

# Hail Phenomenon in Yogyakarta, What Caused This to Happen?


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There had been a rare phenomenon of the hails in Yogyakarta on Wednesday (03/03) in the area of Tugu Yogyakarta and Turi Sleman. Although this phenomenon happened for only a while, it has successfully intrigued the community. A UGM Climatology Expert, Dr. Emilya Nurjani, revealed that this phenomenon was caused by the cloud of Cumulonimbus that arose vertically beyond the freezing point of water. These clouds rose at an altitude of about 450 meters above sea level to reach 10,000 meters above sea level when the air is in a volatile condition.

"The cloud in the bottom part is considered as a hot cloud that contains water vapor. We recognize it as rain if it falls. Meanwhile, the upper part of the cloud is considered cold that contains ice. This part that falls as hail is due to the temperature of the air on the surface in Yogya and Turi, which later sustained the ice crystals to stay frozen even though they have a smaller size," said Emilya.

Emilya also revealed that in countries with four seasons, the hail was even larger in winter because they also have a cold temperature on their surface. Thus, when the hail fell, it was not melting. The cause is high air humidity and volatile air mass, and the earth's fit surface temperature.



However, this phenomenon in tropical countries is more about weather phenomena with various horizontal and time effects. Stratus clouds are considered not dense and contain water. The rainfall is relatively short, light to moderate rain. Meanwhile, it only affects an area around hundreds of meters to 2 km. On the other hand, the Cumulonimbus (Cb) cloud is rising vertically upwards, but not wide, so that it only afflicts a particular small area, but the rain indeed is quite heavy. "The Cb clouds in Turi and the City may be diversified so that the timing of the events is likely different," she explained.

She stated that this hail phenomenon's main cause is natural conditions with relatively high humidity, unsteady air masses, and fit temperatures on the earth's surface. However, it may also occur due to air temperature changes in the upper troposphere, a point where ice-filled clouds are formed. "If the earth has a low temperature, the ice crystals will fall in the form of ice or hail. Otherwise, if the earth has a hot temperature, the ice crystals will fall in the form of rainwater as is common," she said.

She also mentioned that this phenomenon had not been going for so long because it was highly afflicted by the condition of the Cb volume formed. In general, the hail will be formed in a small size. So when it happens, you will be suggested to take shelter under buildings or inside vehicles, or using umbrellas can also be an alternative.

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