



The Pollen Press

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VOLUME III, ISSUE 4

DECEMBER 2010

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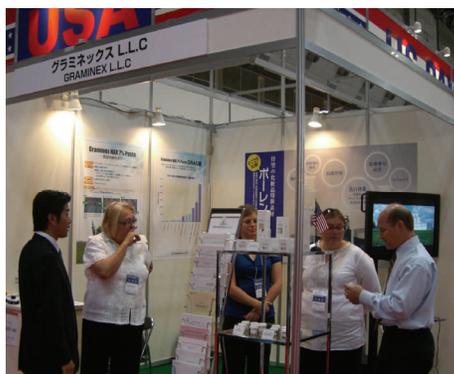
SupplySide East
May 2nd-4th
Secaucus, NJ
Booth # 1543

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

Healthy Ingredients Japan 2010

Healthy Ingredients Japan is a large international tradeshow focusing on raw ingredients for use in the dietary supplement, food and beverage, cosmetic and pharmaceutical industries. Hi Japan is constantly changing and evolving with market trends in the health and beauty industry. This year there was an increase in attendance by representatives from the cosmetic and functional food industries.

Representatives from Graminex LLC, Cynthia May, Heather May and Colleen May, attended the show to support Graminex Japan. Graminex Japan was represented by Mr. Kazuhito Muronaka and Ms. Ena

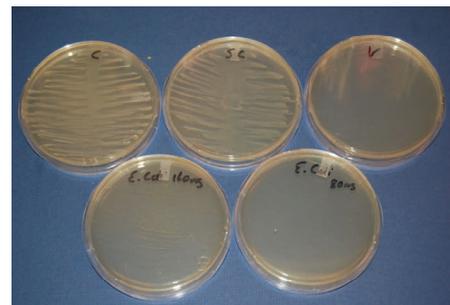


Muronaka. Graminex Japan's booth was located in the US Pavilion and received a lot of traffic. The booth focused on Flower Pollen Extracts™ for use in the cosmetic industry. Mr. Muronaka arranged for a seminar to be given to attendees by Cynthia May about what Flower Pollen Extract™ is and the different applications in the cosmetic industry for Graminex G60™ and NAX™ 7% Paste. The seminar had a high attendance with many follow-up meetings.

Graminex would like to thank Mr. Kazuhito Muronaka and Ms. Ena Muronaka for all of their hard work in making this show a success. We believe Hi Japan went very well this year. We look forward to working with Graminex Japan in the future and expanding the Japanese market.

Antimicrobial Effects of NAX™ 7% Paste

Graminex has begun a study focusing on the antimicrobial effects of NAX™ 7% Paste against different pathogens. These studies are being completed with Georgetown University by Dr. Harry Preuss. Preliminary results have shown that the NAX™ 7% Paste is effective against a number of pathogens including E. coli and H. pylori. These studies are now being expanding to include more pathogens and different concentrations of the NAX™ 7% Paste. According to Justin Ritter, "The studies on the antimicrobial effects of NAX™ 7% Paste are an exciting new development in the research behind our product." Graminex is looking forward to the new applications and markets that this study will open up for Flower Pollen Extract™. Full results will be available as soon as the study is completed sometime in early 2011. For more information about this study please contact Justin Ritter, jritter@graminex.com or (419) 278-1023.



Test results with *Escherichia coli* where bottom two dishes show NAX™ 7% and top right is a known antibiotic.

Graminex G60™ and NAX™ 7% in Cosmetics

The primary aim of skincare products is to improve the appearance of the skin externally. The most important measure is prophylactic therapy used against the premature aging of the skin. The two components of the skin that are most involved in premature aging are the epidermis and collagen. The epidermis, with the stratum corneum as its external layer, is made up of layers with different functions, all of which contribute to overall skin function. The keratinization of the epidermis is an extremely complicated hormone-dependent process, which is already apparent in the deep epidermal layers. This process begins with the normal formation of keratin and proceeds to its ultimate shedding on the surface of the skin. Metabolic factors often disturb this process. These factors are generated mainly due to external mechanical and chemico-physical influences, meaning chemical and physical attributes of the skin acting in combination. Possible “therapeutic” treatments are in areas of transformation, where the epidermal cells are converted into keratin and in the epidermal cells of the germ layer, during mitotic activity.

Collagen is the main component of the connective tissue and contributes significantly to the skin's elasticity and firmness. The soluble collagen has an effect on the water-binding property of the skin. This ability to bind water is responsible for the skin's normal turgor and tone. Synthesis of soluble collagen molecules is decreased as the skin ages. At the same time there is an increase in the development of intermolecular and intramolecular bonding, creating insoluble collagen. This leads to a slackening of the skin.

From a skincare perspective the therapeutic approach is two-fold. First in order to inhibit the aging of the skin, you must slow the development of the intermolecular and intramolecular binding. Second you must increase the rate of soluble collagen synthesis by feed-back mechanisms and by reducing the breakdown of native, un-reticulated collagen, or collagen that has not been bound or networked.

Graminex Flower Pollen Extracts™ are beneficial ingredients for cosmetic applica-

tions. They are very high in antioxidants and phytosterols. Two unique products are used for formulating cosmetics: Graminex G60™ and Graminex NAX™ 7% Paste.



Graminex G60: water soluble portion of Flower Pollen Extract



Graminex NAX 7% Paste: lipid soluble portion of Flower Pollen Extract

The active compounds in Graminex Flower Pollen Extract™ relevant to skincare belong to the following groups:

Vitamins	Provitamins
Amino Acids	Sugars
Polysaccharides	Sterols
Fatty Acids	Enzymes

Vitamin A increases the resistance of the skin and normalizes disturbances of keratinization and extremely dry skin. During cell formation, it has an indirect thickening effect on the epidermis by increasing the mitotic activity. Vitamin A intervenes in the maintenance of epithelial cell function, promoting the epithelization, or the covering of damaged skin tissue with new epithelium. It also prevents skin cells from drying-out.

Vitamin B complex with riboflavin and pyridoxine normalizes the overproduction of fat by the sebaceous glands that is commonly associated with acne and other skin problems. This complex also regulates synthesis of cellular substances necessary for healthier

looking epithelial cells.

Pantothenic acid is formed into coenzyme A, inside the cell. Coenzyme A has a central function in the intermediary skin cell metabolism and is required for the synthesis of the hyaluronic acid of the connective tissue, as well as mucopolysaccharides, both acting as cushioning and lubricating elements for skin cells extracellular ground structures. Pantothenic acid can soothe allergic and sunburned skin, promote cell growth, protect the epithelium and have regenerative effects on skin tissue.

Nicotinic acid amide promotes the intermediary metabolism and increases the blood circulation in the skin. It is important for the structure of the skin and increases the efficiency of other active compounds.

Vitamin E regulates the peripheral cell circulation and prolongs skin cell life. It stabilizes unsaturated fatty acids by preventing the formation of toxic lipoperoxides, which are responsible for destroying the integrity of cellular membranes. It also participates in the synthesis of intercellular substances of collagen and elastin, thus playing a role in the processes of cicatrization, the formation of scar tissue and wound healing.

Vitamin C is stored in scar and granulation tissue. It promotes epithelialization and granulation that favors healing of the erythema, a redness or a rash of the skin. Vitamin C deficiencies lead to the inhibition of epidermal regeneration.

Biotin (Vitamin H) offers skin-protection, regulates sebaceous gland function and prevents desquamation, or the shedding of the outer skin layer, inflammation and excessive keratinization of the skin.

Amino acids are responsible for two different effects in the skin. First, they maintain the water balance of the stratum corneum through increased water retention capacity. This results in slight tumefaction and less pronounced exfoliation, displayed as an increased fineness of the outer layer of the skin. Second, amino acids activate synthesis and inhibit degeneration of the connective tissue. In vitro tests have shown that Graminex G60™ is capable of inhibiting collagenase, an enzyme that breaks down collagen. This is the theoretical explanation

for the increased turgor of the skin observed with preparations containing Graminex Flower Pollen Extracts™ as an active ingredient.

The amino acids contained in Graminex Flower Pollen Extracts™ pass into the skin cell's metabolism and lead to increased glycolysis and stimulation of the central metabolism. This promotes and normalizes biological water retention and also exhibits anabolic functions in the germ layer and in the connective tissue, all of which is essential to the process of skin tissue regeneration.

Polysaccharides and invert sugars improve the sensibility or responsiveness and the water-binding capacity of the skin. This reduces desquamation of the horny layer, the outer most layer of the epidermis where dead skin cells are sloughed off. It also increases the turgor of the skin, making the skin soft and elastic.

Enzymes, such as alkaline phosphates, oxidases, peroxidases and proteases, are extremely important for a number of different metabolic processes. From the cosmetic point of view, the proteolytic enzymes, or proteases are of particular interest. Their purpose is to release and shed necrosed, keratinized epidermal cells through the digestion of the intercellular cement substance. These necrosed cells are shed without effecting the intact, live epidermal cells, leaving the healthy skin cells exposed.

Phytosterols are surface-acting substances with softening and penetrating properties. They improve the circulation in the skin and through their effect on the collagenous connective tissue in the dermis, they lead to a tautening of the skin. Phytosterols also

stimulate epidermal proliferation and cell division, leading to an increased thickness of the epidermis. Clinically, these effects are manifested by increased turgor and smoothness of the skin and an increase in the subcutaneous fatty tissue.

Phyto-oestrogens are interesting compounds for cosmetics, since they have a completely different effect on the body, compared with the classical oestrogens. Possible over dosage is not a serious problem, as the phyto-oestrogens have only a slight specific oestrogenic effect. The hormonal effect on the skin only becomes evident after a latent period of 10-20 days, reaches its maximum after 30-50 days and continues as long as the treatment is continued. Discontinuation of the treatment leads to reversion of the skin to its original condition. The use of these hormone-related substances that have the same effect on the skin as the classical oestrogens, with no or only very slight hormonal effects are beneficial in cosmetic formulations. This is the case with the phyto-oestrogens found in Graminex Flower Pollen Extract™. Their dermatotropic effect, or the natural attraction to the skin, may be enhanced when they are applied together with other substances. This attraction increases when applied with substances that promote hyperaemia, or an increase in blood flow to tissues, such as nicotinic acid amide, part of the vitamin B group.

Graminex G60™ and Graminex NAX™ 7% Flower Pollen Extracts are biologically high-grade, active ingredients when used in skincare preparations, combined with the correct skincare medium, have the following general properties:

Care of the horny layer:

- Normalization of water retention in the stratum corneum
- Normalization of keratinization in the epidermis
- Shedding of necrosed cells

In the deeper epidermal layers:

- Anabolic function in the germ layer and in the connective tissue

Overall appearance:

- Improvement in the condition of the skin
- Normalization of skin problems due to metabolic factors
- Restoration to a state of physical balance



Acute oral and dermal testing has provided the data on the non-allergenic properties of Graminex Flower Pollen Extract™ due to extraction methodologies. Of special interest in cosmetics are the higher concentrations of vitamins, amino acids, polysaccharides, enzymes and phytosterols. The high phytosterol content with the synergistic effect of the various substance groups are of great importance. Active compounds found in non-solvent Graminex Flower Pollen Extracts™ make a valuable contribution to skincare formulations.

The Center for Innovative Food Technology

Graminex has joined an Ohio based group called CIFT, the Center for Innovative Food Technology. This group focuses on helping businesses that are involved in food production, processing and packing industries. CIFT offers Ohio companies assistance for improving their position in the agribusiness sector through developing new technologies, evaluating novel processes, designing custom equipment and developing a small business plan as a whole. Projects com-

pleted with this organization are driven by industry and agribusiness markets.

Graminex's membership provides access to food scientists, engineers and technicians. It has also provided grant opportunities for working on different Ohio agriculture products for applications in the functional food industry. Currently Graminex is working on a project with The Ohio State University and Sensus LLC for value added agriculture crops. There is many potential applications

for Ohio agriculture products in these added value markets like dietary supplements, functional foods and beverages and even pharmaceutical. CIFT offers a program that is a great way for smaller businesses to receive help with the type of research that is needed in order to take a product to the marketplace. This has been a great program for Graminex to be involved in.





Dear Customers and Employees:

The Holiday Season is a time to reflect upon the successes of the past year, a time to spend with family and friends and a time to be thankful for all of the blessings each of us have. Graminex is extremely thankful and proud of what the company has achieved during 2010. All of our employees' and customers' hard work and commitment has allowed our company to have a successful year.

We have enjoyed a steady and solid demand for our products across all of our markets this year due to our customers' dedication. We have also continued to look for ways to become more efficient and productive while maintaining a high level of service to our customers. This combination has helped us achieve a level

of profitability that we need to continue expanding our company in the coming years.

I am proud of the teamwork and commitment to customer service demonstrated by employees across the company that helps to give us an advantage in the international markets where we do business. We have demonstrated an ability to meet challenges "head on" and do what it takes to get a job done. As a result, our customers know they can count on our people and our products. I am very optimistic about 2011 and what it will bring. I believe we will have another successful year. I am especially confident because we have a talented team in place dedicated to customer service and a devoted customer base that supports our products.

Let me close by saying how much we appreciate what the employees and customers have done this year to make our company successful and want to say a sincere "Thank You" for your commitment and dedication throughout the year. On behalf of everyone at Graminex we want to wish you and your family a very happy and safe holiday season.

Cynthia R. May



Employee Corner



Colleen May
Entomologist

This quarter's spotlight employee is Colleen May. She works both in the office, as well as the fields in Deshler, Ohio. Colleen began working for Graminex as an office assistant for customer service in 1999 while still attending high school. She then attended The Ohio State University where she earned her master's degree in entomology, while working part-time for Graminex. She has been a full-time employee since 2008.

In the field Colleen is responsible for checking the pollen crops for diseases and pests on a regular basis. This field work also involves researching new potential crops and products. In the office

she is responsible for completing grant applications, writing SOP's and assisting in cGMP auditing. In addition to this Colleen also works on public relations for Graminex including attending numerous international and domestic trade-shows. She frequently works with current and potential partners or customers to include Graminex's products in their catalogues.

Everyone at Graminex knows what an integral role Colleen plays within the company and enjoys working with her. We look forward to having her as a member of the Graminex team for many years to come.

Suggestions or submissions for future articles can be emailed to the Editor Colleen May at bugs@graminex.com