# The Effects of Ceremonial Smudging on Indoor Air Quality

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Last year the researcher experimented to see if smudging (burning) the four sacred medicines (sage, sweetgrass, cedar, and tobacco) emitted carcinogens. Sage is the most commonly smudged of the sacred medicines and used traditionally to clean the air. The researcher wanted to determine if indoor air quality was negatively affected by smudging sage. It was hypothesized that the smudging of sage would negatively affect the indoor air quality, but not be over EPA standards, and that sage from different locations would have different results. Sage for smudging was obtained from individuals--all sage was to have been smudged if it wasn't used in this research. Samples came from South Dakota, Minnesota, and California. The sage was burned in a box with an air sampling pump. Except for one result that was likely an error, Sulfur dioxide, Lead, Nitrogen dioxide, and total oxidants for all samples came out essentially as zero. Carbon dioxide and Selenium were at safe levels according to EPA standards. For Particulates every single test was above the EPA's 35 µg/m3 standard. The National Ambient Air Quality Standards (NAAQS) are standards established by the US EPA to protect the public health from the 6 criteria pollutants (US EPA, 2006). These particles could cause all kinds of health concerns as they enter into the blood stream and lungs such as difficulty breathing, asthma, lung and heart diseases, and even death for those with preexisting heart problems. People who follow the traditional Native American ceremonies should be aware of the risks associated with smudging indoors.

**Awards Won:**