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Message: from the President of BioNatural Healing College (BNHC)



Greetings!

First and foremost, I am extremely thankful to Almighty God for granting me this opportunity to present the BioNatural Healing College E- Magazine to our dear readers. Also, I would like to thank you all especially those that are our dear readers that send us their valuable feedback and support. The information provided is for educational purposes only.

We hope this BNHC- E Magazine will be useful to you based with the efforts and dedication of many other researchers and colleagues around the globe. Thanking and wishing you all have the best health and prosperous life.

Best regards,

Dr. Nadir Sidiqi Ph.D.

By Prof. Rosalie Stafford, Bursting with Life Force Three Leguminous Desert Trees: Palo Verde, Mesquite, & Ironwood-BioNatural Healing College



Recently a Mexican lady told me that, when she was a little girl living in her village in the State of Sonora, a few days after the rains, she — and everyone in her village — would go out and feast on the tender sprouts of desert plants: it was the villagers' age-old custom. The seedlings, bursting with life force, called to the poor people to share the abundance of Nature, Even in a poor and parched and desolate land, our Creator has generously showered goodness upon us.



Sonoran Desert (Arizona, USA & Sonora, Mexico)

https://www.nps.gov/parkhistory/online_books/science/8/chap1.htm

Here in my Arizona homeland, a few hundred miles from that lady's anonymous little Mexican village, I also feast on wild sprouts after the rains. No one taught me to do so and — as far as I know, aside from my husband René who did it before we ever met — no one else here in my area has the habit of foraging for fresh sprouts. I myself acquired the habit years ago when, walking in the cool desert after the rains, I spotted a patch of seedlings under a palo verde tree. The seedlings bade me *eat* and I nibbled.

Very fresh.

Very full of life force.

Life force may be understood as the combination of two essential components, the physical and the spiritual: *enzymes*, complex chemicals found in live food, in conjunction with the *divine spark of life* which splendidly shines in every being.

Palo verde (Parkinsonia spp)

Palo verde (Parkinsonia spp) is Spanish for *green stick*, so-called because the plants' smooth bark is a vivid green. Palo verdes photosynthesize the chlorophyll in their green bark: approximately three quarters of the tree's metabolism occurs through the bark, whereas only a quarter through the leaves which, as is typical of desert trees, are very small so as to minimize water-loss. Several different varieties of palo verde are native to the Sonoran Desert, comprising Arizona, USA and Sonora, Mexico: Parkinsonia florida (*blue palo verde*), Parkinsonia microphylla (*Foothills palo verde*), Parkinsonia aculeata (*Mexican palo verde*), etc.

The palo verde (which in 1953 was officially declared Arizona State Tree) is a *keystone species*: these trees create microhabitats that are critical to the structure and function of the Sonoran Desert scrub biotic community. Under their lacy canopy (reaching heights of as much as 25 feet), desert animals find a welcoming habitat: blessed shade, 10 to 15 degrees cooler than the surrounding open land where, for the four months of summer, the daytime temperature hovers around 125 degrees Fahrenheit.

Palo verdes are *nurse plants*: in the soft humus under their sheltering leafy canopy, other desert plants can find a foothold for survival in the rocky land. In addition to ephemeral wildflowers, long-lived cacti take root and flourish. The *barrel cactus* (*Ferocactus*) and the *sahuaro cactus* (*Carnegiea gigantea*) grow very slowly — they take as much as a century to reach full size — and need protection from sun-burn when tender youngsters. The palo verde provides this needed shelter and —amazingly — for the *optimal* span of time: the palo verde is not particularly long-lived tree, only 25 to 30 years, whereas the cactus species that the palo verde shelters live for over a century; thus by the time the cactus is mature enough to tolerate the full force of the sun’s brutal summer rays, the palo verde is senescent and dying. Of course, not every palo verde is nursemaid to a baby cactus; however, after the rains, the rich soil under many palo verdes is studded with seedlings which offer a feast to desert animals: lizards, kangaroo rats, jackrabbits, quail, etc. These seedlings are, in my opinion, quite delectable and I myself take every opportunity to avail myself of the delicious bounty of nature, fresh, organic, and bursting with life force. Plucked from their soft bed of earth under the tree and eaten out of hand, palo verde seedlings could not be fresher than that, and the splendid effect of their life force is unmistakable!

Delightfully attractive trees, different varieties of palo verdes have been introduced to various ecosystems around the globe, with unfortunate results. Imported to Australia in 1900, palo verdes are now considered a serious pest (a “noxious weed”). If only Australians could cultivate palo verde trees for their seeds: I believe a market could be established for palo verde sprouts and microgreens! The palo verde has also been naturalized in Kenya, Tanzania, Uganda, Ethiopia, and Somalia, where the tree provides firewood and fodder (feed for livestock but not people). Unfortunately, the palo verde out-competes native species and shades them out... It saddens me to think that the palo verde, such a lovely tree which functions perfectly here in Arizona, its native habitat, providing food and shelter — shade, coolness, rich humus, plus nourishing seeds and sprouts — to many life-forms, is a “noxious weed” in other lands and a hazard to indigenous flora.

Mesquite (*Prosopis* spp)

The *mesquite tree* (*Prosopis* spp), is another keystone species which flourishes here in the Sonoran Desert but which, upon importation to other ecosystems around the world, has become an invasive pest. *Prosopis glandulosa* (*honey mesquite*) has been introduced to parts of Africa, India, Asia, and Australia and is considered by the World Conservation Union as one of the world's most problematic invasive species.

However, here in its native habitat, the graceful mesquite, like the palo verde, fills its niche splendidly: a nurse tree, the mesquite provides food and shelter to desert flora and fauna. Taller than the palo verde (reaching 40 feet compared to 25) and longer-lived (a century or more compared to a quarter-century), the sprawling mesquite is hard to kill. Seeking water, the mesquite taproot burrows deep into the rocky desert bed: as deep as 200 feet! The mesquite's bud regeneration zone can extend down to six inches below ground level and the tree can regenerate from a piece of root left in the soil. Herbicides are not effective against mesquite. Truly, this magnificent and hardy tree is an inspiration to nature-lovers striving to live and thrive in the incredibly harsh landscape that is Arizona's Sonoran Desert!

My late father (1925-2019) once mentioned that when he was a youngster, during those threadbare years in the 1920s and 1930s when persistent drought and the Great Depression worked together to dry up both crops and cash, his mother laboriously harvested and cooked mesquite beans (either *screwbean mesquite* *Prosopis pubescens* or *velvet mesquites* *Prosopis velutina*). This was not the first time that mesquite trees saved the lives of hungry people: Native Americans subsisted on the gift of the mesquite, grinding mesquite seeds into flour to make coarse flatbread. (They also made tea of the leaves and used that infusion as eye-wash, an important medicine in a land of scathing sandstorms.)

Animals large and small depend on mesquite seeds. *Coyotes* (*Canis latrans*, the largest and most aggressive of the jackals) are, like all dogs, omnivorous. When hunting is poor, coyotes live entirely on mesquite beans, as evidenced by their scat.

Mesquite seeds are high in calcium, magnesium, potassium, iron, zinc, and lysine. Mesquite sprouts, bursting with life force, are good to eat! It is a shame that *Prosopis* spp. — an invasive pest in parts of Africa, India, Asia, and Australia and considered by the World Conservation Union as “one of the world's most problematic invasive species” — is not utilized as a food source for hungry people. I would not be here today, writing these words of praise for the life force of native plants, if my grandmother and her daughters had not harvested wild mesquite beans to feed their starving family.

Ironwood (*Olneya tesota*)

The third keystone species in the Sonoran Desert scrub biotic community which we will look at today is the *desert ironwood tree* (*Olneya tesota*), a monotypic genus. Whereas both palo verde and mesquite have many varieties & cultivars, the desert ironwood is a singularity, a rare jewel in the taxonomy of plants.

Ironwood trees can live for hundreds of years; some 800-year-old living ironwood trees are known to exist! Ironwood is extremely slow-growing and highly drought-tolerant (although susceptible to freezing temperatures). Its wood is extremely hard and heavy (hence the name *iron* wood), and rife with toxic chemicals which discourage insect pests.

The scientific literature speaks of the “bitter” taste of ironwood seeds and asserts that they must be roasted to be edible. Personally, I have not found the raw seeds to be at all unpalatable ... but they are rock-hard. I prefer to consume ironwood seeds after I have sprouted them. Then they are delicious. Ironwood seeds are bursting with life force!

Like the palo verde and the mesquite, the ironwood functions as a “nurse plant” and offers survival benefits to many other species of flora and fauna.



Ironwood tree in bloom

Note the small palo verde (with yellow blooms) and the sahuaro cactus which grew up under the nurse plant

Little burrowing mammals gather and store ironwood seeds in caches to be eaten later. Field biologists have discovered that roughly half of all new germinated seedlings found for plants such as palo verde and *jojoba* (*Simmondsia chinensis*) occur in tight clusters near rodent burrows and, while studies have not been conducted for ironwood, it is likely that ironwood seedlings germinate from rodent caches. Of course, where there are rodents and rodent tunnels, there are scorpions and snakes: in addition to providing sheltering habitat to kangaroo rats and lizards, nurse trees — palo verde, mesquite, and ironwood trees — offer happy hunting grounds for rattlesnakes, so keep an eye out when you are foraging! And as, you forage, give thanks for the opportunity to partake of the life force so generously proffered by ordinary plants which grow wild all around you.

By David Isley, Ph.D- BioNatural Healing College

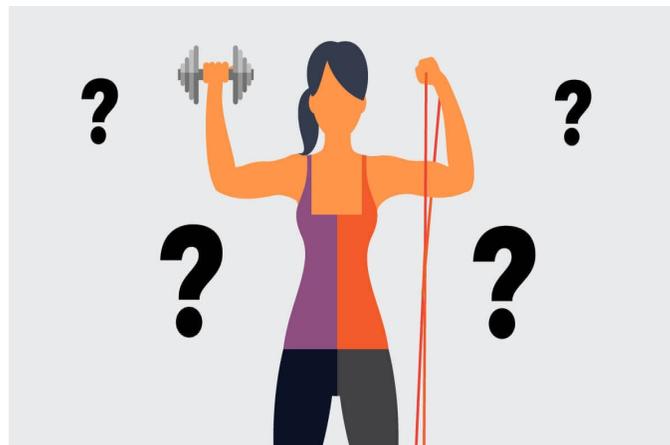
Low Impact Exercise and Fitness

Resistance Band Training



Resistance band training helps to facilitate and emphasize a general high quality-of-life fitness level for the total body approach. It is an excellent workout that targets the entire body and requires no heavy lifting. The use of resistance bands is less intimidating to many levels of consumers. In addition to being less intimidating, it also is more effective because participants tend to adhere to their fitness program longer, bringing about lasting results. There are several types of resistance bands that range in different levels of resistance, up to one-hundred pounds or more.

These types of exercises are quickly gaining in popularity as more is being understood about deep muscle tissue work and its benefits. Like free weights or weight machines, resistance bands provide a force against which your muscles must work. This action causes muscles to contract, which stimulates bone as well as muscle growth. PeerTrainer.com notes that because as you stretch the band, the tension increases; bands can, in some ways, be superior to free weights. Johns Hopkins Medicine recommends the use of resistance bands as one of the safest methods to increase bone strength and help prevent osteoporosis.



An example of workout routines that can be incorporated:

Arms

- Double Standing Bicep Curls
- One Arm Bicep Curls
- Cross Body Curls
- One Arm Standing Triceps Extension

Shoulders

- One Arm Side Raises
- Double Over Head Shoulder Press
- Standing Single Arm Front Raises
- Double Arm Side Raises

Legs / Gluteus muscle

- Squats
- Side Leg Raises
- Laying Glute Bridge
- Kneeling Kick Back

Regular exercise can contribute more to optimal physical health than any other factor, apart from diet. Adopting an exercise program at least three times a week can improve your energy level, aid in digestion, increase circulation, promote restful sleep, decrease stress, increase self-esteem, raise HDL (good) cholesterol levels, increase longevity, enhance mental function, and decrease depression and anxiety. A good exercise regimen should include:

- **Aerobic Exercise:** Refers to any form of exercise that needs increased oxygen intake to supply energy to the muscles via the mechanism of fat and carbohydrate metabolism.
- **Strength Conditioning:** The three types are calisthenics (sit-ups, push-ups, jumping jacks, and swimming), strength conditioning with aids (working with free weights and weight machines), and strength conditioning in combination with aerobics.
- **Flexibility Exercises:** Refers to keeping a limber, flexible body. The various muscle groups work at peak efficiency, keeps good posture, and decreases the chance of injury.

Yoga

The word *yoga* means “union” or “to yoke,” indicating its original purpose as a way of life intended to create both an integration of mankind’s physical, mental, and spiritual energies, and to serve as a discipline that would ultimately result in unifying the *atman*, or individual self (soul) with the *Paramatman*, or Absolute Being (God). In India, where it originated, yoga represents a complete way of life similar to the holistic lifestyle advocated by practitioners of holistic medicine.



The form of yoga most familiar to Westerners is known as *hatha yoga*, which deals primarily with breathing exercises and physical postures that can improve overall health and provide greater control over various body functions such as heart and respiration rates. The ultimate goal of *hatha yoga*, however, is to make the mind and body fit instruments for perceiving greater levels of spiritual awareness. A variety of other yoga practices exist, as well, although for the most part they are less well-known in the West. Some of the types of yoga practices are as follows:

➤ *Karma Yoga.*

Kundalini Yoga

➤ *Bhakti Yoga*

Mantra Yoga

➤ *Jnana Yoga*

Tandra Yoga

All of the above forms of yoga are said to be superseded by *raja yoga*, outlined in the Yoga Sutras of Patanjali. *Raja yoga*, not only encompasses a complete system of health, but also offers a systematic approach for living an optimum lifestyle for overall personal development. The primary focus on yoga by holistic practitioners is usually on *asana*, *pranayama*, and meditation, since each of these aspects has been shown by research to improve health.

All three practices, performed separately, result in a deeper connection between the body, mind, and breath, but best results are achieved when they are performed in conjunction with each other. There are many conditions in which yoga has been scientifically proven to be beneficial. Some of the them include:

- Addiction
- Back pain
- Carpal Tunnel Syndrome
- Cognitive Skills
- Epileptic Seizure
- Grip Strength
- Heart Disease
- Mood and Vitality
- Obsessive Compulsive Disorder
- Rehabilitation

Ref:

- The American Holistic Medical Association Guide to Holistic Health, by Larry Trivieri, Jr. & The American Holistic Medical Association, Pub. John Wiley & Sons, ISBN 0471327433
- Google Images
- Peertrainer.com

By Dr. Rita Louise The Message Of Illness
And Disease How Our Thoughts And Emotions
Effect Our Health



*Pain (any pain – emotional, physical, mental) has a message. The information it has about our life can be remarkably specific... Once we get the pain's message, and follow its advice, the pain goes away.-
Peter McWilliams*

When we think about creating and maintaining health, we typically only think about the physical part of our make-up. Little attention is paid to our thoughts, feelings and emotions even though they are intimately connected to the state of our health and well-being. Western medicine has only recently begun to appreciate the impact our thoughts and emotions have on our health and has started to investigate the link between the mind and the manifestation of disease in the body. Their work has led them to identify a number of reasons why people get sick. For some, illness and disease is a way in which individuals express unresolved distress and trauma. For others, getting sick may actually provide the person some kind of benefit, even if the benefit is based on an unhealthy belief. Other reasons people get sick can include: The disease may provide them with an excuse to not meet up to high expectations. It may provide them with a way of expressing inner mental or emotional conflicts. For some, the experiencing of a disease may help them, in a roundabout way, to solve a problem. We may also use a disease to punish ourselves or receive attention from others.

Disease may also cause us to find incentive change internally or to modify unwanted habits. There are a growing number of skilled observers who believe that health concerns, including diabetes, cancer or heart disease, represent a symptom of a larger pattern of disorder and disharmony in the body. Renee Weber, Ph.D. expressed the cause of disease in this way: "The primary cause of disease is the disconnectedness from the flow and rhythm of the whole, both within the single organism and also among groups of organisms." Disease can be seen as the manifestation of some undesirable condition within us that has been brought into physical form so it can be dealt with and eliminated. It can be thought of as a reflection of the conflict between our inner state and outer existence or as our soul trying to get our attention. It works to let us know that our true self is being thwarted or that we are being pulled in two directions at once. It is brought about by our habitual or limiting thoughts and our negative feelings and emotions.

When we experience physical, emotional and even mental discomfort, our bodies are saying to us “Excuse me, there is something wrong, I’m imbalanced and I want to move back into wholeness.” When we experience pain, illness and disease, on the other hand, it is our body’s way of saying to us “**HEY!** I have something I want you to pay attention to. I have been trying to get you to notice me for months. Now you **HAVE** to acknowledge me.” From this perspective, every disease, every issue that manifests in the physical body represents an aspect of ourselves that needs healing. It can be thought of as the final stage of a much deeper complaint. It is an indication that there is resistance somewhere within our energetic system.

It is a sign that something is out of balance and the body is looking to bring itself back into wholeness. Elida Evens in her 1926 book entitled A Psychological Study of Cancer said, “Cancer is a symbol, as most illness is, of something going wrong in the patient’s life, a warning to him to take another road”. Canker sores, for example are the body’s way of warning us that we are withholding communication, which is now festering inside of us. A bladder infection may literally let us know just how pissed off we really are.

Our bodies are always sending us signals but more often than not, we ignore them. Instead of paying attention to the aches, pains, frustrations, anxieties and stresses we experience, we allow our conscious mind to overrule them. Instead of following the guidance they offer us, we push them to the side and tell ourselves that what we are experiencing is wrong or unimportant. We allow our ambitions, our fears, our jealousies or our greed to rule, yet each of our should-a, would-a, could-a’s are aspects of our personality that are in need of healing and have nothing to do with our true self.

When we don’t pay attention to the messages provided to us by our soul, however, they will get our attention in symptoms such as obsessions, worry, mental anguish, fears, addictions, violence, heart disease, high blood pressure, diabetes or cancer. If its message is received, acknowledges and acted upon, health and harmony will ensue. If it is ignored, the problems being experienced will intensify until we finally get the message. It is only then that balance can be restored.

Unfortunately, we are taught to focus our attention on the expression of the personality and the external world. We are taught to ignore our deepest wants, needs and desires. In the end, we are left with little understanding of our true inner nature and how to recognize the messages from our soul. Inadvertently we become disconnected from our bodies and end up dulling our mind and our emotions. We numb ourselves with drugs and alcohol. We watch television, play video games or peruse other external distractions that overload our senses. We spend our days lying around, overeating or keeping ourselves constantly busy all in an attempt to avoid conflicts between our inner and outer worlds.

Diversions such as these, allow us to avoid dealing with any discrepancies that may exist between our personality and our inner world. As you may recall, the goal of the personality is to maintain the image it created of itself. This is why many people avoid going inside. When we go inside, we are faced with the truth of who we really are. The personality is afraid that we will find out that who we are is not who we think we are. It persuades us to ignore the promptings from our inner world all in an effort to avoid change.

All of our pain, suffering, illnesses and diseases endeavor to guide us towards perfection. So, while it may seem bad or negative on the outside, the potential for transformation and change it offers is immense. Those who accept the challenge change presents often find that it can actually be a blessing in disguise. Most of us, however, change only when we have to. In fact, the majority of us spend a lot of time and energy running away from ourselves as opposed to changing.

When we resist changing, our problems do not go away. Resistance is the personality's way of holding on to an old self-image instead of letting it go. It is only when we let go and stop resisting that we can change and grow. We can try to fight change, suppress change, ignore it or deny it, but in the end, the underlying issue will rear its ugly head again, in another way or another form. These problems are lessons provided for us by the soul to help us heal an aspect of our personality. Ultimately, the choice is this: we can make the changes required of us, or we can choose to learn the same lesson over again, re-experiencing the same hurts, pain or confusion as before.

Many of us will only change when we feel as if we have no other choice. This occurs when we have reached a point in our lives where our problems have bothered us for so long or created so much pain and discomfort that we just cannot stand it any longer. It is through personal and professional crisis, extraordinary circumstances, profound suffering, broken promises, missed opportunities, life altering events and even the diagnosis of a terminal illness that we can become clear about who we are.

It is at these times that we can typically experience the most profound, life altering changes. Each of these life crises has the ability to rock our world and shake us to our very foundation. The self-image created by our personality begins to break down and we can begin to see that our view of our self is no longer working.

To bring changes into your life, the trick is to start paying attention to the signs and signals your body is receiving and honestly interpret them. It is only when we have succeeded in observing our thoughts, emotions and physical sensations that we can begin to know ourselves. By paying attention to all aspects of ourselves, we will begin to see the lessons our illness holds. It will also give us the opportunity to discover how our illness came into being in the first place and why.

Change is not hard but it does take time, commitment and courage. It can be scary and can create confusion, but if you think about it, most of our pain comes from our digging our heels in the sand as we fight it. Change does not happen all at once, but in small, almost undetectable ways. As we work to change, we will stumble, fall, experience setbacks and failures. Each of these experiences will help us as we move forward because they cause us to grow. They help us become conscious of what is and are not working for us, giving us the opportunity to become aware of, practice and integrate new ways of being.

On physical levels, we achieve awareness by listening to our body and paying attention to its needs. This includes a proper diet, regular exercise and relaxation. On emotional levels, it includes paying attention to how we feel and expressing our emotions as necessary. It is important to express our feelings and let them out. The larger the range of emotions that we experience, the happier and healthier we are. When we express our emotions we are allowing energy to move through us as opposed to suppressing it within us, even if the emotion we are experiencing is anger, pain, frustration and even rage.

On mental levels, awareness is achieved by paying attention to our actions. We act based upon our beliefs and intentions. If you are uncertain what beliefs are getting in your way, look at the source of your confusion, frustration, resistance, anxiety or stress. Follow these feelings back to their core beliefs. It is by acknowledging our underlying beliefs that we can change them and move on. Letting go of an old belief can be daunting, but you will never know what or who you will become unless you do.

On soul levels, health means creating skills of self-awareness and conscious decision-making. Through self-examination, we can often uncover patterns of thought or behavior that create or contribute to mental and emotional stress as well as to the physical tensions we experience in our bodies. These might take the form of a rigid attitude, a particular habit or an expectation or pretense that acts as a barrier or obstruction to our true self. By identifying these barriers, we can begin to let them go. With it, we must be willing to endure temporary pain, discomfort or hardship and recognize that they are part of the process of making us whole. Many people think disease is cruel. Disease, however, provides us with an opportunity to work through internal conflicts and learn to accept ourselves fully, including the positive, negative, desirable and undesirable aspects of ourselves. Often, it is only through personal and professional crisis, extraordinary circumstances, profound suffering, broken promises, missed opportunities, life altering events and even the diagnosis of a terminal illness that we can become clear about who we are.

The trick is to start paying attention to the signs and signals your body is receiving now. When we feel anxious, confused, uncomfortable or even frustrated, it is an indication our body is trying to tell us something important. As we learn more about ourselves and become increasingly aware of our different parts, we can begin to recognize the aspects of us that are seeking expression and integrate them. At that point, the “dis-ease” may no longer be necessary. It is only when we are whole – body, mind and spirit that health can return naturally.

The journey to wholeness requires that you look honestly, openly and with courage into yourself, into the dynamics that lie behind what you feel, what you perceive, what you value and how you act. It is a journey through your defenses and beyond so that you can experience consciously the nature of your personality, face what it has produced in your life, and choose to change that. Gary Zukav

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About Dr. Rita Louise Bestselling author, [Dr. Rita Louise](http://Dr.RitaLouise.com), is a Naturopathic Physician and the founder of the [Institute Of Applied Energetics](http://InstituteOfAppliedEnergetics.com). It is her unique gift as a medical intuitive and professional clairvoyant psychic that enlivens her work. Let Dr. Rita assist you bringing health, healing and wholeness back into your life. To find out more about Dr. Louise, visit her website at <https://medical-intuitives.com>

Dr. Nadir Sidiqi Ph.D., an invited speaker at the Pesticide Applicators Professional Association (PAPA) Conference held at University of Redlands, California “What are the Causes of Plant Disease? (Fungi)” (May 21, 2019)



It is a pleasure to share with some modification specifically for BNHC E-Magazine readers in this June edition about the Pesticide Applicators Professional Association (PAPA) conference. Fungi is a complex organism and the majority of plant disease caused by fungi. Fungi and Fungus-Like Organisms (FLOs) are eukaryotic organisms that lack chlorophyll. The cell wall of fungi predominantly composed of chitin with glucan (a complex sugar) and reproduction by spores. Unlike fungi FLOs has a distinctive cell wall composition which containing cellulose (no chitin like fungi). Plant pathogens (fungi) classified as true fungi and divided into four major groups (phyla) of true fungi include Ascomycota, Basidiomycota, Chytridiomycota, and Zygomycota. The first two are important plant pathogens whereas the last two are less plant pathogenic.

Therefore, fungi do not have the ability to photosynthesize their own food. They obtain nutrients by absorption through the tiny microscopic thread-like filaments called hyphae that branch in all directions throughout a substrate. A collection of hyphae is referred to as mycelium (pl., mycelia). Mycelia make it easy in the diagnostic sign associated with diseases caused by fungi and FLOs. We have seen mycelium growing on old bread or rotten fruit or vegetables and may have referred to these organisms collectively as molds or mildew. It is important to understand how fungi and FLOs can be categorized into main four categories based on their preference for surviving on dead or decaying organic matter versus living tissue: 1. Obligate parasites: Always a parasite, can only grow as a parasite on or in a living host. The uniqueness of this group that they cannot survive as saprophytes or be cultured in the laboratory. In addition, they have a vested interest in prolonging the life of their host to increase their own viability (e.g., all viruses, powdery mildews, downy mildews, rusts and smuts are plant diseases obligate parasites). 2. Obligate saprophytes: They are not parasites, always saprophytes and can only survive or are obliged to gain nourishment by colonizing dead or decaying organic matter. 3. Facultative parasites: Usually survive as a saprophyte but have the ability to become parasitize and cause disease under certain conditions. For instance, *Pythium* species and many bacterial pathogens. 4. Facultative saprophytes: Usually survive as a parasite but have the ability to live on the dead and decaying organic matter under the right conditions. For example, *Phytophthora* and *Botrytis* species.

Let us review two examples of a major incident of plant diseases caused by fungi. As such, the most devastating historical incident was caused by the late blight of potato. As a result of the Irish potato famine in 1845, approximately one million people perished from starvation; a million and a half more are having left Ireland and immigrated to the United States. Similarly, the American chestnut was caused by a fungal disease that nearly wiped out forests in the eastern United States. The chestnut trees with their majestic heights value provided high-quality hardwood for building construction and nuts as a food source for people and wildlife. However, this greenery treasure in the late 1800s, chestnut blight fungus in 1904 was accidentally introduced to the United States through imported Asian chestnut trees. The American chestnut trees were susceptible, in more than three decades, about 30 million acres of chestnut trees were destroyed. Still, chestnut blight considered a problem, and researchers are working on alternative options for management. It is important to understand the concepts of plant diseases with reasons why plant get sick and how to prevent or manage healthy plant production to maximize food production and minimize risk to public health and the environmental health. Speaking fungi and fungal-like organisms (FLOs) cause more diseases than any other group of plant pests.



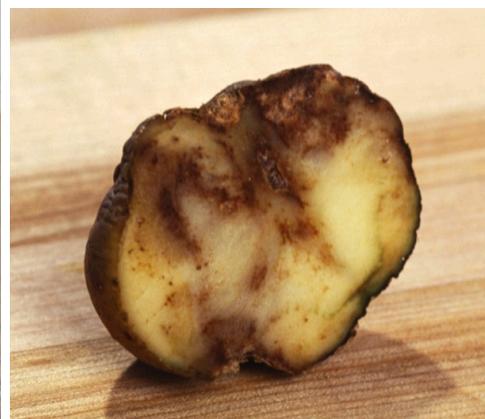
Hyphae and mycelium growing on tomato

<https://study.com/academy/lesson/hyphae-definition-function-types.html>



Chestnut blight

<http://forestphytophthoras.org/gallery?species%5B0%5D=2356>



Potatoes blight (FLOs)

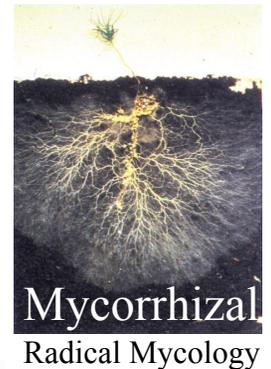
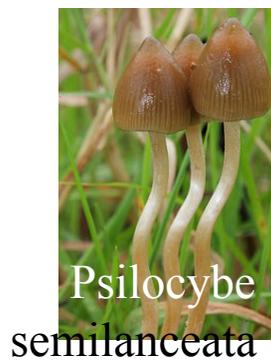
<https://www.smithsonianmag.com/science-nature/scientists-finally-pinpoint-the-pathogen-that-caused-the-irish-potato-famine-71084770/>

We know how important fungi play roles as a causal agent to plants, as well as certain diseases in humans, and animals as well as producers of industrials and pharmacological products, and decomposers that make them a significant research part especially their biology and ecology for the researchers worldwide. The impacts that fungi have linked to plant health, food loss, nutrients loss, and human health loss. Therefore, fungi play an important role in human life, as organisms that cause plant diseases as mentioned above in brief, however, they (fungi) are part of the nutrient cycle in ecosystems uses, as follows:

Crop production: the mycorrhizal relationship between fungi and plant roots is essential for farm productivity,

Food: edible mushrooms (edible fungi e.g., morels, shiitake, chanterelles, and truffles). *Saccharomyces cerevisiae* (is a species of yeast), also commonly known as baker's yeast, is an important ingredient in bread daily consumption of humanity.

Medicine: amazingly, fungi naturally produce antibiotics to kill or inhibit the growth of bacteria, this can occur naturally in the environment as well in the limiting bacteria competition. For example, important antibiotics such as penicillin and the cephalosporins can be isolated from fungi as well as other valuable drugs included immunosuppressant drug cyclosporine (which reduces the risk of rejection after an organ transplant). The precursors of steroid hormones, and ergot alkaloids used to stop bleeding. Psilocybin is a compound that can be found in *Psilocybe semilanceata* (Liberty cap or Magic mushroom), *Gymnopilus junonius* (a type of mushroom commonly known as Laughing cap Laughing Gym, Laughing Jim or the Spectacular Rustgill) which have been used for their hallucinogenic properties in various cultures for thousands of years. Furthermore, modern advances in genetics were achieved by the use of the red bread mold *Neurospora crassa*. In addition, some of the beneficial fungi can be used as a biological insecticide (kill insect) as well as biological fungicide (control certain plant disease caused by fungi) for example, the fungus *Beauveria bassiana*, and *Trichoderma*.



It is important to remind us back to the topic of PAPA conference that plant disease (focuses on fungi as mentioned) management required an integrated approach such as avoidance, exclusion, eradication, and protection. Avoidance: to determine in advance the best planting time for each site selection. Exclusion: obeying laws and regulations pertaining to food and agriculture is crucially important to protect plants from fungi and other pests that are not present in a certain area. Planting pathogen-free seeds and other plant materials (resistant variety) will be a natural and beneficial way to improve sustainable farming. It may be necessary to improve quarantine, both local and international. Eradication: Eradication along sanitation will significantly reduce the pathogen population by removing infested debris. Planting non-susceptible plants in the infested field for one or more years (crop rotation) is another natural way to control the infestation. Pruning tree branches during the dormant season can reduce canker disease, and other problems and will prevent the spread of spores that would carry the infection to neighboring sites. Protection: It will be both smart and beneficial to avoid unnecessary use of chemical pesticides. Our first line of defense should be prevention and focus on the above three strategies. They include using resistant plants, those that possess properties that prevent disease development. Pesticides must be chosen for the right purpose. Individuals must follow the label instructions, use the correct amount and the right application method at the right time and must wear protective clothing.

References

1. Schuman Gail L and D'Arcy Cleora, Essential Plant Pathology (2006)
2. <https://ohioline.osu.edu/factsheet/plpath-gen-7>
3. <https://courses.lumenlearning.com/boundless-biology/chapter/importance-of-fungi-in-human-life/>
4. <http://www2.ca.uky.edu/agcomm/pubs/ppa/ppa46/ppa46.pdf>
5. <http://plantclinic.cornell.edu/mgresources/MGT%20Disease%20PlantPath-HO-2010.pdf>



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