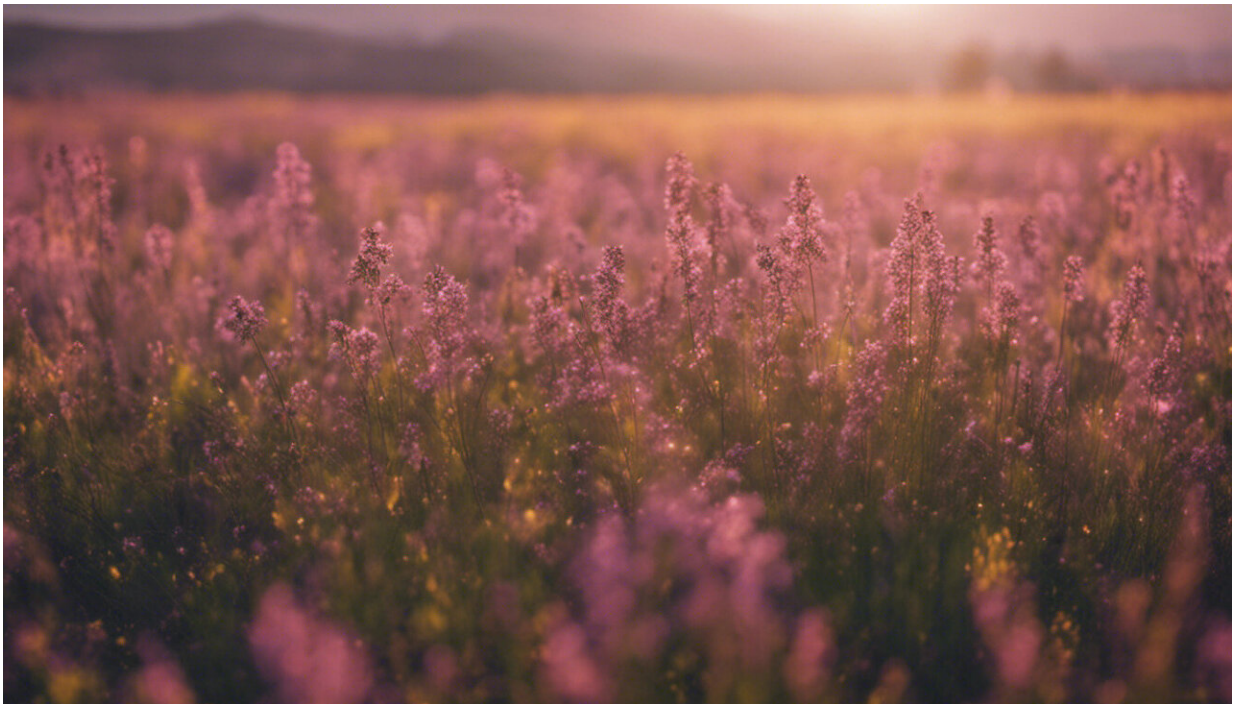


# The secret life of smoke in fostering rebirth and renewal of burned landscape

January 27 2010

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Credit: AI-generated image ([disclaimer](#))

The innermost secrets of fire's role in the rebirth and renewal of forests and grasslands are being revealed in research that has identified plant growth promoters and inhibitors in smoke. In the latest discovery about smoke's secret life, an international team of scientists are reporting discovery of a plant growth inhibitor in smoke. The study appears in

*ACS's Journal of Natural Products.*

"Smoke plays an intriguing role in promoting the germination of seeds of many species following a fire," Johannes Van Staden and colleagues point out in the report. They previously discovered a [chemical compound](#) in smoke from burning plants that promotes [seed germination](#). Such seeds, which remain in the undercover on [forest](#) and meadow floors after fires have been extinguished, are responsible for the surprisingly rapid regrowth of fire-devastated landscapes.

In their new research, the scientists report discovery of an inhibitor compound that may block the action of the stimulator, preventing germination of seeds. They suspect that the compounds may be part of a carefully crafted natural regulatory system for repopulating fire-ravaged landscapes. Interaction of these and other compounds may ensure that seeds remain dormant until environmental conditions are best for germination. The inhibitor thus may delay germination of seeds until moisture and temperature are right, and then take a back seat to the germination promoter in smoke.

**More information:** "Butenolides from Plant-Derived Smoke: Natural Plant-Growth Regulators with Antagonistic Actions on Seed Germination", *Journal of Natural Products*, [pubs.acs.org/stoken/presspac/p ... /10.1021/np900630w](https://pubs.acs.org/stoken/presspac/p.../10.1021/np900630w)

Provided by American Chemical Society

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