

The science of cloud seeding

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Experiments to seed clouds and coax them to produce more rain started 70 years ago. Early practitioners claimed a 10 percent boost in precipitation, but their studies lacked statistical rigor. The science of rainmaking has evolved since then—but how reliable is it now? An article in *Chemical & Engineering News (C&EN)*, the weekly newsmagazine of the American Chemical Society, takes a look.

Janet Pelley, a contributing editor at *C&EN*, reports that for cloud seeding science to come into its own, it needs to address some major challenges. To start, scientists have yet to understand a critical step in natural rainmaking: ice nucleation. This process involves water vapor freezing onto particles, which leads to [precipitation](#). Another significant glitch in experimenting with seeding is the difficulty with running controlled experiments in real [clouds](#). Once a cloud is treated, scientists can't measure how much [rain](#) it would have produced if left alone.

To chip away at these obstacles, scientists have developed more sophisticated experiments and simulations using sensing tools and computer models. Recent multi-year studies have found hints that seeding might yield a boost in precipitation. But results weren't statistically significant. Remote sensing is giving scientists a better view into cloud dynamics in real time and could help advance the [science](#). As dozens of countries invest millions of U.S. dollars in cloud seeding, the new studies could be well worth the effort.

More information: "Firm footing for cloud seeding"
cen.acs.org/articles/94/i22/Doing-really-work.html

Provided by American Chemical Society

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