



# The Pollen Press

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## FUTURE ISSUES:

Beverage Ingredient Testing

## UPCOMING EVENTS:

SupplySide East  
May 2nd-4th  
Secaucus, NJ  
Booth # 1543

Vitafoods Europe  
May 10th-12th  
Geneva, Switzerland  
Booth # 221

CPhI South America  
August 24th-26th  
Sao Paulo, Brazil  
Booth # A35

## QAI Organic Processing Approved

In an effort to diversify Graminex's processing capabilities we have recently achieved QAI Certified Organic Processing. This certification is done through Quality Assurance International, a company that certifies manufacturing processes and finished agricultural products as organic. QAI certification proves that Graminex is abiding by the rules and regulations of the NOP (National Organic Program) as determined by the USDA. Graminex has taken the step to certify our manufacturing facility, in order to allow us to process organic materials in our facility.

The QAI certification process includes every manufacturing step conducted during the processing of raw materials. This includes how we handle, process, store, test, package, ship, clean and label our products. Although the regulations are similar to cGMP there are some differences particular to the NOP regulations that we had to follow.

As demands for organic products increase, Graminex will be prepared to meet market demands at the facility in Ohio. Graminex will be able to add these organic products to its inventory at any time based on customer needs. By certifying the entire facility it also allows Graminex to sell organic products at any level necessary. This includes bulk powders, bulk tablets and capsules, and finished bottled product displaying the organic logos and certifications. Graminex is proud to have achieved this certification and looks forward to expanding their product lines in the future.



## Manufacturing Facility Energy Study



Graminex has begun working on a new study with CIFT members (Center for Innovative Food Technology) in order to analyze the energy consumption at the manufacturing facility in Deshler, Ohio. Graminex has worked with CIFT in

the past for assistance with conducting crop research and specialized R&D projects. More recently, funding became available to look at reducing energy costs in food manufacturing facilities across Ohio.

This project involves an audit of every piece of equipment in the facility that expends energy to find out its exact consumption during manufactur-

ing. The audit will look at both the electric and gas consumption on a monthly basis for the entire facility, especially focusing around major activities that take place. For Graminex this would be during our harvest season and pollen processing. The ultimate goal is to reduce electric and gas consumption during our peak usage times.

Graminex believes that it is always important to try and reduce energy consumption when possible. It is the responsibility of manufacturers to try and find more energy efficient ways of processing their materials. With help from CIFT, Graminex will be able to have a better understanding of how to make our processing more green. Also by doing this we are able to neutralize rising energy prices. Graminex always strives to provide our quality Flower Pollen Extracts in the most energy efficient way possible.

# Pangenine® LI6: A New Pollen for Cosmetics



Graminex, in close cooperation with its partner Principium, is happy to announce a new product especially developed for the cosmetic industry called Pangenine® LI6. Principium first revealed this product at in-cosmetics Milan in March. Pangenine® LI6 will be further presented by Graminex at Vitafoods Europe in Geneva during May. At this show Graminex will be sharing the booth space 221 with Principium to jointly announce the new cosmetic ingredient and explain the benefits for the cosmetic industry.

Pangenine® LI6 is created from a completely unique manufacturing process designed to isolate the water soluble portion of the flower pollen. This process allows Pangenine® LI6 to be a superior natural active ingredient with a high level of purity and efficacy targeting skin applications. Also, the advances in manufacturing allow it to be readily added to any cosmetic formula. Based on experiences in the food and pharmaceutical manufacturing processes with flower pollen, at Graminex we have been able to develop a new process that allows for the isolation of the nutrients from flower pollen. This process eliminates the protective outer shell of the pollen grain, therefore removing all the allergens from the product. Graminex's new cosmetic manufacturing and production process remains solvent free and organic.

Pangenine® LI6, the resulting extract, is a perfect active ingredient for natural cosmetic formulas. Its characteristics include: complete water solubility, light in color, light flower

scent, free from preservatives and perfect formulation properties. This ingredient contains a rich blend of actives vital to developing new life. On a daily basis, these building blocks of nature energize the skin and protect it from external aggressors. This includes the pollution, UV radiation and other chronic inflammatory factors our skin is exposed to every day.

Graminex's partner Principium is a Swiss company that specializes in product development for the cosmetic industry with a new approach towards efficacious products. Their research and development department integrates a sophisticated network of specialists in different fields of study dedicated to conducting studies on newly developed active ingredients. By utilizing leading safe technologies they have been able to develop Pangenine® LI6 to the highest spectrum of activity seen for Flower Pollen Extracts in cosmetic formulas. With a greater expression of targeted activity against chronic, long-term aging, Pangenine® LI6 is a remarkable advance in Flower Pollen Technology.

Pangenine® LI6	
<b>Characteristics</b>	
INCI Name:	Pollen Extract
Appearance:	Fine Powder
Color:	Fairly dark beige
Odor:	Hay-like
Solubility:	Perfectly water soluble
<b>Applications</b>	
Dosage:	0.3-1.0% 0.5% Recommended
Suitable in:	Emulsions, Creams Lotions, Gels
Applied in:	Anti-aging formulas Re-energizing formulas Skin-nutrition formulas Stressed skin formulas

Prior to launching Pangenine® LI6 into the cosmetic market, Principium has completed a series of tests designed to show exactly how the active ingredient is effective at stopping the signs of chronic, long-term aging. Test results have demonstrated that daily cosmetic applications are able to re-energize the cells, especially through mitochondria activity, allowing a reduction in the visible marks linked to day-to-day aging. Pangenine® LI6 is rich in co-enzymes, vitamins and oligo-elements like calcium, which

all help the skin's metabolism prevent the consequences of the aging process.

Principium has conducted many studies demonstrating safety and efficacy of Pangenine® LI6. Safety tests included evaluations demonstrating the absence of skin irritation, eye irritation and skin cell cytotoxicity in conformity with European legislation and US FD&C Act, eliminating testing on animals. Testing also includes results demonstrating Pangenine® LI6 is free from allergens, preservatives, pesticides and solvents. New efficacy studies conducted in-vitro show activation of dormant mitochondria in skin cells. Pangenine® LI6 helps prevent skin aging by modulating the level of lipoperoxidation in cells submitted to a chronic stress. Lipoperoxidation is a process in which free radicals actively take electrons from lipids found in cell membranes, causing the deterioration of the skin cells. Pangenine® LI6 also displayed the capacity to regulate the physiological release of cytokines (IL1a, IL1b, IL6, TNFa) from skin cells during times of chronic stress.

For more information about Pangenine® LI6, exclusively available from our partner Principium, and the science behind the active ingredient please contact Julien Janson with Principium at [j.janson@principium-bsi.com](mailto:j.janson@principium-bsi.com) or Colleen May with Graminex at [bugs@graminex.com](mailto:bugs@graminex.com). Graminex looks forward to the expansion of our production for Pangenine® LI6, and an increase in Flower Pollen Extract's presence in the cosmetic ingredient market.

## NutraCos Article

Graminex has recently submitted an article about Graminex G63™ Flower Pollen Extract and its effect on the liver. This article looks at the liver damage that occurs due to various intoxications and how G63™ is able to help reduce or help eliminate liver damage from occurring. Clinical studies are referenced that include in vivo and in vitro studies completed using Flower Pollen Extracts. A link to the article will be posted on our homepage as soon as it becomes available. Please contact Colleen May at [bugs@graminex.com](mailto:bugs@graminex.com) for further information regarding this article and the different liver applications for Graminex G63™.

# Wellness News: Bottled vs. Tap Water

Something as simple as what type of water you drink is actually a complex decision. We all know that we should drink as much water as possible, but how do we balance cost, convenience and safety? Ultimately you may find your solution is combination of bottled and tap water. In the US tap and bottled water are regulated differently and there are many differences in the two water sources. Bottled water has become a large business, estimated at 60 billion dollars worldwide annually and more than 115 million liters in 2006.<sup>1</sup> Bottled water is far more costly than municipal water almost world-wide, with the average bottled water in the US costing \$0.90/gallon. For comparison, in Deshler, Ohio municipal water costs about \$0.016/gallon including all your local disposal fees.

Bottled water consumption is mainly due to concerns about tap water contamination and the day-to-day convenience of having bottles of water. As people become more mobile it is easier to carry bottled water. Many studies have been conducted looking at both waters to determine if in fact one is better than the other and to look at potential contaminations in both. In order to make a decision about whether you will drink bottled water or tap water, there are a number of factors you should consider.

First of all you should look at where your water is sourced from. For tap water the source is normally some sort of drainage basin, like a river, lake, stream or man made reservoir. In some areas underground aquifers may be tapped into. After this the water is sent to a water purification facility before it is sent to consumers. The purification involves a complex series of filters and chemical processes to remove any contaminants. Once purification has taken place the EPA (Environmental Protection Agency) regulates what tests must be con-

ducted on the water and how often. Bottled water is not required to disclose the source on their packaging. Sources range from artesian water, mineral water, purified water and spring water.<sup>2</sup> The only regulation for labeling is that manufactures may not declare purified tap water as natural spring water. Bottled water may also come from different municipalities across the nation, depending on the location of the brand's bottling facility. This water is basically treated or sent through a purification process prior to bottling. Bottled water manufacturers are regulated by the FDA (Food and Drug Association) if the product is shipped nation wide and by state and local authorities if the water is only sold within the state borders.

Below is a table that summarizes the key differences in the EPA and FDA regulations for water supplies according to the National Resources Defense Council.<sup>3</sup> This shows that while bottling companies may be getting water from a clean and pure source, they are much less regulated with testing and purification. The bacteria testing that occurs for tap water includes testing for *E. coli* and different fecal coliform, while the viral testing includes tests for *Cryptosporidium* and *Giardia*. There is no data to say that bottled water contains these contaminants or is more susceptible to contamination, only that it is not required to conduct these tests. Differences in the two sets of regulations create an issue with consistency in consumer awareness.

In addition to the concerns with contamination there is now an increase in publicity about the environmental impact bottled water is making. There is millions of water bottles put into landfills, with only a small portion being recycled. The bottles used are most often plastic and some may leach chemicals into the water or add a poor taste to the water over time. Other

bottle materials are much more stable, but are more costly. Also for bottled water manufacturing companies that sell purified tap water, often times there are at-home purification apparatus' that do the same thing.

When considering tap water, consumers must also look at the levels of fluorination. Mass fluorination of water has been historically an American idea in order to prevent tooth decay in the population. There have been obvious trends showing improved dental health in children over this time period. There are alternatives such as fluoride treatments from a dentist or special toothpastes with increased amounts of fluoride. This controversial issue has turned many people to bottled water, which is mostly free of fluoride unless labeled otherwise. There are also water purification devices for at home that remove fluoride and other elements from tap water. If you rely mainly on bottled water, you should tell your dentist and ask for a different form of fluoride treatment.

When making a decision about what type of water you and your family will rely on, make sure that you have all the information you need in regards to the various sources and testing that is conducted. It may be difficult to receive data from some bottled water manufacturers, but your local municipality will provide you with data and tests regarding your water source. No matter what you decide, remember that water should be drank frequently all day long.

1. King, Mike, Bottled Water - Global Industry Guide. PR-inside.com.
2. <http://www.fda.gov/Food/FoodSafety/Product-SpecificInformation/BottledWaterCarbonatedSoftDrinks/ucm077079.htm>
3. [www.nrdc.org/water/drinking/bw/table1.html](http://www.nrdc.org/water/drinking/bw/table1.html)

Water Type	Disinfection Required	Testing frequency for bacteria	Must filter to remove pathogens	Must test for viruses	Testing frequency for synthetic organic chemicals	Must use certified lab for testing	Must report violations to state, feds	Consumer right to know about contamination
Bottled Water	No	1/week	No	No	1/year	No	No	No
Carbonated Water	No	None	No	No	None	No	No	No
Big City Water	Yes	Hundreds/month	Yes	Yes	1/quarter	Yes	Yes	Yes
Small Town Water	Yes, if needed	20/month	No, unless surface contaminants	No	1/quarter	Yes	Yes	Yes

Summary table showing differences in regulations for tap water (EPA) and bottled water (FDA).

## Red Clover Extract

Over the last two years Graminex has been conducting research on developing a new red clover product in collaboration with The Ohio State University, Sensus and CIFT. This research primarily focuses on an entirely new manufacturing and processing method for red clover. These new methods will allow Graminex to manufacture a supply of higher grade red clover extract that is not currently available in the market. Along with the new manufacturing processes, Graminex is also working to provide the documentation necessary to support the product in the marketplace, as well as to meet the demands of various foreign and domestic health authorities for the extract.

Red clover extract is primarily used throughout the nutraceutical industry for helping alleviate menopause symptoms due to higher levels of isoflavones and certain phyosterols that act similar to estrogen. It is also recognized for higher levels of antioxidants, which are useful in fighting free radicals. One of the biggest concerns for consumers using red clover extract is that often times the manufacturing of red clover extract changes from year to year due to weather, lack of control points and it is not always produced in a cGMP certified facility. These production issues ultimately create



an extract that is not a standardized product. Without standardization, the final retail products change with each batch, allowing alterations in the effectiveness.

## 2011 Tradeshows and Exhibitions

Graminex will be exhibiting in a new trade-show booth this year begin at Supply Side East in Secaucus, New Jersey. The new booth will highlight Graminex's different raw ingredients and finished goods. This booth will be used mostly for domestic shows but also for a few international exhibitions. Graminex has numerous tradeshows scheduled in this calendar year, including two new ones.

We would like to invite everyone to stop by the new booth at one of the shows listed and see what new products Graminex has to offer.

During the final product development process Graminex will work to develop a validated standardization method that will create a specification for red clover extract to ensure the same quality from batch to batch. This extract will be manufactured with full compliance with cGMP regulations and to the highest quality manufacturing standards Graminex holds all of its production to. We look forward to finalizing the research and development aspect of this product this year and a finished red clover extract product launch soon to follow.



May 2-4, 2011 Secaucus, NJ



May 10-12, 2011 Geneva, Switzerland



August 24-26, 2011 Sao Paulo, Brazil



September 7-9, 2011 Hong Kong



October 10-14, 2011 Las Vegas, NV

## Employee Corner



**Jessica Tietje**  
Quality Control Department

This quarter's spotlight employee is Jessica Tietje. Jessica's main job position is in Graminex's quality control department. She began working for Graminex during our pollen harvest in 2009. Jessica is currently attending Defiance College in Ohio working on her Bachelor of Science Degree in Wellness and Corporate Fitness. She will graduate in one more year with her degree.

In the quality control department Jessica assists with reviewing all product tests results, creating specification sheets and compiling the necessary documents required by different health

authorities around the world. During her summers at Graminex she helps out at harvest with quality operations and assists with parts of the manufacturing process. She also helps out with the bottling operations when needed.

In addition to her quality duties, Jessica attends tradeshows for Graminex and acts as a sales representative. She is very knowledgeable about human nutrition and wellness. Everyone at Graminex looks forward to working with Jessica and her becoming part of the full time quality team in the future.