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Humidity and Spread of Coronavirus

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Why in News

Recently, a study by researchers at the **Massachusetts Institute of Technology (MIT)** in the United States found that regions experiencing a monsoon might see a slowdown (not a stop) in transmission of the coronavirus as a result of moderate levels of humidity.

This could help **mitigation strategies in tropical countries** such as India.

Key Points

- The findings show that 90% of the novel coronavirus transmissions have occurred in regions with **temperatures between 3 and 17 degrees Celsius**.
- These regions also had an **average humidity range of 3-9** gram per cubic metre (g/m³).
- These regions comprised the **United States and several European countries** that are inundated by **COVID-19** infections.
- There are comparatively **fewer infections in warmer and humid countries** such as Singapore, Australia, Taiwan and Qatar.

It is also possible that **warmer temperatures retarded the spread of the virus**.

- A series of experimental studies have shown that the **Coronaviruses** are sensitive to humidity and are less likely to thrive at moderate levels of humidity.
- A 2018 study in the peer-reviewed Applied and Environmental Microbiology concluded that
 - Coronaviruses thrived when the **Relative Humidity (RH)** (the proportion of water vapour in the air compared to what's the maximum possible) exceeded 85% or dipped below 60%.
 - There is a **significant decrease in infectivity at mid-range RHs** (60 to 85%).

- A similar experiment that tested the ability of viruses to survive on **stainless steel surfaces**, found that :
 - At 4°C, infectious viruses persisted for as long as 28 days.
 - The lowest level of inactivation occurred at 20% RH.
 - Inactivation was quicker at 20°C than at 4°C at all humidity levels.
 - The slowest inactivation occurred at low levels of RH.

Source: TH