



Introduction of Seeding Agents

Water resources are increasingly taxed by exploding demand and continued population growth. The world's population is projected to grow over 40% in the next 45 years.

Weather modification, commonly known as **cloud seeding**, is the application of scientific technology that can enhance a cloud's ability to produce precipitation. Weather Modification, Inc., is on the forefront of scientific technology to maximize water availability worldwide. Application of scientific concepts and extensive scientific experimentation has proven that cloud seeding increases the amount of precipitation.

Cloud seeding useful in the following applications:



Increasing Precipitation

The most common application of cloud seeding is to increase precipitation, possible with both warm and cold clouds.

There are two primary methods employed to stimulate precipitation. One, **hygroscopic seeding**, affects **warm cloud** processes. The other, **glaciogenic seeding**, initiates cold cloud processes.

Though occasionally both techniques may be helpful, in most cases one can be utilized more effectively than the other. In addition, either technology can be applied from the surface (ground-based) or from an aircraft. Weather Modification, Inc. can help you decide which method will be most effective.

Augmenting Snowfall

Glaciogenic seeding can also be used to increase precipitation from stratiform and **orographic clouds**. In such cases, seeding may be accomplished through either ground-based or airborne modes. By increasing snowpack and resultant spring runoff, subsequent water supplies for hydropower are increased. In addition to alleviating the need for alternative costly power supplies, cloud seeding increases the water availability for municipal, recreational, and environmental interests.

Enhancing Rainfall

Efforts to increase rainfall during the warm seasons are typically aimed at **convective clouds**. While it is theoretically possible to seed such clouds using ground-based equipment, targeting from aircraft is much more efficient and accurate. It is usually possible to affect the cloud through releases of a seeding agent in sub-cloud updrafts, or by dropping the seeding agents directly into the upper regions of the clouds.

Warm season glaciogenic seeding is typically applied to treat supercooled **cumulus congestus** clouds, either by releasing the ice-forming (nucleating) seeding agent in the updraft beneath the actively-growing cumulus, or by dropping the nucleating agent directly into the supercooled cloud top. The seeding agents can produce **ice** at significantly warmer temperatures than the natural process. This is how glaciogenic seeding gives the treated cloud a head start in producing precipitation.

When clouds do not grow tall and cold enough to produce precipitation through the **Bergeron process**, it may be possible to stimulate precipitation growth by seeding these warm clouds with **hygroscopic seeding** agents. This approach can be quite successful through stimulation of the warm cloud precipitation processes. Hygroscopic seeding is normally done from aircraft flying in the sub-cloud updrafts, in order to affect the initial cloud droplet development which occurs in this zone.



Mitigating Hail Damage



Dispersing Fog

Enlist our team of cloud seeding experts.

Whether you are looking for a small operation or a full program, Weather Modification, Inc. can ensure your cloud seeding project runs smoothly. From Federal Aviation Administration (FAA) approved aircraft installations, configured for aerial cloud seeding and **cloud physics**, to ground-based seeding equipment and training, Weather Modification, Inc., has the equipment, experience and knowledge you need.



Types of Cloud Seeding:

Aerial Cloud Seeding

Ground-Based Cloud Seeding