

# Inside aloe: using aloe in nutraceutical applications seems like a natural progression for the ingredient, but aloe makers must resolve some challenges before fully developing this market.

 Nutraceuticals World; 5/1/2006; Wright, Rebecca

Over the years, aloe vera, still an enormously popular ingredient in cosmetics and lotions, has been working its way toward the food, beverage and supplement markets. Currently, the total market for aloe products is worth approximately \$200 million worldwide, according to estimates from the International Aloe Science Council (IASC), Irving, TX. These days, however, industry experts claim the oral consumption of aloe far outpaces its use in topical applications, particularly in terms of volume. Perhaps this is because it is suggested that adults consume 2-4 ounces of aloe vera per day in order to reap its health benefits (aloe-vera.org).

[ILLUSTRATION OMITTED]

The Natural Marketing Institute (NMI), Harleysville, PA, indicates that 16% of consumers use aloe daily, 11% use it two to six times per week and 13% use it once a week. An overwhelming majority of consumers, however, only use aloe when they need it. NMI claims the top reasons consumers use aloe include: to treat/manage a specific medical condition or health problem (46%); to feel better (34%); to promote health (33%); and to maintain health (32%). (These figures were sourced from NMI's Supplements/OTC/Rx Database.)

This is all good news for aloe suppliers who are witnessing little to no growth in the personal care sector. But as aloe finds its new place in supplement, food and beverage products, manufacturers will have their hands full with new opportunities and challenges.

## Hailing the Health Benefits

Most aloe products on the market today claim to remedy everything from immune dysfunction to gut health issues to skin irritation problems--from the inside out. About the former, Bill Pine, vice president, Sales & Marketing, Improve USA, Inc., DeSoto, TX, offered his perspective. "The large polysaccharides (polymannans) in aloe have been shown to support the immune system because the body itself contains a large amount of mannans," he said. "The introduction of these polymannans to the body through the consumption of aloe products helps it react positively to various insults on the immune system. In short, aloe puts the immune system on alert."

Most recently, according to Ken Jones, chief science officer, Aloecorp, Lacey, WA, several human clinical studies have shown that supplemental aloe may also help regulate blood

glucose levels. "These studies showed that patients with type II diabetes were positively affected by adding aloe to their diets," he said. "In fact, they saw marked improvement in maintaining healthy blood glucose levels. Some of these studies also showed a reduction in blood lipids and an improved ratio of HDL:LDL."

Mr. Jones says while these results may seem surprising, it is important to remember that aloe has been used, as have many other herbs, as a natural remedy for diabetes for many years.

One health area that has not been studied clinically but in theory could be an application for aloe is in the area of skin health. "Aloe's benefit in skin health has not been documented yet in clinical studies, but it makes sense to include it in products designed for internal use for appearance benefits," said Mr. Pine, adding, "The idea being that aloe heals the body from within and through that benefit will produce healthier looking skin."

There are some definite possibilities of researching aloe in a clinical setting to determine its skin health benefits. In fact, Mr. Pine claims there is an entity currently looking into a doing a study for this specific application.

Other recent studies on aloe are focusing on its use in improving the bioavailability of certain nutrients. One notable study, conducted by Joe Vinson at the University of Scranton a few years ago, examined the effect of taking vitamin E and C along with aloe to determine if the vitamins were better absorbed in the presence of aloe, compared to taking the nutrients with water. It was concluded that aloe vera both slowed the absorption of vitamins C and E and improved their bioavailability by 300%. This study was significant in the aloe field because it was concluded for the first time that aloe is the only known supplement to increase the bioavailability of these nutrients and therefore should be considered a complement to them.

The researchers involved in the University of Scranton study have already initiated a follow-up trial with more patients to determine the bioavailability of other nutrients when taken in conjunction with aloe. This new study will test aloe's absorption capabilities on vitamin C and B12. Gene Hale, executive director, IASC, offered more details. "This new bioavailability study will investigate the relative absorption of these nutrients in the presence of aloe vera in 40 subjects," he said. "The results are expected in September."

As a result of the bioavailability study, Aloecorp's Mr. Jones says there are currently several products in pre-production based on those results.

### Expanding Aloe's Sphere of Influence

Europe and Asia, it seems, have been a lot more progressive on the aloe consumption front, experimenting with delivery systems like yogurts and yogurt drinks. With regard to the latter, Tetra Pak recently partnered with China-based Bright Dairy & Food, the fourth largest dairy company in the country, to launch a yogurt drink geared toward women with "hectic lives that want to stay healthy." The product, Aloe Vera SPA, eliminates toxins from the body, according to the company.

Unique product developments like these in the U.S., however, have yet to take hold. Perhaps this is because the awareness of aloe as an ingredient for internal benefits is not quite what it is for topical applications. "Aloe may be a victim of its own fame as a cosmetic ingredient," Wayne McCune, senior vice president of sales and marketing, Aloecorp, confirmed. "The internal consumption of aloe is a trend that most people are not aware of and the ones that are don't see a huge amount of science to support its efficacy for internal use."

He continued, "The promotion of aloe drinks in the direct selling channel, however, has really helped foster huge growth and awareness. But as a company, we feel a need to boost the awareness AND support the clinical studies to help build a stronger foundation for aloe and health."

Improve's Mr. Pine sees the aloe market growing rapidly over the next several years, as the benefits attributed to the consumption of aloe become clearer to consumers. He says the market already has a head start in the fact that aloe is one of the most recognized nutrients in the marketplace. "Now there just needs to be some educational efforts deployed to convey the health benefits of aloe's internal use," he said.

IASC's Mr. Hale agreed. "The awareness of aloe as having a benefit when taken internally is certainly in rapid growth mode. In fact, I think as much as 60% of consumers are aware that you can drink aloe, although the awareness is much higher in specialty outlets like natural foods stores."

### Challenges to Consider

Unfortunately, adulteration is still a widespread issue in the aloe industry today, according to Jim Gambino, executive vice president and general manager, Terry Laboratories, Melbourne, FL. In many cases, he says, companies are using fillers or cornstarch in their raw materials or finished products and then passing them off as pure aloe vera products. "At Terry Labs we do a variety of tests to determine the purity of aloe vera. Of the samples that we test every week, about 75% of them are adulterated," he said, adding, "and it would make sense to me that this is the case for the entire market."

Mr. Gambino offered an example to help illustrate the adulteration issue. "We have come across '200x' powder samples that legally are supposed to have 100% aloe vera," he said. "But when we test these 200x products we aren't finding 5-10% filler, we are actually finding 90% filler!"

Another challenge is the amount of companies, large and small, using aloe in their products just to get label claim. Many aloe experts agree that having very large companies with a lot of presence in the market put aloe on their labels is both a blessing and a curse. "Many of the products on the market today will claim 'with aloe' on the label," said IASC's Mr. Hale. "Basically what this means is a very small percentage (about 1%) of the product actually contains aloe vera. This is certainly a challenge in the market because most suppliers of raw materials really have no control over how companies choose to use the aloe or how much they use in products."

Due to abuse in the representation of the true amount of aloe in products, either with raw materials or in consumer products, the IASC formulated a plan similar to the Good Housekeeping Seal of Approval. Building on a testing concept designed by member companies, the IASC developed a certification program to allow aloe growers, processors and manufacturers to submit their facilities and products to a series of rigorous tests and audit programs, which, if they passed, would allow for the certification of aloe and aloe products and the display of the IASC authorized Seal of Certification on all products and literature. To do its part in remedying label claim issues, IASC will not certify products that contain less than 15% aloe vera.

Mr. Gambino claims huge companies like Wal-Mart are putting tremendous pressures on companies that are private labeling products for their stores. As a result, he says the private label companies have no choice but to bow to that pressure and purchase the cheapest materials in order to retain the Wal-Mart business. The problem is the cheapest aloe vera products are more than likely adulterated. Along the same lines, these large companies are also including a sparse amount of aloe vera in products.

Given the pervasive nature of these issues within the aloe industry, Mr. Gambino offered this advice: "Trust no one. Companies should have their material analyzed independently by a third party that uses an approved methodology for content and purity," he said. "It holds more weight to not only test your own material in-house, but to also have it analyzed by an independent third party. I would like to see more companies doing these kinds of things."

#### All for One and One for All

The IASC was formed in the 1980s as a non-profit trade organization to cater to the needs of the aloe market worldwide. Its membership includes aloe growers, processors, finished goods manufacturers, marketing companies, insurance companies, equipment suppliers, printers, sales organizations, physicians, scientists and researchers. Its mission is to serve as a liaison and information source for the research, development and promotion of aloe vera and associated products.

IASC is crucial to the self-regulation of the aloe industry. While many aloe experts are careful to say that the system is not perfect, they do say it puts in place minimum requirements for companies so that everyone "is on the same page."

The point of IASC is to provide some quality benchmarks, so consumers can be assured they are buying products that are worth their money. Several years ago the group came together and decided to issue a seal for products that meet certain standards for safety and quality. Those products that are certified by IASC are allowed to carry the IASC Seal of Certification.

"I believe the role of IASC is very important to the growth and progress of the entire aloe industry," said Improve's Mr. Pine. "Further, its seal of approval is key to the promotion of quality. Both membership and IASC certifications are way up, which is a testament to its importance and success."

The IASC is a good example of how an organization can bring competitors and customers together in one place to work for the common good. With the exception of the omega 3 ingredient segment, and few others, this model is seldom utilized in the dietary supplement industry. The various ingredient segments within the dietary supplement industry could learn some valuable lessons from these examples. It seems ingredient companies that serve a particular segment, whether it be glucosamine, calcium or vitamin E, could benefit greatly from the combined efforts of many companies to support important endeavors like research, education and standardization.

By Rebecca Wright