CHEMICALS: Scientists find new toxin in pine tree fires

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In a discovery that may change how scientists view the impact of forest fires on human health, researchers have found that burning pine trees emit a new class of chemicals from a family of compounds known for their ability to alter human DNA.

Alkaloids, which are found naturally in plants, can be key nutrients for some organisms and can have a beneficial effect on humans. But in high enough doses, they can be potent toxins.

A team of researchers from the Pacific Northwest National Laboratory has found close to 100 different alkaloids in microscopic smoke particles floating up from laboratory-simulated forest fires.

"When roots, leaves and needles get burned, these chemicals can be released without modification into the atmosphere," said researcher Alexander Liskin. "They can be translated as aerosol particles hundreds or thousands of miles. It is possible that there is an impact on humans, animals, and that they get into the groundwater.

But the study is preliminary, Laskin said, and much remains to be discovered about how the particles interact with water vapor, sunlight and other aerosols once airborne (Michael Reilly, Discovery Channel/MSNBC, April 30).