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Editorial Staff

More Thoughts on "Mathematical Herbal Medicine"

Dear Editor:

Dr. Bob Xu's essay on mathematical herbal medicine in the June issue was both well-articulated and timely. Applied mathematical models of herbs and herbal formulas are on the horizon, and promise to become useful tools for understanding the healing powers of herbs.

Despite the apparent dominance of Western science at present, some specialists in our society are applying a multibody, nonlinear, holistic model of health that is highly relevant to herbal medicine. They are the organic or ecological farmers. As a brief example, let me draw an analogy between compost for the soil and traditional herbal formulas for humans and animals.

Organic farmers have demonstrated many times that a complex, vital substance is required to rebalance a complex living organism. If a single mineral - say, potassium - is added to soil, the effect can destabilize the balance of microorganisms living in the soil such that potassium levels actually decline. Well-made compost, however, corrects imbalances. The efficacy of the compost depends on its freshness, its formulation or combination of ingredients, and the way the ingredients were grown and prepared.

When we abandon magic bullet thinking (agrochemicals or drugs) for the imagery of compost, new possibilities for mathematical modeling arise. For instance, students of herbal medicine recognize that our herbs have strength and directionality in their effect upon the channels - for example, *xuan fu hua* (*inula japonica*), "the only flower that descends." If herbs in a formula each possess force and direction, they can be considered as a system of vectors, interacting with each other and contributing an overall directionality to the whole. In theory, vector field analysis can be applied to an herbal formula. This mathematical tool is being applied in certain areas of Western medicine as well as in sociology and economics.

Our herbs are complex living organisms and possess all the mind-boggling variation that implies. Perhaps we can gauge their effects only through comparative study.

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