

The Future of Agricultural Crops

James Brown*

International Flora Technologies, Ltd., Apache Junction, Arizona 85220

The agricultural institution within countries is being increasingly re-examined by private and public entities due to a variety of economic, social and environmental concerns. Technologies for traditional crop production are being transferred to new, lower-cost production centers. Countries where the crops originate are attempting to remain competitive through crop subsidies, which are losing public support in favor of improved social and environmental programs. While governments and special interest groups struggle with GATT (General Agreement on Trade and Tariffs), NAFTA (North American Free Trade Agreement) and other similar trade negotiations, two other approaches have been suggested as at least partial solutions to the economic dilemma that has evolved within our now global agricultural production and market system.

New industrial products from traditional crops. Creating new value-added industrial products from commodity crops is one approach that has enjoyed some success. Inks and diesel fuel from vegetable oil, ethanol as a fuel additive and biodegradable polymers from corn starch are examples of this approach. The development and eventual marketing of these new products are generally facilitated by the existence of a raw material production system with known and relatively predictable economics. The mission, of course, is to create new value-added industrial products capable of absorbing and supporting traditional crop output without subsidies.

New industrial products from new crops. Another approach is the development of new crops and products from those crops that do not compete with or substitute for products from commodity agricultural crops. Two examples are jojoba as a source of liquid wax esters for industrial purposes, and lesquerella as a raw material for more efficient, nonpetroleum-based lubricants. In most cases this approach calls for starting from ground zero to create a new crop production system, as well as breaking new ground in product and market development.

The Association for the Advancement of Industrial Crops (AAIC). The AAIC is an international, nonprofit, educational and scientific organization striving to be a major educational force for strengthening agriculture worldwide. Its membership is composed of public and private researchers and representatives of commercial entities. Since first organizing in 1989 as the "Guayule Society," membership has grown to more than 200 individuals from 23 countries around the world.

The activities of the society include: (i) encouraging all persons in the development of industrial products from new or conventional agricultural crops; (ii) creating an awareness and use of the latest technological advances in science,

engineering, economics and law for the production, harvesting, storage, processing, marketing, product development and commercialization of industrial crops and products; (iii) stimulating research and development, and dissemination of new knowledge by conducting and sponsoring relevant national and international meetings and conferences; and (iv) providing expert scientific advice and fostering technology transfer and education of the public, industry and policy makers on developments and opportunities for the utilization and commercialization of industrial products from agricultural crops.

Agriculture is strategically vital to the welfare and national security of all people. However, overconcentration and overproduction in a relatively small number of foods and feed crops have created global problems. Clearly, diversification in agriculture is of high priority. Diversification through the development and use of new or alternative crops, and finding new uses for existing crops, offers one of the most promising economic alternatives. Such diversification would greatly assist in the revitalization of the agricultural industry, and stimulate development of new markets and the full economic potential of agriculture globally.

To achieve globally adequate, environmentally sound agricultural production, problems must be solved by the combined efforts of private industry, academia, the agricultural industry, farming communities and policy makers, as well as the consuming public. Urgent needs exist for appropriate cooperation among governments, improved legislation and trade agreements. Adequate funding of private and public research and developmental activities to attain full commercialization of new industrial crops and products is also needed. AAIC is orientated to be a major education force for strengthening agriculture and industry through research and development.

Each year, the AAIC holds an annual meeting where members and invited guests report the results of their research with new industrial crops and products. In 1994 (September 24-28), the AAIC will join the Latin American Jojoba Association in sponsoring the IX International Conference on Jojoba and Its Uses and the III International Conference on New Industrial Crops and Products, to be held in Catamarca, Argentina.

The following papers are a few selected for publication from the 1992 annual meeting of the AAIC, which was held October 4-6 in St. Louis, Missouri. For questions about AAIC membership or the upcoming Conference in 1994, please contact James H. Brown, President, at International Flora Technologies, Ltd. [phone: (602) 983-7909; fax: (602) 982-4183].

*Address correspondence at 2295 S. Coconino Dr., Apache Junction, AZ 85220.