

## **ALOE VERA: HOLISTICALLY PERFECT PLANT**

According to Dr. John Finnegan, mucopolysaccharides are made in the human body and perform many key functions in our health, including growth and immune system functioning. Unfortunately, after puberty we cease manufacturing mucopolysaccharides and must obtain them from outside sources. Mucopolysaccharides are found in large amounts in fresh aloe vera and in properly prepared aloe vera juices. Following are a few of the vital functions this substance has been found to perform.



Aloe Vera

- They become incorporated into the cellular membrane and make the cell more resistant to viruses and pathogenic bacteria.
  - They improve overall cellular metabolism and functioning.
  - They have anti-inflammatory properties.
  - They provide critical lubrication of joints; helping to prevent arthritis and to heal it once it has developed.
  - They aid in the absorption of water, minerals, and nutrients in the GI track.
  - They improve macrophage (white blood cells) activity making them up to ten times more effective in engulfing foreign matter.
  - They enhance the macrophage's effectiveness in modulating the entire immune system.
  - They enhance the macrophage's effectiveness to stimulate and direct the production and release of antibodies (increasing the body's own production of interferon, interleukins and more).
  - They increase the number of antibody forming T-cells in the spleen and increase the number and activity of killer T-cell and monocyte activity.
  - They are responsible for aloe's special penetration properties.
  - In conjunction with their cellular detoxification support and immune enhancement, they improve allergic reactions.
  - They stimulate bone marrow activity.
  - They stimulate the fibroblasts to release collagen and elastin to make new tissue (inside and out).
  - The mucopolysaccharides in aloe vera enhance the functioning of the entire immune system, and repair and detoxify the digestive and elimination systems of the body.
- (51)

Dr. John Finnegan prescribed aloe vera for me, and at the time I had no idea that it was anything more than expensive cactus juice. After taking it for two days, the diarrhea I'd had most of the time since my four blood transfusions was gone. There was a true feeling of reversal from sicker and sicker to a

leveling off and a healing taking place. Of course, Dr. John Finnegan prescribed several other things in the first few months, only a few of which I could afford. Aloe vera was one item I purchased by the case from him. He has had great successes in using aloe with his hepatitis clients. Properly prepared aloe vera is a must in the quest against hepatitis C. In chronic hepatitis C cases there is suffering from severe joint pain. Aloe vera helped eliminate this pain for me better than anything else I've tried. The cost can drive you to the poor house, but at least the physical suffering on the way isn't as bad. Wouldn't it be great if you were one of those fortunate enough to have insurance and they would pay for at least a portion of this product? It's better than most things you'll ever buy in a bottle.

***The FDA allows aloe vera companies to label their products "cold pressed" if they are kept under 400 degrees. However, heating aloe vera over 90 degrees shortens the mucopolysaccharide molecule. Most of the aloe on the shelves in health food stores has been heated. Herbal Aloe Force is one of the companies that guarantee, in writing, that their aloe is never heated!***

John Pittman, M.D. writes in The Immune Enhancing Effects of Aloe:

Beta-glucomannans are a class of very long chain sugars derived from plants, which have been shown in laboratory and clinical studies to have a wide variety of immune stimulating and protective effects within the body. In studying the different sources of this polymer, it has been discovered that the aloe barbadensis plant contains the greatest concentration of acetylated polymannans, which is also the most active form of mannans. These long-chain complex polysaccharides are often called beta-glucomannans, mucopolysaccharides or Acemannan. These aloe polysaccharides have been shown to have many effects in the body, mostly impacting the gastrointestinal and immune systems, which are intricately related. Before elaborating on their beneficial effects, it is appropriate to discuss the type of pathology often present in individuals experiencing immune system depression.

The most striking commonality found in individuals suffering with immune depressive conditions such as Epstein-Barr virus, chronic fatigue syndrome, systemic candidiasis, HIV infection and others, is the high incidence of digestive dysfunction and maldigestion. This has several effects that contribute to stress on the immune system and weakening it.

Maldigestion means that the consumed food is not properly broken down into the elemental building blocks needed for the body to rebuild itself and to generate energy for metabolism. This results in a type of starvation at the cellular level, with all tissue suffering malnourishment and therefore decreased effectiveness of all internal chemical processes.

These processes include breakdown and transport of toxins out of the cell, movement of nutrients into the cell, and energy production for cell functioning. This affects all the cells in the body, including those of the immune system such as white blood cells, (macrophages, and lymphocytes) and red blood cells which carry oxygen throughout our bodies. Not only do we lack enough fuel, but we're low on oxygen too.

However, it is not this cellular starvation alone that causes the immune depression. Maldigestion also results in pathologic reactions. First, these remnants become irritants and cause inflammation of the mucosal wall of the intestines. Many powerful enzymes and damaging chemicals are released, injuring the intestinal wall causing increased intestinal mucosal permeability. The foreign proteins of the digested food can leak across the mucosa into the lymphatic channels of the intestinal wall and from there, gain access to the circulatory system. Here, these absorbed proteins are recognized as foreign and are attacked by the cells of the immune system. Antibodies bind to the protein and then call in the macrophages and monocytes. T-cells arrive later, releasing enzymes and using oxygen to drive the metabolic breakdown of the foreign protein. The total result is that the immune system is constantly turned on and draining down like a battery. As these allergic reactions to food breakdown products continue, the cells of the immune system wear out faster, run out of fuel and aren't reproduced in sufficient numbers.

In addition to this chronic hyper-immune state, undigested food remnants provide fuel for overgrowth of fermentative fungal organisms such as Candida Albicans as well as several types of parasites.

Overgrowth of *Candida* in the intestines has significant effects throughout the body due to the absorption of toxic by-products of its metabolism. This can result in worsening of food allergies, hypoglycemia, digestive disturbances, excessive mucus, bloating, flatulence, skin rashes, and extreme fatigue. This chronic infection further drains the immune system and complicates the picture.

Further damage is inflicted on all cell membranes from the effects of the generalized inflammation occurring as a result of maldigestion. These metabolic reactions utilize large amounts of oxygen and produce oxidative free radicals as waste by-products. The negatively charged oxygen molecules are desperately trying to balance their electrical charge and immediately begin to chop holes into cell membranes as they grab positive charges. The result here is further damage to the intestinal mucosa and a worsening of the increased permeability.

All these processes work together in a vicious sequence of events leading to progressive weakening of the immune system. It is clear that many mechanisms are at play in orchestrating these processes. Without definitive therapy directed at each component of the immune system pathology, this is a downward spiral to death. Fortunately, a thorough multidimensional treatment protocol addressing each component has been shown to reverse these processes. Aloe vera has been shown to have properties addressing all these issues and appears to play a key role on many different levels in boosting all immune functioning.

At the intestinal level, the aloe polysaccharides have been shown to act as potent anti-inflammatory agents, neutralizing many of the enzymes responsible for damaging the mucosal wall and, in effect, quenching the fire. They do this anti-inflammatory action while at the same time boosting the immune system functioning. This results in decreased leakiness of the intestinal wall and less absorption of allergic stimulating foreign protein as well as enhancing the repair of the tissue. Research has also demonstrated their direct viricidal, bactericidal, and fungicidal properties, which can help control *Candida* overgrowth so the normal gastrointestinal bacterial flora can be restored. It has also been found that these polysaccharides stimulate intestinal motility, improving the elimination process to move allergenic proteins from the small intestine into the colon. All these processes help to normalize gastrointestinal wall structure and function and therefore stop the viscous cycle of immune system damage.

In addition to restoring gastrointestinal and elimination functioning, large glucomannan polysaccharides also have direct effects on the cells of the immune system.

They have been shown to increase the number of and activate the intensity of macrophages, monocytes, and T-cells as well as increasing the number of antibody forming B-cells in the spleen. Enhancing macrophage activity increases the effectiveness of the entire immune and repair system of the body as it is responsible for so many functions, including immune modulation.

These polysaccharides have been shown in laboratory studies to act as a bridge between foreign proteins (such as virus particles) and the macrophage, facilitating phagocytosis ingestion of the protein by the macrophage. Activating the receptor sites of the macrophages is a key to the overall boosting of cell-mediated immunity, which is deficient in HIV infection and other immune disorders. These aloe polysaccharides also protect the bone marrow from damage by toxic chemicals and drugs.

These various effects, while seemingly wide spread and unrelated, are in fact due to one simple process at the cell membrane level. Acemannan (the name often used for aloe beta-glucomannans, acetylated polymannans and mucopolysaccharides) is a long chain sugar that interjects itself into all cell membranes. This results in an increase in the fluidity and permeability of the membranes allowing toxins to flow out of the cell more easily and nutrients to enter the cell. This results in improved cellular metabolism throughout the body and an overall boost in energy production. The vicious cycle of maldigestion and cellular starvation is finally broken as the Acemannan normalizes absorption of nutrients and increases tolerance for allergenic foods (from detoxification). The immune system is now stronger, under control, and better prepared for any new threat.

As humans living in the late twentieth century, our body's metabolic and detoxification systems are under ever increasing stress from foreign chemicals, nutrient depleted foods, and immune damaging infectious agents.

In order to control and prevent the inevitable progression of the immune system destruction that these stresses cause, therapy must be multifactorial involving all levels of health, diet and lifestyle. These different areas consist of destruction of pathogenic organisms, metabolic detoxification, intestinal cleansing, increasing cellular metabolism, antioxidant agents to combat free radicals, and direct stimulation of immune system cells. Aloe vera's Acemannan, the active ingredient in cold-processed, whole leaf aloe, has been demonstrated in laboratory testing and clinical use to be effective on all levels of this therapeutic program. (52)

Jeri L. Heyman, Ph.D. writes in *The Secret Promise of Aloe Vera*:

I am a developmental psychologist who has focused on psychological and emotional development for most of my life and career. By becoming aware of the latest research on aloe vera, I have become inspired to examine healthy physical development more closely in addition to the biochemical contribution to overall optimal health and balance. I found the aloe vera plant to be the most fascinating and miraculous plant on the planet. I have spent the last five years investigating aloe vera, and it keeps getting more interesting all the time. As you begin to look at the information on aloe, you may find conflicting information. Please be aware that there is still a great deal of misinformation and misunderstandings about aloe vera and aloe vera products. It is very hard to believe that all the scientific research on the properties of fresh aloe vera could possibly be real - but they are.

The research raised many questions for me. How could something be so profoundly and fundamentally effective for so many areas of health and have only good side effects? Why (if this research is real and aloe has been around for so long) haven't we heard more about experiences of these miraculous effects? What I found is that the research on fresh aloe vera is real and the research on the constituents in fresh aloe is real. However, most of the aloe vera products available in the marketplace are not demonstrating the promises documented by the research, even though they have some benefits. Thus, aloe vera's true potential has remained a secret. (53)

### **The Effectiveness of Aloe Vera - Fundamental and Profound.**

#### **The Immune System:**

Scientific research has demonstrated so many healthful properties of aloe that one's immediate response has to be, "this can't be real." Aloe vera enhances the body's own health and healing in so many ways that I wouldn't even have dreamed to pray for them all. Certainly I couldn't have imagined that they would be found all in one plant, in a natural form and with only good side effects.

Fresh aloe vera contains over 250 constituents including the full range of all sizes of polysaccharides (complex sugar chains that feed the cells). The largest long-chain polysaccharides have an intricate, multifaceted, multi-functional biological design and are manufactured by the body only until puberty. After puberty we must get these health and growth producing polysaccharides from outside sources. Aloe vera has been found to be the most concentrated plant source of these largest known and most profound health supporting polysaccharides - the beta-glucomannans (also known as mucopolysaccharides, Acemannan, and acetylated polymannose).

Research by a pharmaceutical company, Carrington Laboratories, has documented some of the astounding properties of the various sizes of the aloe vera long-chain sugars. As reported by Dr. Ivan Danhof, they discovered that the smaller-chained polysaccharides have properties that help in balancing blood sugar levels. Although this is still being studied, there is evidence that they improve insulin receptor cells, with importance for both Type I and Type II diabetes (not to mention balancing

sugar cravings). The research has also demonstrated some anti-inflammatory properties of these smaller polysaccharides as they mimic the action of steroids. The medium size polysaccharides have been found to be potent antioxidants. The larger chains have demonstrated direct antibacterial properties (staph, strep, E coli, etc.), direct antiviral properties (herpes, influenza, HIV) and the stimulation of the body's own tissue regeneration processes (by fitting receptor sites of fibroblasts stimulating them to produce collagen and other factors needed to make new tissue).

The largest longest-chained polysaccharides, the beta-glucomannans (mucopolysaccharides), have received the most attention and Carrington has patented the beta 1, 4 glucomannan under the name "Acemannan." They documented astounding immune enhancing and tissue production properties of this aloe polysaccharide. They actually showed that when the Acemannan meets the receptor sites of macrophages it stimulates the macrophage into action and can increase its affectivity ten fold. The macrophages are the main immune system cells. They are the white blood cells that engulf foreign matter throughout the body, release growth factor to stimulate tissue generation, modulate the inflammation processes, and more. They command the other immune cells to release their antibodies - how much, when, and where needed.

Carrington's research showed that when the macrophage is stimulated it does increase the production and release of interferon and the interleukins when needed. This fascinates me because here is a natural way that actually helps the body's own mechanisms to increase antibody production as well as increase the effectiveness of getting to where it's needed. **The body was designed with all the mechanisms to heal itself.** Here there is a way to enhance the body's own systems for healing! The macrophages are also responsible for orchestrating and modulating all the other immune cells and the functioning of the entire immune system. They command the immune cell army, signaling where to go, when and how hard to attack and when to cease-fire.

The question of how can one polysaccharide be so great in so many areas is partly answered here because the macrophage does so many profound things and the beta-glucomannan is making it ten times more effective. So, when the literature on aloe vera talks about direct immune enhancement, they are referring to this body of research on polysaccharides by Carrington Laboratories.

### **Supporting Fundamental Health By "Re-Naturing" the Cells.**

Macrophage stimulation and direct immune system support is just part of the story of how aloe can have such a broad range of health benefits. Aloe vera is known to be the most penetrating and absorbing of substances. It permeates cells and tissues like no other substance on earth. Research has shown that fresh aloe will absorb through to all seven layers of skin. Understanding this action has profound implications understanding the effects of aloe for cellular health. The aloe, led by the large polysaccharide, is of a unique size and shape as to be able to penetrate cell walls dramatically. Sometimes the polysaccharides can become part of the cell membrane fortifying the cell wall. Sometimes the aloe moves into a cell, bringing with it all its nutrients and co-factors. It also cleanses the cells by taking toxins out. The aloe feeds, nourishes, fortifies, and cleanses the cell, improving cellular metabolism and the cell's optimal functioning. I call this "Re-Naturing" the cell because it can feed the cell in such a way as to make it function as it was originally designed by nature. The health benefits of this one property of fresh aloe are mind-boggling. Here is a plant that can improve the health of the cells throughout the body. When the cells are healthy and functioning as they should, all the tissues, glands, organs, and systems of the body are also getting "Re-Natured."

### **A Myriad of Nutrients and Co-Factors supporting overall Healthy Functioning.**

Dr. Robert Davis has done a great deal of research on fresh aloe vera, the properties of its many nutrients, and how the aloe polysaccharides work. Research has found that in addition to the full range of sizes of polysaccharides, fresh aloe contains over 250 other constituents including: vitamins (the only plant source of vitamin B12); minerals, amino acids, essential fatty acids, a natural form of salicylic acid and plant sterols (with antiseptic, anti-inflammatory and analgesic properties), two enzymes that the body needs of which aloe is the only plant source, glycoproteins, and more. These constituents have properties of their own as well as serve as co-factors and support for many of the body's biochemical

processes. Dr. Davis' research, as explained below, shows that all the nutrients in aloe vera are crucial to the aloe polysaccharides' effectiveness and biological availability throughout the body.

### **Isolated Nutrients Extracted by Science Versus The Original Designs Created by Nature.**

Carrington Laboratories isolated and patented Acemannan. They continued their research with orally ingested capsules of Acemannan, which was isolated from freeze-dried aloe. The clinical results must not have given them the results they expected, because they switched to the study of injectible Acemannan for which they have FDA approval for study with animals and humans. What does this tell us? I can't imagine that a pharmaceutical company would rather patent an injectible over a capsule. It certainly made me wonder that maybe the research findings only are experienced if the polysaccharides are injected right into where they are needed.

Is this why we haven't heard of these miraculous immune enhancing effects? Is it because the digestive system destroys the polysaccharides? Is it because the polysaccharides can't get through to the lymph system?

It is Dr. Davis' explanation of his "Conductor/Orchestra Theory" that helped me to understand aloe's "Secret Promise." Dr. Davis describes how the entire aloe molecule, with the polysaccharides laced in perfect balance with the other myriad of constituents within a base of water, is what is necessary for the aloe polysaccharides to be available throughout the body and to effectively demonstrate the research on the polysaccharides. The polysaccharide acts as the conductor of the orchestra of all other nutrients. It is the entire "orchestra" that is responsible for the benefits of aloe's "being heard" throughout the body.

As I understand it, the aloe molecule is balanced with the polysaccharide on one end and the other constituents as the "orchestra" on the other end, making it slightly charged on each end. In this form the aloe moves through tissue and throughout the body with the biological design that has a biological wisdom and intercellular communication properties. The aloe works its way to special receptor sites in the digestive tract that ingests the aloe led by the largest polysaccharides and brings it in its whole form into the lymph system where it is then available to move throughout the body and know exactly where to go. Our immune cells send out chemotaxic signals when they are in need of assistance that other immune cells as well as the whole aloe are drawn to.

Thus, it is in its whole form that the aloe polysaccharides are most biologically active and biologically available to the cells of the body. The isolated polysaccharide lacks the biological wisdom and ability to move throughout the body to the cells in need. Thus, the properties of polysaccharides that are not in their original design within the aloe will only work when they happen to hit on particular cells.

It is of critical importance that the aloe not only contain the full range of sizes of polysaccharides but that they also need to be in their originally designed form and balance. Thus, the full promise of aloe vera with all the properties that the research has documented will only be fully demonstrated if the aloe vera is intact.

### **Why Aloe Vera's True Promise has Been Hidden.**

So, again, I ask myself - if this research is real then why aren't we hearing more about these miraculous effects of drinking aloe vera? And why are the aloe vera gels on the market just okay and not the miraculous tissue regenerating gel that the research suggests?

Processing, Processing, Processing! It dawned on me when I used two different aloe juice products that were labeled the exact same way - whole leaf, cold processed, aloin removed - but they tasted different, and they were not equally effective. As my aloe investigation and search for a good aloe product continued, I learned that it is important to read labels very carefully - what they say and do not say are both important.

It makes sense that if the fresh, whole aloe works then we need an aloe that is as close to fresh as possible.

### **Processed Aloe Vera Versus Its Original Biological Design.**

Although the research is real, the effectiveness of any given aloe product will depend on what "is in" and what "is not in" a given product. Demonstration of the scientific research's promises will depend on having the full range of sizes of polysaccharides in the form they need to be to work best in the body. Thus, any processing of the aloe (to stabilize and purify it) needs to capture and protect all the constituents as well as maintain their original design and balance. Beware of an aloe product that does not guarantee - in writing - that no heat is ever applied from field to bottle. Beware of concentrated or dried aloes. The processing can damage constituents as well as lose their original proportions and design. Aloin is a bitter substance found in Aloe that has unwanted, irritating, laxative properties and is responsible for the contraindications for daily use. Be sure your aloe juice has the aloin removed to less than 10 ppm (laxation occurs at around 2 ppm).

### **Heat and Biological Activity.**

Heat can be the most damaging to the important aloe nutrients. Heat can break down the links between the sugars. When this happens, the long chain sugars no longer have the same size and shape of the polysaccharides that fit the receptor sites of key immune cells and tissue producing cells, nor do they have the other properties that the research has documented.

Heat also breaks down the structure of the enzymes and can also damage amino acids and all the other nutrients. Cells are designed with a biological structure that breaks down with heat above body temperature. As I understand it, the body produces fever, when all else is failing, that helps to kill cells, but unlike other aspects of the immune system, heat does not discriminate between our own cells and foreign cells. Thus, it seems logical that temperatures of 100F- 110F are designed to kill the biological activity (life) of cells in our own bodies. I used to think a fever was a side effect of the body not having enough energy to effectively fight off an illness. But that doesn't make sense to me anymore. If the body has no energy for maintaining the homeostasis (balance) of temperature, it is more likely that the body's temperature would drop. When the immune system is being overtaxed and failing it fires up and uses heat to help to break down and destroy the biological structure for life and growth.

This focus on fever highlights the importance of biological temperatures. When aloe vera (or any food) is heated, intricate biological structures are destroyed along with their biological benefits. Additionally, when aloe vera is heated, not only are the important polysaccharides, enzymes and other factors destroyed, but the balance of the entire aloe molecule is destroyed, and thus its biological availability and effectiveness throughout the body.

### **Our Bodies are Perfectly Designed.**

Our body is designed in perfect balance to take in, absorb and eliminate nutrients and process and eliminate foreign and toxic matter, fight off ills, repair tissue and grow. If given the proper tools, the body is designed to be healthy and strong. The best thing we could do for our bodies is to feed it the nutrients it needs, limit the toxins we take in, not overtax any one system, and protect the balance of all the systems. So look at what we are doing: we do not eat enough raw organic foods that contain the nutrients we need in the form we need them; we eat mostly cooked foods which changes the nutrients into forms that not only do not give the body what it needs, but they burden the body. By age five, the toxins in our environment have overtaxed all the systems of our bodies, and we take medicines that put the digestive system out of balance and do nothing to restore balance and healthy functioning, thus starting a domino effect of problems that eventually overtax the entire immune system's functioning.

All illness can be traced to the body's own systems not working well. Medicine is designed to be crisis intervention (and I am grateful for this) not nutritional health support. We need to learn ways to work with our bodies to support the perfectly designed systems we are. When we treat only the symptoms of illness, we can be interfering with our natural "wellness" processes. Often we are counteracting the body's own wisdom and mechanisms for health. Is diarrhea a sign of illness? Yes and no. Yes, it is a

sign that the body is overloaded with waste that needs to be flushed. But no, it is a sign of wellness in that it is flushing the waste from successful immune warfare. Diarrhea is not an illness, per se. It is a result of the body's fighting an illness caused by harmful microorganisms. What an ingenious wellness system: when the fluids from the fight (mucous) build up, the body takes water and mucous from the system and flushes the toxins out.

Enough on that system, let's move on. Think about the mucous produced with allergies and viruses. It is a waste product that needs to be eliminated. We need to help the body get rid of the mucous, not stop it from coming out. When we stop the mucous elimination process, what happens to the toxic waste? We don't need things to dry up the mucous, but we could use a "flush button" that would get rid of it in 5 minutes! I wish all the resources available to medical science were actually focused on wellness!

Our environment and the foods we eat overtax our body's ability to eliminate toxins. Traditional approaches to health care and medicine not only can destroy the digestive system, but also overtax the elimination system, especially the liver. When we stop the symptoms of an illness, we are clogging up the body's immune and elimination systems' natural processes. We can be stopping the body's natural wellness process trying to rid the body of toxic waste. When we do this, we end up overloading the other systems of elimination, especially the kidneys and liver even more.

### **Aloe Vera - The Herbal Answer to Today's Health Crisis.**

Aloe vera is the best herbal answer I can imagine to support the health and healing mechanisms of the body because it doesn't heal, rather, it FEEDS THE BODY'S OWN SYSTEMS in order for them to function optimally and be healthy. It does this, in part, by going into the cells and "Re-Naturing" them to function optimally, as they were originally designed. Thus, aloe is a fundamental tool that gives life to the cells, tissues, glands, organs, and other systems of the body in order to support optimal health, balance, and functioning. In addition, aloe vera has been shown to have many specific properties that profoundly enhance the functioning of body's own immune and repair systems for health and healing to be up to ten times more effective, thus healing can be ten times faster. Aloe vera is a remarkable plant. I urge everyone to examine this for him or her self. To understand that nutrients designed by nature were designed to feed our body perfectly is to understand the importance of feeding the body the fuel it needs to function optimally, as it was originally designed.

The promise in the aloe vera plant has opened my eyes to the need to look at nature's original design for life - to feed life, development and health. It is as though GOD put the aloe vera plant here not only as a gift for health, but also as a metaphor for the miracles that are possible if we trust the design of the divine.

It is fortunate that the aloe vera recommended to me by Dr. Finnegan happened to be a unique aloe product that was enhanced with fantastic immune herbs and processed in a special way. You just can't get any aloe product. Processing will determine what is "in" and "what's not in" the aloe and will determine the results. Once again it is difficult to know the truth about products. So make sure your aloe company guarantees - in writing - that heat is never applied from field to bottle, that it never experiences temperatures above 90F at any time during processing, that it has never been concentrated or diluted, that the whole leaf is being used (more potent), and that the aloin (which can irritate the bowel) is completely removed to 1 ppm or less without any damaging processing. Remember, if it's not written on the bottle, you can't assume anything.

#### **During my treatment I drank:**

Four oz. of properly prepared aloe vera  
two to four times per day, usually more.

By properly prepared I mean raw (unheated),  
organic, whole leaf and *never* concentrated or diluted  
aloe with all the aloin (laxative properties) removed.