security that eventually includes locally grown healing herbs.

Beyond improvements in access and control, a deeper assimilation of the Asian knowledge of healing would advance science and improve the health of our society. North American native medicinal plants are closely related to the Asian; many were used similarly by indigenous peoples of both continents. Given a means for AOM practitioners and farmers to compare the qualities of plants grown here, consensus can be reached concerning which species in which locations may serve as "regional variants" for the herbs of the Chinese materia medica.

The MHC farmers and an increasing number of AOM professionals envision what amounts to the restoration of plant-based medicine in North America - demonstrated through science and grounded in respect for nature - as the most desirable outcome of this effort. But rather than get too far ahead of the story, let's see what kind of harvest is possible.

Twenty Years for the Sprouts to Emerge

The LocalHerbs.org Web site is an outgrowth of seeds sown since the late 1980s. At that time, Robert Newman (now clinical director at Emperor's College in Santa Monica, Calif.) was a student at the American College of Traditional Chinese Medicine (ACTCM) in San Francisco. That was when ACTCM invited Professor Xu Hong-hua to the U.S. The plants he brought with him eventually became the Chinese Medicinal Herb collection at the UC Berkeley Botanic Garden.

Robert didn't want to travel across the Bay to visit the plants; however, he went to China, many times. By 1995, working through the worldwide network of botanical gardens, he had amassed a collection of several hundred Asian species in seed form and in pots lining the hallways of ACTCM. The bursting point being reached, he then distributed the collection to eight growers around the country. This grower group became known as the "Newman Conservators" - the Johnny Appleseeds of Chinese medicinal herbs in the U.S.

The conservators who have gone the distance, growing out the Asian herbs each year for more

than a decade or two and maintaining substantial collections, include Joe Hollis of Mountain Gardens in western North Carolina; Vinnie McKinney of Elixir Farm in southern Missouri; Cindy Riviere of Plant-It Herbs in Athens, Ohio; Peggy Schafer of Chinese Medicinal Herb Farm in Petaluma, Calif.; and myself.

"At first I didn't know where all this would lead," Robert Newman remembers. "At the time, I needed to understand the plants well beyond what pharmacy material would show me. The only way to do that is through actual contact with the living organism, preferably in the wild, but a garden or even a pot would do. It was utterly necessary for me in my professional education, and I think it must be for many others also."

Robert, Joe, Peggy and I, along with Charles A. Martin in northern New Mexico and Z'ev Rosenberg at Pacific College in San Diego, now teach botany to AOM students. They also give herb walks, tours and workshops at college gardens and other teaching locations - now more than 15 sites nationwide.

Of course, we were well-aware of the Asian plants' deeper roots in America. Our work has spurred interest among U.S. botanical gardens in the medicinal value of their existing Asian accessions. Harvard University's Arnold Arboretum has the oldest specimens thanks to plant hunter Ernest Henry Wilson, who brought back hundreds of ornamental species from China. These included the first specimens of *Eucommia ulmoides* (du zhong), quince and *Albizia julibrissin* (he huan pi/hua).

Our work extended beyond botany. Being independent of major institutions, we had to practice horticulture and agriculture in order to build our collections. This aspect of the work gave rise to a separate, related line of development - actual production of Asian medicinal herb crops for market.

The domestic production concept arose out of certain frustrations experienced by small-scale U.S. farmers during the herbal industry boom of the 1990s. Initially encouraged to grow herbs by manufacturers, the farmers were left with planted fields and no market, as production quickly went abroad to countries with cheap labor. Since then, farmers have learned to cooperate and get smarter about marketing.

The organic movement has led to several innovations in food production and distribution. Farmer alliances, community-supported agriculture and the perceived values of buying locally have provided direct markets for growers of fruit and vegetables, or pastured meats and dairy. The Sonoma County Herb Association's Exchange and a few other medicinal herb projects were founded on such principles in the late 1990s.

For Chinese medicinal herbs, national-scale cooperation among the growers groups is vital to this work, according to Peggy Schafer. "I sell everything I can grow," she reports. "Of course, we have the advantage of being able to sell fresh herbs to Bay Area practitioners. But some things won't grow here. Trichosanthes produces fruit at High Falls Gardens in New York, but not here. These kinds of comparisons - the agronomic science as well as the systematic evaluation by the AOM profession - are needed to make our work move forward."

Growth of a New Science

Cooperation among the conservators and farmers has produced an abundance of data on the Asian plants' adaptability. In the varied climates of the temperate zones, plants can be highly versatile in the expression of their genetic potential in response to local conditions. Different constituent profiles in the same species have been observed from one wild population to the next, whether in Asia or America. Then the questions emerge: Does a particular Asian plant grown in America have

the same healing properties as when grown in Asia? Or is it more like its American cousin?

As botanists have known since the 17th century, the plants of eastern North America are closely related to those of eastern Asia. The ginsengs are the best known example of medicinal analog species. Vicariads, a species used for similar medicinal purposes in indigenous North American and Asian medicines, also have been identified. These phenomena provide grounds for a new line of scientific investigation.

An Asian species grown in the U.S. may appear to be within the normal range of variation according to biochemical assays and constituent profiles. However, constituents are only pieces of the structure of a complex, dynamic organism. Independent science has begun to shed the reductionist bias which allowed focus on a single biochemical as the "active ingredient" in an herb. Convergence between new scientific methodology applied to complex natural systems and the holistic worldview held by traditional herbalists may be on the horizon.

If biochemical testing cannot provide all the information needed, another method must measure properties exhibited by plants grown in a particular location. Historically, the Chinese depended upon lengthy individual experience in taste, smell and *qi-sense* to make such evaluations.

Fortunately for AOM and the herb growers, these effects can be quantified. An innovative line of investigation was undertaken in 1998 by the Medicinal Herb Network in Minneapolis/St. Paul, a group of collaborating farmers, AOM practitioners and university researchers. They adapted a food science technique known as "descriptive analysis," a type of organoleptic analysis, to the evaluation of herb quality and began to build a lexicon of descriptive terms for Chinese medicinal herbs. This technique is regarded as key to an evidence-based analysis of the similarities and differences between imported and domestically cultivated herbs, closely related species and herbs grown in different regions.

"The research method works really well when used by practitioners who can discern sensory attributes of herbs that have clinical manifestations. We hope this method will help practitioners take back the skills of discerning herb quality and avoid over-dependence on the claims of manufacturers," said Craig Hassel, professor at the University of Minnesota.

This method applied to Chinese herbs has been in use since 2001. However, more funding is needed to develop the lexicon. For now they are relying on practitioners with good discernment skills.

More Compost Needed

It's hardly a surprise that more funding will fertilize the growth of this science. Although the Minnesota Network and the MHC have received state and federal funding largely through agricultural agencies, the work is constrained by priorities affecting the entire nation. Like our once-extensive railroad system bought with public lands and funds, the agricultural research service has been allowed to decline. Especially for the past 30 years, corporate agribusiness has dominated the agenda at the expense of specialty-crop research. During that time the organic farming movement arose, like the profession of AOM, based only on private initiative without any government support.

Few specialty crops are introduced without the benefit of at least one master's thesis worth of research, which provides both agronomic and economic data. These data enable farmers to assess the effort and corresponding return required to work the crop into their operation, thus minimizing risk to their overall farm profitability. For the Chinese medicinal herbs, very little of this work has

been done here in the U.S., and most of that is due to Newman conservators cooperating with university researchers.

"We need more awareness and advocacy by the American people to change priorities, first at the state level and then at the federal, to get adequate support for specialty crop research," says Charles A. Martin, a researcher based at New Mexico State University's Sustainable Agriculture Science Center in Alcalde. He notes that consumer demand can alter the research agenda. Tangible evidence of demand such as increasing numbers of orders for domestically-grown herbs would help attract funding, both public and private.

"Small-scale farms of the kind we have here in New Mexico are perfect for herb production," according to Martin. "But they need help. Beyond the research, there's training, equipment, organizational support; all this takes funding."

The U.S. Congress' Farm Bill of 2007 did not shift policies, although a few bones were thrown to specialty croppers. However, advocates are mobilizing now for the 2012 Farm Bill. Could the profession of AOM play an important advocacy role during the next five years? Let's start by calling it the "Food and Herbs Bill."

Harvesting the Crops

Practitioners' first question used to be, "Won't these domestic herbs be different?" However, now there's more along the lines of, "How long will this take?" The growers are selling directly to AOM practitioners without waiting for the research to be completed. This is the beginning - measured in plant time, which amounts to decades for some species. The first AOM practitioners to buy MHC herbs are experimenting, sometimes using nontraditional methods such as tinctures.

"The fresh or fresh-dried herbs are so *qi*-full they illuminate the link between the herb's flavors and its medicinal properties," observes Mercy Yule, LAc, former chair of the AOM Alliance Herb Committee. "That's why I'm responding to inquiries at the Local Herbs website. Patients, the profession and the planet will all benefit from this cooperative venture with farmers. Producing our herbs here in the U.S. can reduce our fossil fuel consumption and give farmers a viable crop to grow organically. It's amazing - over 50 quality Chinese herbs are already being grown."

Both practitioners and growers want to learn *pao zhi* (traditional processing) to work with the fresh material. A committee advised by Andy Ellis is working on a practical manual to help with processing. Growers emphasize the need for AOM feedback on quality, how the herb is cut and handled, when it is harvested.

The profession of AOM should assume *de facto* leadership of the scientific process. Like chefs who know food, AOM practitioners know herbs. More important, they know herbs in the context of traditional formulas applied to individual patients and their behaviors, including diets. That holistic framework is the essence of Asian medicine's gift to the world. Positioned at the far side of the paradigm shift, AOM can lead others toward a postmodern future more in harmony with nature.

In due time, AOM and their collaborators (botanists, agriculturalists, conservators) can identify local sources of the myriad qualities prized in plants. After all, nature has endowed us with nearly unimaginable complexity, richness and abundance. She asks only that we respect her and learn discernment.