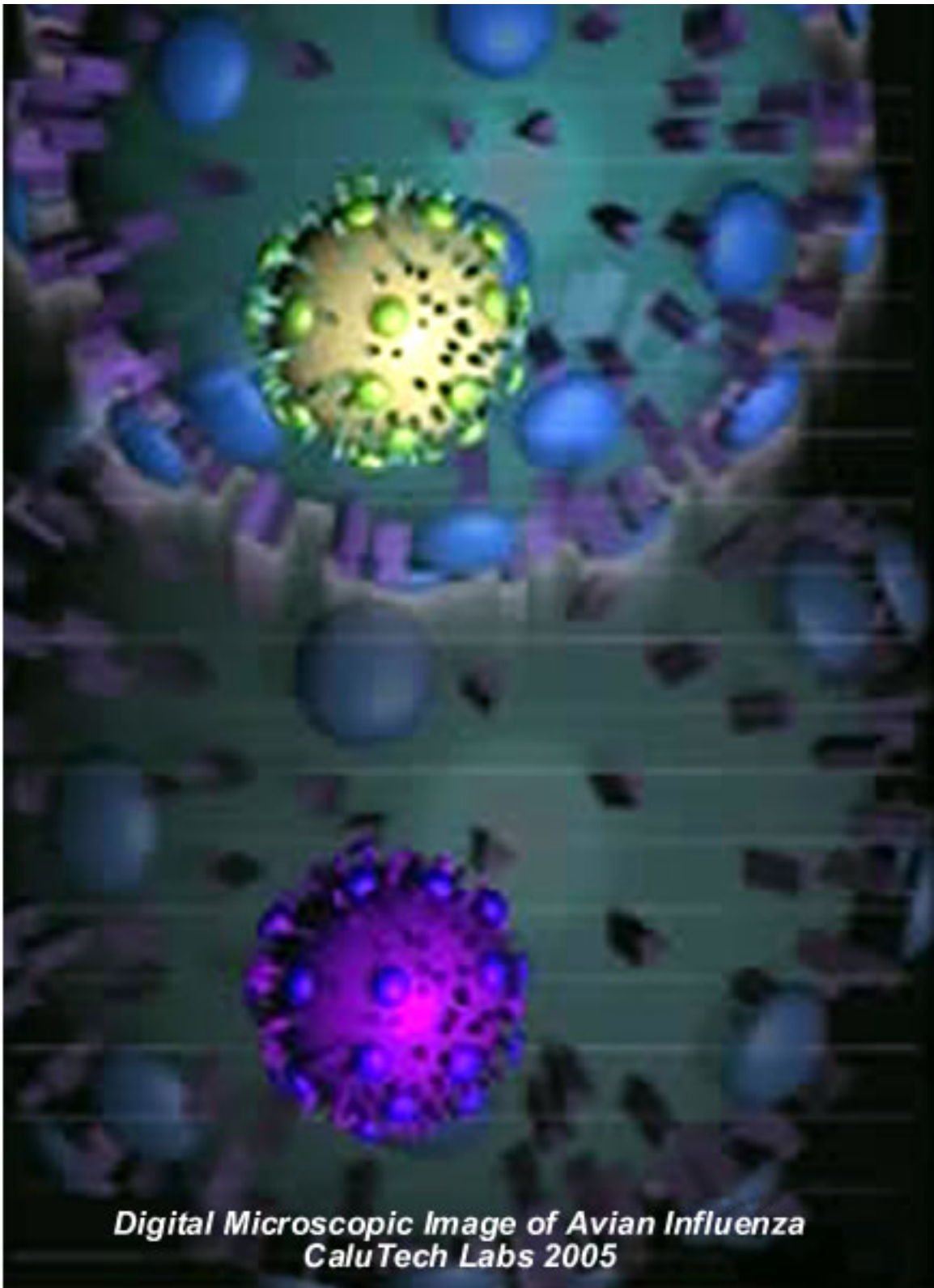


**AVIAN INFLUENZA**  
*AND HOW CALUTECH PRODUCTS CAN HELP*



*Digital Microscopic Image of Avian Influenza*  
*CaluTech Labs 2005*

## **Avian Influenza (Bird Flu) (HPAI) H5N1)**

As of November 25, 2005 the World Health Organization had reported 132 human cases of bird flu. We want to inform you that to date the only spread of this virus is by contact with infected poultry, or contact by infected surfaces, which were infected by the infected poultry or other infected creatures including humans with the virus (such as a corpse) or the poultry themselves. Bird flu is not yet, as of November 25<sup>th</sup>, 2005, an airborne spread disease infecting humans.

Today, the virus is now spreading to birds in distant countries. There is evidence that some infected birds may survive and excrete the virus for 10 days or more, increasing their ability to spread the virus to distant flocks. H5N1 virus mutates quick and shows a strong will to acquire genes from influenza viruses infecting other species. The virus has the potential for antigenic change and has a strong and worrisonic pandemic potential throughout the entire world. Previous pandemics include the 1918 Spanish flu (H1N1), the 1957 Asian flu (H2N2) and the 1968 Hong Kong flu (H3N2). For any influenza virus, Avian or other, to cause a pandemic the virus must first undergo many genetic changes. The virus must first infect humans like the common cold does, it must be transmissible from person to person, and it must continue to grow stronger. As of the date of this report this has not yet happened, and there is no way to predict if it ever will.

According to the World Health Organization the incubation period of avian influenza A (H5N1) may be longer than for other known human influenzas. In 1997, most cases occurred within 2-4 days after exposure; recent reports indicate similar intervals but with ranges of up to 8 days. A wide variety of species of birds are capable of being infected with the H5N1 virus. The primary wild birds species affected by HPAI H5N1 are ducks, geese, and swans, but also gulls. Among domestic flocks the same species but also chickens are highly susceptible. In addition, avian influenza viruses are shed in large quantities in the feces of infected birds and may survive for days. The virus has also been found to survive on objects in patient rooms where infected patients were treated, for several hours. Because the virus is not so much an airborne contamination risk objects are generally infected only if they are within 6 feet of a patient.

Research suggests an alternative means for the aid in prevention of Avian Flu, either on surfaces or if it were to become airborne is ultraviolet germicidal irradiation, or UVGI. Ultraviolet light at a wavelength of 253.7 nanometers (fractional angstroms) is a germicidal wavelength of the UV shortwave radiation light band. Different levels of microwatts are normally used to measure the amount of intensity required to be discharged from an ultraviolet lamp at this wavelength for destruction of microbes.

The Avian flu virus can be eradicated with definite results with 6,600 microwatts of UV light (cm<sup>2</sup>). The bird flu virus is very similar to the influenza virus most of us humans can contract, which allows UV-C light (without ozone UV-V) to modify its DNA and cause its death. Influenza strains die at an average 6,600 microwatts of exposure, and CaluTech products operate far above this level.

