REACCH
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Speed Science Presentations

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Monitoring green-house gas emissions with automated static chambers

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We implemented the Li-Cor 8100A designed to measure CO_2 emissions from soil with the Teledyne T320 infrared gas analyzer (IRGA) portable system to measure the N_2O fluxes from soil in the microplot experiment with contrasting N application rates in the wheat site. Following the fall application of aqua fertilizer at 100-202 kg N ha^{-1}, N_2O flux was highest during the months of April and May, and then decreased to non detectible levels between the months of June to September. The spikes in N_2O were detected in October during initial rainfall following the drought period.

The acetylene inhibition experiment in the irrigated treatments and N fertilization in situ was also conducted to determine the site specific N_2O pools originating from nitrification and denitrification. The study demonstrates the capabilities of automated precision N_2O and CO_2 emissions measurements for the purposes of refining manually measured and modeled greenhouse gas emissions.
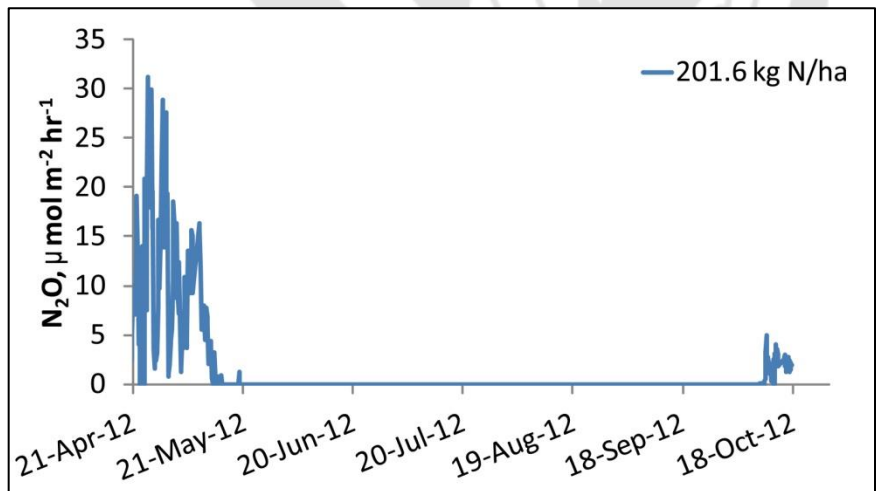
Pictures shown, from top to bottom, are:
•1) Precision application of N
2) Instrumented site with chambers
3) Irrigation and acetylene inhibition study in process

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