

One reason I have always practiced or studied some form of horticulture either as an avocation or a vocation all my life is that I truly believe that plants always have been and always will be critical to existence and human life as God intended it. In past columns, I have written about Ethnobotany, phytonutrients, biotechnology, organic farming, nutraceuticals and the basic healthy attributes of growing plants, whether for fun, relaxation, therapy or consumption.

Recently, I learned of a tree in the Amazon that is in the same family as the beautiful houseplant, Croton, which emits a sap that that can neutralize pain and inflammation or in diluted form can treat diarrhea, gastrointestinal discomfort and ulcers. Investigators under the guidance of Dr. Mark Miller, a professor of pediatrics and cardiovascular sciences at Albany Medical College in New York practiced true Ethnobotany when he found out that the sap acts as an analgesic agent by stopping the activation and stimulation of sensory nerve fibers that send pain signals to the brain.

Brazilian natives have been using a single drop of the sap to treat pain resulting from insect bites, stings, lacerations, burns and even gastrointestinal cancer for hundreds of years. The thick red sap from the rain forest seems to work when applied either externally on the skin or when mixed with water and swallowed to treat gastrointestinal problems.

But what I find even more exciting is the use of plants to develop or “grow” antibodies. Last fall, Dow AgroSciences signed a research and licensing agreement with EPIcyte Pharmaceutical Co. to develop and produce monoclonal antibodies using plants. What a use of biotechnology!! Monoclonal antibodies can be used for disease prevention of human and animal diseases. EPIcyte calls their technology, Plantibodies™.

Currently, antibodies are produced by deriving them from human and animal cell culture and blood products by using chemical and physical separation methods. Plants can prove to be a renewable, more desirable way of obtaining these antibodies while also providing significant cost advantages and scalable production methods. Such methods and products can help protect our food supply as well as humans and animals well into the future. In addition, the implications for such products to meet the needs of developing third world countries is tremendous.

Plants have the potential to provide medicines and vaccines for many fatal human diseases and viruses. Scientists are also using plants as methods of delivering these vaccines in an edible form by incorporating them into plants, vegetables, bananas and potatoes. Plants and agriculture will remain critical to our future as they deliver food, fiber and medicines for our lives. Plants are our greatest natural resource.