

KENAF AND THE 21ST CENTURY CURRENT DEVELOPMENTS AND TRENDS

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INTRODUCTION

Like the birthing of a child, kenaf's emergence from research into the world of commercialization is a slow and sometimes painful process. Start-up companies have come and gone, product concepts are continually evolving, and research funding and priorities are changing. Keeping up with what's going on can be quite a challenge. Discerning the realities from the myths can be even harder.

Currently, kenaf research funding for most USDA/ARS work has been cut. These cuts come at a time when private businesses and global interests are at an all time high. But this is not the first time kenaf has faced such a challenge. This discussion will cover a brief history of research efforts in the US, some current business activities, and a look at some of the long-range factors which will influence the development of kenaf in the twenty-first century.

Background

US interest in kenaf began in the 1940's when WWII shut off jute imports. Kenaf was identified as a possible substitute for jute.

Then in the 1950's the Department of Agriculture began a study called the "Search for New Fiber Crops." In 1960 the first reports were issued and stated that *"of about 250,000 known species of higher plants, few are cultivated to any extent. This agricultural dependence on a severely limited number of species contributes to our present farm surplus"*(USDA, 1984). Here we are almost 40 years later, and farm surpluses still exist, and farmers are suffering from price levels that are unprofitable,

The earliest reports indicated that, *"with the ever increasing usage of paper and paper products, greater amounts of fast growing sources of raw material will be necessary to supply the expanding pulp and paper industry."* Here we are almost 40 years later and fiber prices, population, and the demand for pulp and paper all continue to grow.

Around 1978, USDA, ARS research and development work on kenaf ceased for an 8-year period. This stoppage was due to shifting priorities, and hydrocarbon research was deemed a higher priority at the time. Although kenaf was exhibiting exceptional potentials as a new crop, and an excellent raw material for paper making, federal budget priorities dictated that resources should be dedicated elsewhere (Kugler, 1988). Now it's 20 years later and we are facing a similar situation.

From 1978 until about 1986, kenaf was essentially dormant as far as USDA research. Then in 1986, an important event occurred that saved kenaf from the scrap heap. Dr. Charles Taylor coordinated the Kenaf Demonstration Project. This public/private partnership effort was created to promote kenaf as a source of fiber for newsprint. The

Kenaf Demonstration Project proved that kenaf was a viable fiber source for making paper. The project actually produced commercially rolls of newsprint, which were sent to different newspapers for real-time use. And because of the success of this effort, interest in kenaf was revived. It is reasonable to suppose that if not for the efforts of Dr. Charles Taylor and the success of the Kenaf Demonstration Project, kenaf would have been relegated to obscurity, and none of us would be here in this room today.

This abbreviated history lesson has a purpose, because we are currently witnessing a similar shift in priorities within USDA/ARS, and this shift impacts the ongoing research and development efforts. More importantly to the American Kenaf Society, many of our members are affected. We have seen severe ARS budget cuts for kenaf research in the past two years. The kenaf-breeding program coordinated by Dr. Charles Cook at Weslaco, Texas was eliminated last year. Texas A&M eliminated kenaf research. The Forest Products Lab, and other programs suffered similar elimination or substantial reduction. Why are these important and relatively small dollar programs being defunded? Because other items are being given a higher priority. Because other interests are pushing their agendas, and because kenaf has no voice in the policy making arena.

Current Developments and Trends

Government research and purchasing

Recent news from the New Uses Council on-line newsletter: *"The Clinton administration's fiscal 2000 federal budget proposal for U.S. Department of Agriculture spending earmarks both new uses and biofuels for substantial changes. Under the proposed White House budget, the Agricultural Research Service would have \$8 million dollars less to spend on new uses work, and \$1 million less for biofuels. While overall spending is scheduled to increase, from \$843 million in 1998 to \$901 million in 2000, most of the increase is slated for food production, food safety, pest management, and environmental quality. ARS spending for new uses is proposed to be cut by \$8 million."*(Harsch, 1999).

So the White House can not be considered friendly to kenaf, yet. In fact, in September of 1998 the White House issued Executive Order 13101, which covers environmentally preferable purchasing by the government. This Executive Order dictates the type of paper government must buy. Despite the efforts of USDA/AARC and others, kenaf content paper, or even nonwood content paper is not included under the definitions of environmentally preferable paper. Efforts were made to include language that encompassed the concept, but more powerful influences prevailed. Specifically, the existing industry groups involved in pulp, paper and packaging influenced the language to meet their existing processes and practices. This phenomenon is very similar to how policy gets shaped for ARS research priorities.

But the White House does not have final say on the budget, and the input of Congress is very important to the final budget agreement. If Congressmen and Senators want kenaf research work to be included, then the New Crops, New Uses funding could be restored, or even increased. But how can we expect Congress to support kenaf when they don't even know what it is? We must all work to educate them about the crop and its benefits, and that is an important role for the American Kenaf Society to fill.

According to the latest New Uses Council news release *"The ARS research priorities are genetics, emerging plant and animal diseases, food safety, biological pest control, sustainable ecosystems, and global change."* And while the total ARS budget for 2001 will increase, \$35 million of that increase is funded from savings from termination of lower priority projects. Clearly, with no voice in Washington, kenaf is a lower priority project.

The more positive news is that the AARC Corporation funding is being increased from \$4 million in 1999 to \$10 million in 2000. This program was on the brink of de-funding in 1998, but has obtained a much more positive position for the future. AARC is the Alternative Agricultural Research and Commercialization Corporation. AARC makes equity investments in rural businesses to assist in the technological development and commercialization of industrial (non-food, non-feed) uses for agricultural and forestry materials and animal by-products.

Further on the positive news front is the establishment of the Biobased Products Coordination Council (Kugler, 1999). Sec. Glickman, head of the Department of Agriculture instructed the Department to create this (BBPC) council to promote products based on plant based materials. This council is reflective of a push by Government to bring more biobased products into the market verses non-renewables. The BBPC is formulating initiatives for the 2001 budget cycle.

What are bio-based products and more importantly, how do they relate to kenaf? Biobased Products are not petroleum, and not related to mining metals or chemical elements. Biobased Products are made from raw materials that grow, mostly on the farm, but sometimes in the forest. In regards to paper, trees are a biobased raw material, so tree based paper fits the definition of biobased, however, tree fiber does not meet the intent of the Executive Order or the Biobased Products Council.

The Executive Order states that government should favor products that are "Environmentally Preferable, " and defines Environmentally Preferable as "products or services that have a lesser or reduced effect on human health and the environment when compared to competing products or services that serve the same purpose."

So the question is, "how will these new programs benefit kenaf?" And more specifically, how will they affect funding for ARS and other research efforts? Again, that is where the American Kenaf Society comes in. We have got to effectively convey the benefits of kenaf in a way that reaches policy makers in Washington, DC.

Kenaf meets the intent of environmentally preferable and kenaf paper is a Biobased Product. We have got to effectively convey that kenaf; 1) requires less energy and chemicals to convert to pulp, 2) protects the environment by reducing the demand for trees in paper-making, 3) is fully compatible with recycling, 4) is grown using fewer chemicals than most other crops, 5) absorbs CO₂ faster than trees, 6) creates jobs in economically depressed rural areas, 7) is a new crop which can help reduce surpluses of commodity crops, and 8) provides additional benefits in paper and non-paper products.

If we can effectively convey these benefits, we might be able to realize restoration of funding to ARS and other areas.

Industry and Global Influences

Public awareness about kenaf and nonwood or tree-free paper is growing. A recent University of Delaware market survey indicated that nearly 20% of State purchasing agents knew that tree-free paper existed as an option. Additionally, the government purchasing effort to buy environmentally preferable products is further increasing the exposure for kenaf paper.

Larger companies are taking an interest in kenaf because of the increased public awareness. Monsanto and International Paper are both represented at this conference. Crown Vantage and Crane Paper have both produced papers containing kenaf in the last year.

The kenaf industry in the US is growing. A core group of companies have been selling kenaf-based products and somehow surviving for more than five years. These companies include KP Products Inc. doing business as Vision Paper, Kenaf International, ANAKL, DBM Farms, and the Delta Fiber operation. There are also a number of newer companies striving to make a go of kenaf related business in the US.

International Interest

In the pulp and paper industry, the subject of rising raw material costs and potential fiber shortages receives much attention recently. While there is debate on the short and long term impacts of projected shortages, there is no debate that the demand for fiber continues to increase, and the cost of fiber is rising consistently. Partly in response to this trend, kenaf projects are being formulated in Italy, Japan, Mexico, Brazil, Thailand, and other locations around the world.

In Spain, kenaf has been grown and commercially pulped, and is being investigated for further development. Recently Kafus has announced a major kenaf development project in Spain including paper, panelboard and bio-composites.

Kenaf activity in Japan is substantial. I had the honor of being invited to speak to the High Performance Paper Society of Japan last October. During the trip I met with a few pulp and paper companies, and got to know the Japan Kenaf Association, and the Nonwood Paper Promotion Association. Both groups promote kenaf, albeit in different ways, and for different reasons. The Japan Kenaf Association is much like this group (AKS), in that it consists of the technical and scientific community. The Nonwood Paper Promotion Association is an industry group, promoting the use of kenaf to corporations and paper companies. Between these two groups, a higher level of kenaf use and awareness has been created, but like here in the US, the percentage of overall kenaf use is small in comparison to tree fiber.

In Japan, over 1,000 schools are involved with growing kenaf and making paper from it.

Once those children grow up, they will understand the benefits of kenaf and will prefer paper products that contain it.

Also in Japan, nearly half of the paper companies use or have used kenaf in some of their products. While still relatively small regarding the percentage of overall production, this willingness to investigate and utilize kenaf is remarkably different than in the U.S. where only a handful of paper companies have experience with paper making from kenaf, and only two companies regularly market a kenaf content product. This difference is due mainly to the fact that Japan lacks the abundant tree fiber resources that we have here in the US. They import much of their fiber, and are open to any fiber source, as long as it delivers adequate functionality at a competitive price. Contrast that profile with the US industry, which owns timberlands and timber extraction equipment to a larger degree.

CONCLUSIONS

Given global population growth rates and the resulting increase in demand for paper, the long-term prospects for kenaf are bright. Wood prices are continually rising with no reversal being forecast. In contrast, kenaf economics continue to improve, with new high yielding varieties being released and more efficient processes being developed. It seems inevitable that kenaf will eventually attain large-scale commercial success as a raw material for industry. The question is when. My goal is to make it happen sooner, rather than later. Increasing the public awareness and promoting the sales of kenaf products within the governments purchasing are important steps to support the industry in its infant stages. While government research and development support is important, the private sector plays the critical role in promoting kenaf. It is incumbent upon the private sector to persevere in their efforts to move kenaf from research to commercialization.

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