

Weather, Weather Inc.

We're here for you, rain or shine.



[Weather, Weather Inc.](#)

[Ancient Practices](#)

[How Cloud Seeding Works](#)

[Future Developments](#)

[Comments/
Suggestions](#)

[References](#)

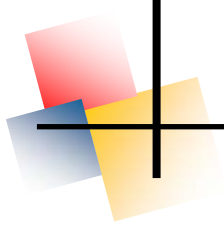
Rain... when you want it, where you want it.

Does this sound too good to be true ? If it does, then you haven't heard of our company.

Given the right conditions, we can give you much-needed rainfall Or you get your money back.

Advances in both technology and meteorology now allow us to reliably induce rainfall when needed. We know so much more about the physics of cloud formation and we can now use powerful computers to model the complicated processes within the atmosphere.

Click on the other links here to learn more about the processes that we use and some ancient practices that we find amusing.



Ancient Practices

People of long ago tried many methods of inducing rain. Some of these made some sense but others were just outright funny.

What were these practices ?

- An Ancient Mayan civilization believed that rain could be induced by throwing a middle-aged woman into a water well.
- In 18th century England, it was believed that by ringing bell towers to make a lot of noise, moisture could be shaken down from clouds and fall as rain.
- In a similar vein, soldiers believed that an increase in rainfall during battles was due to the firing of shells and the noise that was created.
- C.W. post had the same idea when he exploded dynamite into the sky hoping that this would induce rainfall.

An ancient civilization believed that they could induce rain by throwing middle aged women into a water well.

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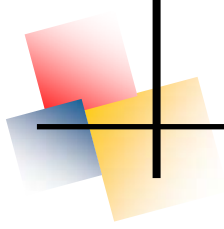
Ancient Practices

How Cloud Seeding Works

Future Developments

Comments/
Suggestions

References



How Cloud Seeding Works

How Clouds Form

To understand how cloud seeding works, we must first understand how clouds form.

A cloud is basically a large pile of suspended water droplets. These are extremely small and are too light to fall to the ground as rain. How do they get there?

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Ancient Practices

How Cloud Seeding Works

Future Developments

Comments/
Suggestions

References

When RH reaches 100%,
condensation starts and a cloud
is formed.



Rising air expands, cools,
leading to an increase in RH

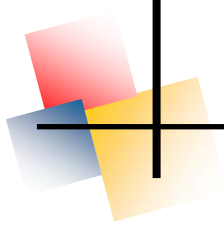


Warm air becomes less
dense and rises.

When air is warmed it expands and becomes less dense. Since warm air is less dense than the surrounding air, it rises. Decreasing air pressure at higher altitudes causes rising air to expand and cool. Cooling, in turn, causes RH to increase. When air has risen to a certain level, RH reaches 100%, condensation starts and a cloud is “born”.

Simple? Not Always.

Next



How Cloud Seeding Works

How Clouds Form

There are instances when condensation starts even when RH is below 100%. It may also happen that condensation does not start even when RH exceeds 100%. What causes this behavior ?

Even in very clean air, very small suspended particles are still present. Water vapor particles collide with these particles and stick to them. Hence, these serve as nuclei on which droplets of water can condense. These particles are known as **cloud condensation nuclei (CCN)**.

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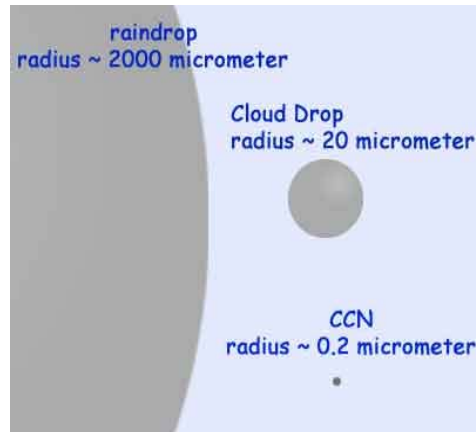
Ancient Practices

How Cloud Seeding Works

Future Developments

Comments/
Suggestions

References

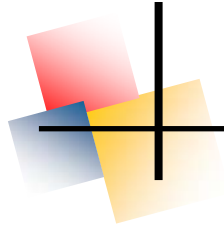


Shown above are the relative sizes of CCN, cloud drops and raindrops.

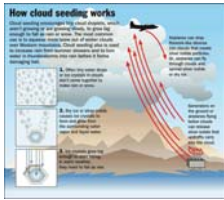
Common condensation nuclei are particles of dust and sulfates from volcanoes, soot and dust from combustion, and salt spray from oceans.

Water vapor can condense more easily on the surface of CCN. Hence, condensation nuclei can trigger condensation even when the RH is below 100%.

In the upper troposphere, very few condensation nuclei are present. In such cases, the RH can be well over 100% without any signs of condensation. The air is then said to be supersaturated. For such cases, condensation can be



How Cloud Seeding Works



Cloud seeding techniques. Click image for a bigger view.

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Ancient Practices

How Cloud Seeding Works

Future Developments

Comments/
Suggestions

References

Cloud Seeding

Seeding a cloud involves the introduction of silver iodide and similar agents into the cloud. These agents have the same structure as ice and serve as nuclei on which water vapor can condense.

In the top illustration, the ice crystals grow very slowly. The addition of silver iodide (middle) causes the crystals to lump together and grow. These larger crystals then fall to the ground as snow or rain depending on the air temperature.

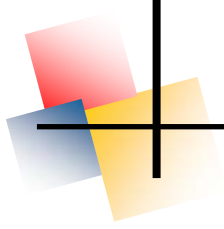


Can all clouds be seeded ?

Spreading silver iodide indiscriminately onto any cloud will only increase your expenses but not rainfall.

Certain requirements must be met for a successful seeding operation:

- The bases of the clouds must be relatively cold and continental
- Cloud top temperatures must be from -10 to -25 °C
- Availability of supercooled water droplets



Future Developments

We are constantly refining our techniques to further improve our services. Here are some of the development areas that are working on:

- The use of a tracer gas (sulfur hexafluoride) that will allow the path of the released silver iodide to be tracked within the cloud. This will significantly improve researches on the effectiveness of cloud seeding and provide information on particular cloud types that are prone to hail formation.
- Use of doppler radar to monitor seeded clouds to see if they indeed produce rain.
- Use of computer programs to analyze radar images of clouds to explore the possibility of seeding warm-weather clouds to produce rain.

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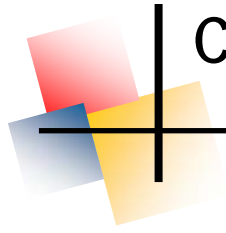
[Ancient Practices](#)

[How Cloud Seeding Works](#)

[Future Developments](#)

[Comments/ Suggestions](#)

[References](#)



Comments/ Suggestions

Weather, Weather Inc.

Ancient Practices

How Cloud Seeding Works

Future Developments

Comments/
Suggestions


References

Feedback

If you have questions that relate to weather modification or comments about any information found on this site, kindly send your **Comments & Contact Information** to the mail address: alvs@up.edu.ph, so that we can respond to you at the soonest possible time.

To contact us:

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References

Weather, Weather Inc.

Ancient Practices

How Cloud Seeding Works

Future Developments

Comments/
Suggestions

References

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