**Common Diseases and Plant Derived Medicines – Plants and human health**

An interesting field of Biology is the study of microorganisms that cause disease. Throughout this course you will be studying organisms including: Viruses, Bacteria, Protists, Fungi, and Plants. This assignment is intended to assist you in making connections from Biology to everyday life and is broken into **3 components.** First, you must research details around the causes/mechanisms of a particular **disease** caused by a microorganism, and second, depending on the microorganism you choose, you must research the structures and habitat of a **plant** associated with that disease Third, you must describe the **medicine** derived from the plant.

**The Specifics:**

1. COMPONENT 1: **THE DISEASE** To produce a 300-500 word description of specific details of your chosen disease and its infectious agent (virus, bacteria, protist, or fungus) (due??).

**Required Details about the disease:**

1. **Structure** – What does the bacteria/virus/bacteria/protist/fungus look like? (cutting and pasting a picture is acceptable as long as it is described and significant structures are labeled)
2. **History/Cause** –What causes the disease? Who/what does the disease typically infect? Describe historical examples of large-scale infections? Where did the disease originate and where are you likely to contract it?
3. **Transmission** – How is the disease transmitted?
4. **Symptoms** – Describe, including images, the symptoms of the disease?
5. COMPONENT 2: **THE PLANT** To produce a 300-500 word description regarding the plant that can be used to treat, or that is infected by, your disease causing microorganism.

**Required Details about the plant:**

* 1. What is the common and scientific name of the plant?
  2. Where does the plant grow (habitat) Make sure to give 3 or 4 specifics about the regions of the world the plant grows in as well as specific characteristics of climate, rainfall, and type of land/soil best suited to the plant
  3. What does the plant look like (cutting and pasting a picture is acceptable as long as it is referenced and significant structures are labeled)?

1. COMPONENT 3: **THE MEDICINE** To produce a 300-500 word description regarding the medicine that the plant produces that helps treat the disease/infection

**Required Details about the medicine derived from the plant –**

1. How does the medicine work to treat the disease/infection?
2. Are there any side effects of the medicine?
3. How effective is the medicine?
4. When/how were the plant’s medicinal properties discovered?
5. What part of the plant (stems, roots, leaves) is used to derive the medicine
6. How is the medicine administered (tea, cream, concentrated in pill form)?

**The Options** (please select **ONLY ONE** disease/plant combination to research):

FEEL FREE TO FIND A DIFFERENT DISEASE/MEDICINAL PLANT COMBINATION BUT MAKE SURE YOU ASK ME FOR APPROVAL FIRST.

**Diseases that affect humans**

|  |  |
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| **Microorganism (disease)** | **Associated Medicinal Plant** |
| **Virus** |  |
| 1. *Human Papilloma Virus (genital warts)* | Mayapple (podophyllin) |
| 1. *Herpes simplex (herpes)* | Tansy |
| **Fungus** |  |
| 1. *Candida albicans (yeast infection)* | Thyme (thymol) |
| 1. *Tinea pedis (athletes foot)* | Tea tree (melaleuca oil) |
| **Bacteria** |  |
| 1. *Staphylococcus aureus (diarrhea)* | Barberry (berberine) |
| 1. *Mycobacterium leprae (leprosy)* | Chaulmoogra (chaulmoogric acid) |
| **Protist** |  |
| 1. *Plasmodium (malaria)* | Cinchona (quinine) |
| 1. *Amoeba (diarrhea)* | Ipecac (emetine) |