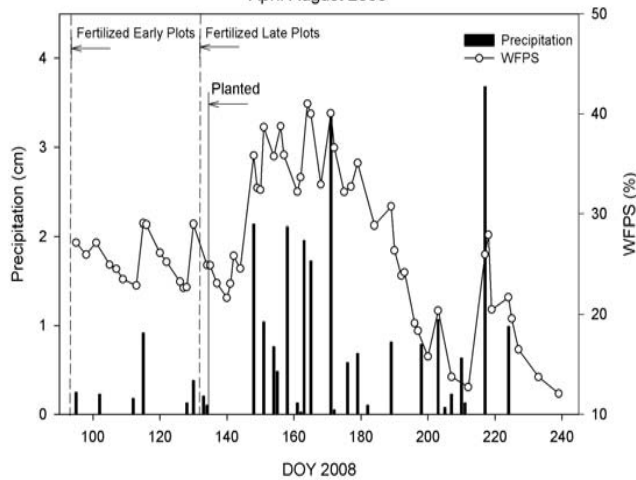


Fertilizer application timing influences greenhouse gas fluxes over a growing season

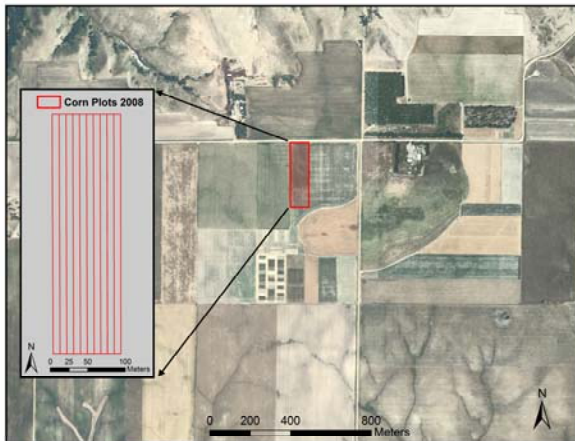
Rebecca L. Phillips, Donald Tanaka, David Archer, & Jon Hanson

Precipitation and Soil Water-Filled Pore Space
April-August 2008



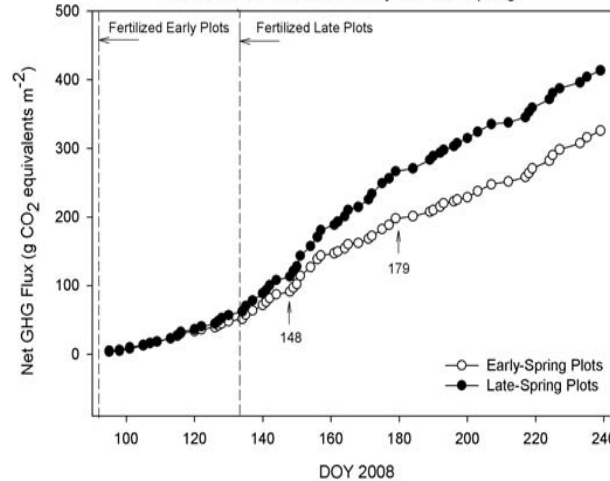
Focus: Test the effect of timing of fertilization application on fluxes of methane (CH_4), carbon dioxide (CO_2), and nitrous oxide (N_2O).

Results: Fertilization in late-spring resulted in greater carbon dioxide fluxes, compared to early-spring, with no difference in yield. Overall, greenhouse gases were affected by the timing of fertilization in dryland crop fields.



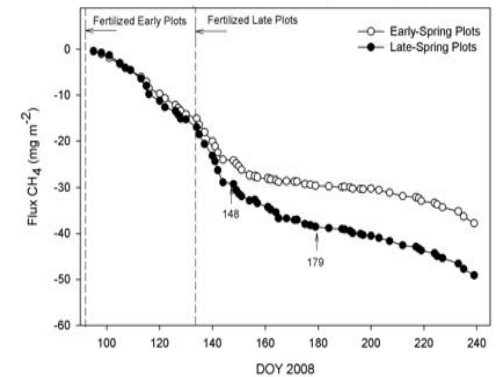
Experimental Field Site Planted to Maize in 2008- 5 plots fertilized in early spring and 5 plots fertilized in late spring. Location: Mandan, North Dakota

Cumulative Net Greenhouse Gas Fluxes
for Field Plots Fertilized Early vs. Late Spring

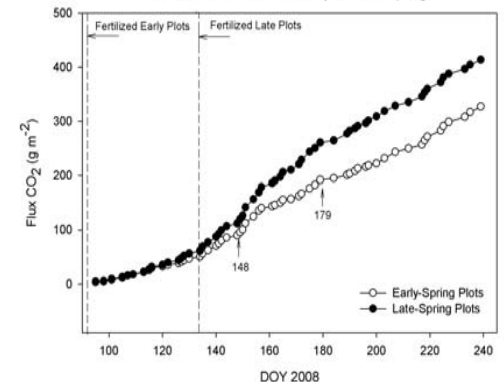


Cumulative fluxes by treatment between 4 April and 26 August 2008 for net greenhouse gas (above), methane, carbon dioxide, and nitrous oxide (shown at right). See JEQ 38: 1569-1579.

Cumulative Methane Fluxes
for Field Plots Fertilized Early vs. Late Spring



Cumulative Carbon Dioxide Fluxes
for Field Plots Fertilized Early vs. Late Spring



Cumulative Nitrous Oxide Fluxes
for Field Plots Fertilized Early vs. Late Spring

