

## News & Comments

# Fewer Nitrogen Oxides Mean More Crop Yield

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Crops aren't just affected by nice weather, fecund soil, and abundant water. Our ability to grow crops is negatively impacted by air pollution, including one air pollutant in particular.

In a recent study, researchers discovered that removing a common air pollutant could increase crop yields by a significant amount.

One could benefit from reducing nitrogen oxides by using satellite imaging, Stanford researchers discovered.

Nitrogen oxides are also known as NO<sub>x</sub> are found in industrial emissions and car exhausts. Agricultural output could be increased, and climate change mitigation costs could be analyzed based on the findings.

Among scientists, NO<sub>x</sub> is well known to cause negative effects on plant cells both directly and indirectly, by forming ozone. But its effect on crop yield wasn't known before. In the past, it was difficult to analyze it because of the lack of overlap between air monitoring stations and agricultural land.

For the study findings, the team of scientists observed crop greenness and nitrogen dioxide levels from the year 2018 to 2020. The team found that a reduction in NO<sub>x</sub> emissions of around 50% in each region would improve yields by approximately 25% for winter crops and 15% for summer crops in China.

Winter and summer crop yields improved nearly 10% in Western Europe. For summer crops, yields increased by roughly eight percent, while for winter crops, yields increased by about six percent. Generally, the lowest levels of NO<sub>x</sub> exposure are found in North and South America.

### KEYWORDS

Agriculture, nitrogen, crop yields, oxides, food security, crop production, ozone, greenhouse gas, Circularity, Climate Action, Conservation Energy, Environment

