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|  |  | Herbs, an Alternative to Modern Medicine?  Introduction |
| [**Home**](http://docs.google.com/index.html)Introducion[**Hypothesis/Prediction**](http://docs.google.com/Hypo.html)[**Experiment**](http://docs.google.com/experiment.html)[**Data**](http://docs.google.com/data.html)[**Recommendations**](http://docs.google.com/recs.html)[**Conclusions**](http://docs.google.com/conclusions.html)[**Bibliography**](http://docs.google.com/biblio.html) |  | According to the U.S. Food & Drug Administration Center for Food Safety & Applied Nutrition, on September 22, 1985, the Maine Bureau of Health was notified of gastrointestinal illness among patrons of a Japanese restaurant. Many of the customers were showing signs of illness while still on the restaurant premises. It was because if the uncertainty the local health department, in concurrence with the restaurant owner closed the restaurant at 7:30 p.m. that day. "In 1980, nine outbreaks were reported to the Centers for Disease Control, which included beef, turkey, and Mexican foods. In 1981, eight outbreaks were reported which primarily involved rice and shellfish."  Darwinís theory of natural selection and evolution applies to every aspect of our environment, including bacterium. They evolve through natural selection through many generations. Antibiotics that were developed years ago are soon forgotten or taken for granted. The resulting strains of bacterium have become resistant to current antibiotics and what seemed to be a thing of the past become a problem of the future. Bacterial resistance can be attributed to such factors as genetic variations or mutations over time because of their selection for resistance, the resistant cells are able to survive to reproduce. Bacteria such as Syphilis and Pneumonia, once thought to be controlled by antibiotics, have become more resistant.  Bacteria are classified into two groups: gram positive and gram negative. Gram positive bacteria have a thick cell wall composed of polysaccharide molecules and polypeptide chains; examples include BACILLUS, Clostridium, Micromonospora, Sccharopolyspora, and Sreptomyces. Gram negative bacteria have thin cell walls of polysaccharide molecules and polypeptide chains, which means they have different susceptibility to antibiotic treatments.  **THE BACTERIAL TEST SUBJECT**  The bacterium that we used to test out experiment was Bacillus Cereus. Bacillus Cereus is considered an aerobic, gram-positive, spore forming motile rod shaped bacteria, which causes two types of food borne illnesses (food poisoning). The possible results after being exposed to the Bacillus are after 1 to 6 hours, signs such as nausea, vomiting and cramps which tend to last up to 2 hours, and symptoms disappear within 24 hours. Another possible result from the bacterium is after an incubation period of 4 to 16 hours in which the enterotoxin causes the small intestine to secrete massive quantities of fluid which results in diarrhea. But Bacillus Cereus can also be used in a positive way, used as a form of bio-control to get rid of unwanted pests, and it deters certain fungi from rotting seedling plants. Bacillus Cereus is commonly found in soil, milk, cereals, starches, herbs, spices, and other dried foods, most foods itís involved with are meat pies, fried rice and puddings.  Are there any alternatives to antibiotics in combating these new strains of bacterium? Besides the less effective antibiotics, some people don't look to favorably upon modern Western Medicine. Some prefer the natural herbal approach; this may hold a key to the alternative solution to the bacterial problem. Herbal remedies have been around for many centuries, but have recently made a stunning return into our culture in building up the immune system.  **TREATMENTS**  There are many herbal treatments that have been around for many centuries and are possible candidates in combating bacterium. For our experiment we choose three common herbal remedies: Echinacea and Golden Seal (liquid form together); Cat's Claw (powder); and Garlic Oil (liquid). Each of these has been around for centuries and various cultures have used them for medicinal usage before.   * ECHINACEA and GOLDEN SEAL   Echinacea is a native herb to central and southwestern United States, which grows in open fields and rocky soils, and bear purple flowers. The roots and leaves are commonly used; the root contains antibacterial, antiviral and antifungual ingredients that build resistance to infections. It has been commonly used during cold and flu season, and is known as the Purple Cone flower, and acts as a blood purifier that helps remove toxins produced by infection. Echinacea promotes the production of white blood cells and has been found in effective in strengthening the immune system. The Plains Indians used Echinacea for medicinal purposes, not just for treating the flu and cold, but also for snakebites, spider bites, sores and wounds, toothaches, burns, throat infections, canker sores, and many more.  Golden Seal is a native North American herb that grows in the Appalachian Mountains and surrounding areas found in rich soils of shady woods and moist places. The generic name for this herb is Hydrastis, apart of the Buttercup family, Ranunculaceae. Indian tribes such as the Cherokee used it for medicinal reasons and also as their yellow dye for clothing and weapons. Golden Seal is an effective anti-biotic, anti-flammatory and healing tonic. It's commonly used with infected mouth, throat and eyes, and is effective with digestive problems.  The two herbs are commonly combind because there is a shortage of both of them in the industrial world. In addition, the have similar healing properties, and it's ecologically and economically sound.   * CAT'S CLAW   Cat's Claw is apart of the family Rubiaceae, genus of Uncaria, species Tomentosa. It goes by many names: Cat's claw, Una de gato, Paraguayo, Garabato, Hawks Claw, and many more. It's used as an anti-bacterial, antimutagenic, antioxidant, anti-inflammatory, antitumorous, anti viral, immune system helper, and many other uses such as for asthma, inflammations of the urinary tract, arthritis, rheumatism, ulcers and cancer. Cat's Claw is a large woody vine that is indigenous to the Amazon Rainforest and other tropical areas of South and Central America. Tribes of Peru such as the Shipibo, Conibo, Cashibo, and many others have been using the Catís Claw for over 2000 years.   * GARLIC   Garlic is used to treat aliments such as asthma and tuberculosis. A papyrus of a collection of over eight hundred remedies, of which twenty-two are garlic-based are contained in a medical work dating back to 1550 B.C. For more information connect yourself to <http://www.pleasanton.k12.ca.us/avh_science/Creek/AP98/LamNg/intro.htm>    **From a Medical Stand Point**   * **Echinacea** contains such biological properties as: Caffeic Acid Derivatives (including cichoric acid), echinacosides, polysaccharides, polyacetylenes, alkylamides, flavonoids, iron, iodine, copper, sulfur, potassium, Vitamin A, Vitamin C and Vitamin E. * **Golden Seal** contains such biological properties as: 3 alkaloids known as Berberine, Hydrastine and Canadine; resin, albumin, starch, fatty matter, sugar, lignin and volatile oil. * **Cat's Claw** contains such biological chemicals as: 3beta,6beta, 7-Acetoxydihydronomiline SD CCO, 19alpha-trihydroxy- urs-12-en-28-oic-acid, 5alpha- carboxystrictosidine, Acetyluncaric-Acid PL JSG, Adipic-Acid, Alloisopteropodine, Allopteropodine, Angustine, Campesterol, Carboxystrictosidine, Catechol BR AYL, D-Catechin, DL-Catechol, Catechutannic Acid, Beta-sitosterol, Corynantheine, Corynoxeine, Dihydrocorynantheine, Dihydrocorynantheine-n-oxide, Dihydrogambirtannine, Ellagic Acid, L-Epicathechol, (-)-Epicathechin, Gallic-Acid, Hanadamine, Hirsutine, Hirsuteine, Hirsutine-N-Oxide, Hyperin, 3-ISO-19-EPI-Ajmalicine, Isocorynozeine, Isomitraphylline, Isopteropodine, Isorhynchophylline, Isorhynchophylline-N-Oxide, Isorotundifoline, Ketouncaric-Acid, Mitraphylline, 11-Methoxyyohimbine, Oleanolic-acid, Ourouparin, xogambirtannine, Pteropodine, Quinovic-acid-3beta-o-(Beta-d-glucopyranosyl -(1->3)beta-d- fucopyranosyl-(27->1)beta d-glucopyranosyl-ester, Quinovic-acid-3beta- o-beta-d-fucopyranoside, Quinovic-acid-3beta-o-beta-d-fucopyranosyl- (27->1)beta-d-glucopyranosylester, Quinovic-acid-3beta-o-beta-d- quinovopyranoside, hynchophylline, Rotundifoline, Speciophylline, Stigmasterol, Uncarine, Uncarine-f, Ursolic-acid * **Garlic** contains such biological chemicals as: Calcium, Vitamin A, Vitamin C, Iron, B1, B2, Phosphorous, Nicotine acid, Carotin. |