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Q21

Among the following crops, which one is the most important anthropogenic source of both methane and nitrous oxide? (a) Cotton (b) Rice (c) Sugarcane (d) Wheat Official key: B.

UPSC Civil Services Prelims 2022 · General Studies · 2 marks · Environment and Ecology

Environment, ecology, climate, biodiversity - Prelims GS Paper I.

Explanation

(a)

Cotton. Not the dual CH₄-N₂O crop in this list.

(b) Official key

- **Rice. Flooded paddies:** methane from anaerobic soils; nitrous oxide from fertiliser and wet-dry cycles.

(c)

Sugarcane. N₂O from fertiliser; not the methane twin of rice.

(d)

Wheat. N₂O possible; not a methane paddy.

Summary

Official key is (b) rice. Standing water makes paddy the main anthropogenic crop source of methane; nitrogen fertiliser and soil processes add nitrous oxide. Cotton, cane and wheat are not that dual source in this set.

Related possible facts

These can be asked in a future Prelims paper.

Paddy methane

Anaerobic decomposition in flooded soils.

N₂O

A long-lived GHG from fertiliser and soil microbes.