

## HEALTH BENEFITS OF NATURAL HERBS AND SPICES: IMPLICATIONS FOR HEALTHY LIVING

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### Abstract

*The study reviewed health benefit of natural herbs and spices. It focused on classification of herbs and spices and their health benefits. Herbs and spices were found to contain anti-oxidants, antimicrobial properties, and anti-inflammatory substances. The paper fully examines the concept of different herbs for health benefits. The potential health benefits of ten most commonly used herbs and spices such as garlic, ginger, turmeric, cloves, black pepper, cinnamon, rose mary, thyme, aloe-vera and bay leaves were reviewed. It emphasized the functions and roles of these herbs and spices and the implications of herbs and spices for healthy living. The study concluded that herbs and spices make favorable additions to meals. It was therefore recommended among others, that herb and spices should be consumed as often as possible, to keep the body fit.*

**Keywords;** Natural Herbs and Spices, Health benefits, Implications, Home-Economics

### Introduction

Spices and herbs have been use for centuries both for culinary and medicinal purposes. Spices not only enhance the flavor, aroma, and color of the food but they can also protect acute and chronic diseases. Recent increase in the adulteration of spices and aromatic herbs in food industries constitutes a problem that requires a plan of action by parents, teachers and government to change and address unhealthy dietary pattern and lifestyle to reduce the risk associated with diet related chronic diseases. The use of chemically produced food seasonings as flavor enhancers is a common practice globally. These enhancers contain very harmful substances, but ignorantly many people now prefer to use these artificial food seasonings, to enhance the flavor, aroma, color and taste of their food. However Peace (2018) a nutritionist of Health and Healthy living advised against excessive use of these seasonings, as they often contain some questionable ingredients that can be harmful to the human health when used over time.

Also, they do not have any additional nutritional value to foods. In addition there are three main ingredients used in the production of almost all the synthetic seasonings. They are salt, hydrogenated oil (Tran's fat), and Monosodium Glutamate (MSG). These three ingredients are what give the seasoning their long-lasting and meaty taste that leave you wanting more. Researchers have found these items harmful to health. It is widely known that excess salt in our diets can increase blood pressure and those with high blood pressure are people at high risk of dying from stroke. It is not only the salt from these cubes that make it excessive, but the fact that many people add several of these cubes in their meals plus additional salt. Thus excess use of these products may be the cause of the high blood pressure in some particular cases. The extra water stored in the body raises the blood pressure. According to biomarkers of intake based on human intervention studies (Rosana, 2019) the more salt you eat, the higher your blood pressure. The higher the blood pressure, the greater the strain on the heart, arteries, kidneys and brain. This can lead to heart attacks, strokes and kidney disease. Another primary ingredient is hydrogenated oil which is a type of fat that food producers use to keep their foods fresher for longer period of time. Majority of the products that contain hydrogenated fat are highly processed with added sugar and salt. Trans fat have been shown to harm heart health, also studies reveals that

trans-fat increases the level of low density lipo protein (LDL) bad cholesterol and at the same time decreases the level of high density lipo protein (HDL) good cholesterol, both of which are risk factors for heart disease. Food manufacturers use Trans fat as preservative and also enhance the texture of the food seasoning. Lastly is Monosodium Glutamate (MSG) with the taste of umami. Umami is the fifth taste joining the sweet, sour, salty and bitter. Monosodium Glutamate has been linked to such diseases as, liver inflammation and memory problems. People have reported reactions after eating foods with Monosodium Glutamate (MSG), but researchers have been unable to scientifically prove the allergy.

Health issues can be avoided by using natural food additives (herbs and spices) derived from plants and other natural sources (Henrietta, 2017). Some of the health effects attributed to natural herbs and spices include antioxidant, anti-microbial, and anti-inflammatory effects as well as potential protection against cardiovascular disease, neurodegenerative, type 2 diabetes, and cancer (Christine, 2022). Herbs and spices have played and continued to play important roles as flavoring agents in food preservative and medicine for centuries. The aim of this paper was to review the health benefits of natural herbs and spices, and their implications for Home Economics education. Specifically, this paper will highlight the classifications for herbs and spices according to their usage, itemize the general importance of herbs and spices, it will also describe common Herbs and Spices and their health benefits, and enumerate the implications of herbs and spices for healthy living and the potential health benefit of some among the most commonly used herbs and spices such as garlic, ginger, turmeric, cloves, black pepper, cinnamon, rosemary, thyme, Aloe-vera and bay leaves will be reviewed. The aim also is to create awareness towards natural herbs and spices and ignored contemporary food habit hence review the risk associated with synthetic food seasonings. A total of 10 herbs and spices were initially chosen, including garlic, black pepper, clove, ginger, Curcumin, Aloe-vera, nutmeg, rosemary, bay leaf, and thyme. In many studies, the herb or spice of interest was administered in the form of a capsule or extract and very few studies were performed with actual foods. Although the daily intake of herbs and spices is very low compared to most other foods, this important set of food seasoning agents should not be underestimated, especially given their potential benefits to human health.

According to Dini (2018), herbs and spices have been used for generations by humans as food and to treat ailments. Scientific evidence shows that many of these herbs and spices do have medicinal properties that prevent disease. A growing body of research has demonstrated that the commonly used herbs and spices such as garlic, black cumin, cloves, cinnamon, thyme, allspices, bay leaves, mustard, and rosemary, possess antimicrobial properties that, in some cases, can be used therapeutically. According to Henrietta (2017) Other spices, such as saffron, a food colorant; turmeric, a yellow colored spice; tea, either green or black, and flaxseed do contain potent photochemical, including carotenoids, curcumins, catechins, lignan respectively, which provide significant protection against cancer (Peter, 2019).

### Classification of Herbs and Spices

The herbs and spices according to usage are classified in four parts: Medicinal herbs, culinary herbs, Aromatic herbs, Ornamental herbs.

**Medicinal Herbs:** Medicinal plants, also called medicinal herbs, have been discovered and used in traditional medicine practices since prehistoric times. Over 2,300 years ago, Hippocrates said, let food be thy medicine and medicine be thy food. At that time, natural medicine was simply medicine there were no pharmaceutical companies, but herb garden. We have left those days behind to a great degree, but we have not forgotten them. Many modern drugs are modeled on natural substances still readily available today. Medicinal herbs have been discovered and used in traditional medicine practices since prehistoric times (Peter, 2014). Plants synthesize hundreds of chemical compounds for various functions including defense and protection against diseases. An example is the bark of willow tree which contains salicylic acid, the active ingredient of aspirin and it has been used to relieve pain and reduce fever. Ebers and Lund (2019) from ancient Egypt, people in 1550 BC describe over 850 plant medicines. This formed the basis of pharmacopoeias for 1500 years. Drug research sometimes makes use of ethno botany to search for pharmacologically active

substances. Medicinal herbs have curative powers and are used in making medicines because of their healing properties.

**Ornamental Herbs:** Ornamental plants are plants that are grown for their beauty rather than their practical use. There are many different types of ornamental plants, and they can be classified in many different ways. Some common ways to classify ornamental plants are by their type of flower, the way they grow, or the color of their leaves. Ornamental plants can be used to add beauty to any garden or landscape (Fidler, 2019). Ornamental herbs are used for decoration because they have brightly colored flowers and foliage they include: yarrow, lavender, jewelweed, fuchsia, chicory and marigold.

*Yarrow (Achillea millefolium):* Yarrow flowers grow in clusters of tiny blooms, with colors that range from **white to yellow to bright pink**. Their leaves are similar to those of the fern plant. Yarrow is popular among many gardeners for its lovely colors. In addition, this plant can provide a number of health benefits - most importantly, it can **reduce inflammation**. A **yarrow tea** can not only reduce fever, but also relieve stomach discomfort (Rosenblatt, 2018)

*Lavender (Lavandula spp.):* Well-known for their delicate **purple blossoms** as well as their **fragrant, soothing scent**, lavender plants are a great ornamental and aromatic addition to any herb garden. But lavender's scent is more than just enjoyable - it can actually help to **reduce depression and anxiety**. Studies have found that lavender's aroma alters brainwaves, helping to relax the body and improve mood. A few drops of **lavender essential oil** in a warm bath can help relax your nerves at the end of the day (Dan, 2020).

*Jewelweed (Impatiens capensis):* The cup-shaped, **bright orange flowers** of jewelweed, also called touch-me-not, bloom in small clusters along the stem. As many other *Impatiens* species, its beautiful flowers are a lovely addition to any garden. Since they also offer a useful benefit of **soothing the skin**, they can be applied topically on skin irritations to reduce pain, especially the ones caused by burns. In order to relieve the irritation caused by poison ivy, rub jewelweed flowers directly over the affected area (pillans, 2016)

*Fuchsia (Fuchsia spp.):* Fuchsia is known for the bright pinkish-purple color of its flowers, which inspired the name of the color fuchsia. Its beautiful blooms add a perfect vibrant touch to any garden. Additionally, fuchsia has a number of health benefits. Notably, it can be used to help lower blood pressure thanks to its high content of diuretic tannins, which flush excess of sodium from the body (Dan, 2020)

*Chicory (Cichorium intybus):* Not only does chicory have lovely bluish-purple flowers that will add a nice touch of color to our garden, but it can also help prevent liver damage. Chicory contains active compounds, lactucin and lactuprikin, both of which have been shown to possess a hepatoprotective action. A chicory infusion will encourage bile flow and help release toxins by stimulating urination (Jiang, 2019)

*Marigold (Tagetes erecta):* Often confused with the also popular calendula, marigold's flowers (also known as Mexican or Aztec marigold) have a bright, summery orange-yellow color and a distinctive pompom shape that make them stand out in any garden or backyard. The leaves and flowers of marigold can be made into herbal remedies, which are usually taken to protect the body against bacteria. Marigold receives its antibacterial properties from its flavonoids and terpenoids, which are effective at killing many different types of harmful microorganisms (Amy, 2022)

**1. Culinary Herbs:** Culinary herbs are that annual, biennial or perennial plant whose green part, tender root, or ripe seeds have an aromatic flavor and fragrance, due to their volatile oil or to other chemically named substances peculiar to the individual spices. The herbs having a pleasing scent are called sweet since they have been long used in cookery to add their characteristic flavors to soup, stew, dressing, sausage, and salads. They are popularly called culinary (Fidler, 2019). Culinary herbs are herbaceous plants that are used to add flavor and color to all type of meals, probably the mostly used as cooking herbs because of their strong flavors like mint, parsley, basil, bay leaf, lemon grass, oregano.

2. **Aromatic Herbs:** The name is a reflection of the pleasant odor that many of these herbs contain. Some plants are naturally more aromatic than others. Aromatic herbs contain natural chemical component known as essential oils, which are responsible for their noticeable scents (Ebers&Lund, 2019). These highly volatile compounds are found in the leaves and sometimes stems and are released when the leaves are disturbed. Many aromatic herbs and spices are considered beneficial to health, but what distinguishes them more than anything else is their high antioxidants content. Antioxidant inhibits free-radicals, those molecules that are produced by the cells due to biochemical reactions which use oxygen to produce energy and by external factors, namely from excessive physical activities such as professional sport and from pollution, drugs such as cigarettes, alcohol and from excessive exposure to ultra violet rays. Aromatic herbs include; garlic, rosemary, thyme, curcumin, cinnamon, ginger, and mix of spices called curry.

### General Importance of Herbs and Spices

1. Spices are functional foods; these are foods that have a beneficial effect on certain target functions in the body beyond basic nutritional requirement. Example the seed of black pepper (*p.guineense*) are prescribed for women after childbirth to enhance uterine contraction. It is also used locally in treating rheumatic pain, serves as an anti asthmatic agent, burns fat content in the body, the oil distilled from the seed is use in perfumery and for making soap. The leaves are used to regulate menstrual cycle, also an ingredient in remedy for female infertility. The root and fruits are incorporated in remedy for sexually transmitted diseases, especially gonorrhoea and syphilis (Iwu, 2018)
2. The antioxidant properties of herbs and spices prevent chronic diseases such as cancer, arthritis and cardiovascular diseases (Dini, 2015). These appear to be through the direction of their constituent Photochemicals particularly Polyphenols. It also serves as food preservatives against oxidative degradation and improves the stability of products.
3. Spices are used to dye food products because they are an excellent source of natural color pigments and safe for human consumption. Example is cardamom and coriander which are well-known for their flavor.
4. Fragrant herbs, such as peppermint, cloves, and turmeric, they give the food a pleasing scent and enhance the flavor (Dini, 2015).
5. Certain cough syrups contain ginger and cloves. They are recognized for their expectorant properties, which help mucus thin and expel from the lungs.
6. Traditional medical practitioners offer antipyretic herbs such as black pepper, sandalwood, and safflower to decrease fever and the heat produced by the disease (Fidler, 2019).
7. Some herbaceous plants are used to neutralize the stomach's acid production. Marshmallow roots and leaf is an example. They function as antacids. These herbs help to keep the healthy stomach acid required for optimal digestion (Christine, 2014)
8. Many herbs are utilized as blood purifiers to help transform or improve a long-term condition by removing metabolic poisons. 'Blood cleansers' is another name for them. Certain herbs boost a person's immunity, lowering the risk of illnesses like fever (Dorn, 2017)
9. Plant medicines were reported to be used by Indian sages to treat poisons from animals and snake bites (fiddler, 2019)
10. Many herbs and spices contain antioxidants. According to Joe (2023), antioxidants from spices such as curcumin (turmeric), cloves (eugenol) and red pepper (capsaicin) where experimentally shown to control oxidative stress in cell due to their antioxidant properties. Polyphenol from ginger and turmeric have also been shown to display radicals scavenging properties.
11. Many herbs and spices contain antimicrobial properties. Herbal antimicrobials are natural products that are as beneficial as mild antimicrobials. The active ingredients of these natural products may have antibacterial and anti-infective properties. Herbal antimicrobials may either interfere with the bacteria's ability to grow or multiply or directly kill them. Examples of Plants and herbs (oregano, garlic, parsley, sage, coriander, rosemary, and lemongrass), spices (cinnamon, clove), oils (citral) or

organic compounds (vanillin) have been used alone for their antimicrobial and antioxidant properties or in combination with other techniques for food preservation.

### Description and Health Benefits of the Selected Herbs and Spices

In addition to adding flavor and nutrients to recipes, herbs and spices contain a variety of compounds that may help reduce inflammation, improve symptoms of certain medical conditions, and protect against the development of chronic diseases. Here are some selected herbs and spices for better health.

1. **Ginger:** This is one of the most commonly consumed dietary condiments in the world, ginger is high in gingerol, a substance with potent anti-inflammatory and antioxidant properties. Ginger is generally considered to be safe for human consumption. The scientific name is *Zingiber officinale*. The health benefit of ginger include its ability to relieve indigestion, improve immunity, relieve nausea and stomach upset, healthier skin, aid in weight loss, prevent cardiovascular diseases and improves brain function(Christine,2014).
2. **Garlic:**This is a plant in the onion family that's grown for its distinctive taste and health benefits. It contains sulfur compounds, which are believed to be responsible for some of those health benefits. The scientific name is *Allium sativum*. The health benefit of garlic is that it is highly nutritious but has very few calories. Garlic can help protect against illness, including the common cold, the active compound in garlic can reduce blood pressure, garlic improves cholesterol levels, which may lower the risk of heart disease, garlic contains antioxidants that may help prevent Alzheimer's disease and dementia, eating garlic may help detoxify heavy metal in the body and may improve bone health (Richter, 2022).
3. **Cloves;** is the common name for the herb *Eugenia caryophyllata*, belonging to the myrtaceae family. A range of bioactive compounds including some potent antioxidants and antimicrobial are present in cloves, which are the dried flower buds of the cloves tree. Cloves are great sources of beta carotene, which help gives them their rich brown color. The carotene family of pigment is an important antioxidant and provitamins. Carotene pigment can convert into vitamin A, an important nutrient for keeping your eyes healthy. The scientific name of cloves is *syzygium aromaticum*. Health benefits of cloves includes reduced inflammation, fewer free radicals, reduce ulcer, improved liver function (Agbogidi, 2019).
4. **Black pepper;** scientifically called *piper guineen*, black pepper is a flowering vine that is cultivated for its fruit. This fruit is dried and used intensively as spice and seasoning in both western and eastern cuisines. Black pepper also possesses antibacterial, antioxidant, immune-boosting and fever reducing properties. The scientific name is *piper guineen*. Health benefits of black pepper include; improve digestive health ,prevents cancer, promotes weight loss, relieves cold and cough, fight infection, has antioxidant benefits, enhance brain health, improves fertility in men, helps quit smoking, helps treat diabetes, fights wrinkles, exfoliates the skin, helps treat dandruff and revitalized hair (Henrietta,2017).
5. **Turmeric;** sometimes called curcumin, is one of the most popular spices used today for cooking and health benefits. Laboratory studies have shown that turmeric has some anti-inflammatory, antioxidant, antiviral, and antiparasitic benefits. Research shows that turmeric is most effective for its anti-inflammatory and antioxidant properties (Iwu, 2020). As a chain breaking antioxidant and anti-inflammatory spice, turmeric improves oxidative stress, which is ability to scavenge toxic free radicals in the body. Free radicals are tissue damaging molecules with an uneven number of electrons. With its high antioxidant content, turmeric can work to reduce the risk of free radicals forming and reducing the effect of stress on the body. The scientific name of turmeric is *curcuma longa*. Health benefits of turmeric include: Reduces arthritis symptoms, boosts immune function, helps reduce cardiovascular

complications, helps prevent and treat cancer, helps manage irritable bowel syndrome (IBS), prevents Alzheimer's disease, protects against liver damage, gallstone and manage liver conditions, helps prevent and manage diabetes, helps to treat and manage health conditions and also helps with weight loss.

6. **Nutmeg;** (*myristica fragrant* of the family myristicaceae) is a plant which bears seeds, the seeds are ground in to powder and commonly refer to as nutmeg. Indonesia produces the majority of the world's nutmeg. The spice flavors many dishes, both savory and sweet, in cuisine across the globe. The Scientific name of nutmeg is *myristica*. Health benefits of nutmeg include: dental health, effective against diarrhea, reduces bad cholesterol, protects against cancer, regulates blood pressure, protect the liver, oral health and improves digestion (Agbogidi, 2019).
7. **Aleo-vera:** This is a popular medicinal plant with antioxidant and anti-bacterial properties. Aleo-vera is a thick, and short – stemmed plant that stores water in its leaves. Health benefits of aleo-vera: It contains healthful plant compounds, it has anti-oxidant and anti-bacterial properties, it may be useful for reducing dental plaque, accelerates wound healing, prevents wrinkles, it reduces constipation and lowers blood sugar (Joe, 2018).
8. **Rosemary:** this is an herb commonly used in savory cooking. Rosemary is a key ingredient in many pasta sauces and pizza recipes. The perennial woody herb also has a long history of being used for medicinal and health benefits. Rosemary is a rich source of antioxidant and anti-inflammatory compounds which helps to boost the immune system and improve blood circulation. The Scientific name of rosemary is *salvia rosmarinus*. Health benefit of rosemary: Neurological protection, prevents brain aging, enhances memory and concentration and also improves digestion (Dini, 2015).
9. **Thyme :** (*thymus vulgaris*) is an herb with a distinct smell. The flowers, leaves and oil are commonly used to flavor foods and are also used as medicine. Thyme is very well known for its medicinal benefits. The leaves, flowers and oil of thyme have been used to treat various diseases and ailments. Thyme contains antiseptic properties which makes it a very effective remedy against colds, coughs and other respiratory diseases. Thyme also possesses antibacterial properties and is often used in facewashes and anti-acne creams. Thyme contains an extract that can help lower blood pressure. Thyme is also rich in vitamin K, iron and calcium, which is essential for maintaining healthy bones. Thyme contains chemicals that might help treat bacterial and fungal infections. Health benefits of thyme: Fighting acne, lowering blood pressure, helping to alleviate cough, boost immunity, contains disinfecting agents, repelling pests, aromatherapy, boosting mood, culinary uses, preventing bacteria and infections, help to treat yeast infection, help treat some certain types of cancer (Joe, 2018).
10. **Bay leaf:** also called *laurel leaf*, leaf of the sweet bay tree (*laurusnobilis*), a popular spice used in pickling and marinating and to flavor stews, stuffing fish and meat. Bay leaf is delicately fragrant but has a bitter taste. They contain approximately 2 percent of essential oil, which is a principal component of cineole. Health benefits of bay leaf include: Improving insulin resistance, alleviating urinary tract symptoms and menstrual cramps, fighting cancer, strengthening the immune system against infections, reduces inflammation and regulating blood sugar (Henrietta, 2017).

### Implications of Herbs and Spices for Home Economics Education

The implications of herbs and spices to Home Economics education include the following:

1. The use of natural herbs and spices should be emphasized in the food and nutrition curriculum at all educational levels. This will be a roadmap to sustainable family health.

2. The sales of herbs and spices can be an entrepreneur endeavor which Home Economics students may be encouraged to engage in. Fresh herb can be sold in local retail market and provide useful additional income for individuals and the family.
3. The understanding of the usage of natural herbs and spices as food preservatives, food items will be a dynamic contribution to ongoing discourse about sustainable food consumption among Home Economics educators and students.

### Conclusion

Spices and herbs are plant derived substances that add flavor to any dish. It is difficult to distinguish between the two. Herbs and spices make flavorful additions to meals, also powerhouses for essential nutrients that greatly benefit the body, some of the health effects attributed to natural herbs and spices include antioxidant, anti-microbial, anti-inflammatory together with photochemical effects, People may experience some health improvements from incorporating herbs and spices into their diet, but should not depend upon them solely for full treatment of conditions. Other health issues can be avoided in the future by using natural food additives (herbs and spices) derived from plants and other natural sources. Also, Home Economics students and educators stand to benefit immensely from the inclusion of theoretical and practical learning content on herbs and spices into the instructional process.

### Recommendations

1. Parents and guardians should be more concerned about family health by totally replacing artificial food seasonings with natural herbs and spices.
2. Home Economics instructors should imbibe the use of natural herbs and spices into the practical food demonstration classes. This will encourage the students to imbibe the same safe and efficient practice.
3. Government at all levels should encourage by creating orientations and informing people about the health benefits and effect of synthetic seasonings.

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