

Interactive comment on “Nitrous oxide emission and nitrogen use efficiency in response to nitrophosphate, N-(n-butyl) thiophosphoric triamide and dicyandiamide of a wheat cultivated soil under sub-humid monsoon conditions” by W. Ding et al.

Anonymous Referee #1

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This is a well-written paper. The research topic is scientifically sound and interesting, related to the influence of inhibitors and nitrate-based fertilizer on the N₂O emissions, crop yield and N use efficiency in the North China Plain. The authors found that the inhibitors of NBPT and DCD together with urea as basal fertilizer rather than supplemental fertilizer, and the nitrate-based fertilizer instead of urea could greatly reduce N₂O emissions during the winter wheat growth season. Meanwhile, nitrate-based fertilizer significantly increased wheat yield by 12.3% and N use efficiency from 28.8% to

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35.9%. These are very interesting and valuable findings for readers and policy-makers. The experiment design is robust, data presentation is clear and the discussion section is written fully. Therefore, I would recommend its publication with a minor revision. It certainly falls within the remit of Biogeosciences.

A few smaller issues: 1. P13572, L10, add “kg N₂O-N ha⁻¹” following “0.49±0.12”. 2. P13574, L21, change “. . . were drastically than. . .” into “. . . were drastically higher than. . .”. 3. P13575, L22, show soil taxonomy such as UAS or FAO. 4. P13580, L3, I suggest that the analysis method for data normality test should be added. 5. P13581, L7, please delete “the”. 6. P135813, L22, Change “ammonia-based” into “ammonium-based”. 7. P13584, L16, Change “denitrification in general could produce more N₂O” into “denitrification could in general produce more N₂O”. 8. P13586, L5, “inner Mongolia” should be “Inner Mongolia”. 9. P13588 L9, “Application of urea with NBPT and/or DCD slightly increased wheat yields”, I suggest adding “compared with urea alone” to this sentence.

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