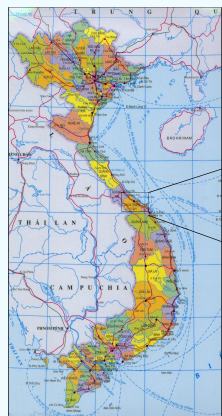


Nitrogen fertilization management can decrease methane emission from wetland rice fields of Central Vietnam

Hoang Thi Thai Hoa, Do Dinh Thuc, Trinh Thi Sen, Tran Thi Xuan Phuong

Hue University of Agriculture and Forestry (HUAUF), 102 Phung Hung street, Hue city
Tel: 84914546204 Fax: 8454.3524923 Email: hoangthithaihoa@hualf.edu.vn



Thua Thien Hue province

Content: Four N rates (0, 40, 80 and 120 kg N/ha), two N types (Urea and ammonium chloride), rice cropping (summer season 2014 and spring season 2015), methane emission, alluvial soil, Thua Thien Hue province, Central Vietnam.

Main crops:
Rice, peanut, cassava,
legumes, vegetables...



1. Objective : to assess the influence of rates and types of nitrogen application on CH_4 emission in the two rice cropping seasons in Central Vietnam

2. Materials and methods

- The basic properties of topsoil (0–20 cm) before the experiment are given with pH_{KCl} (4.10); OC (1.14%); total N (0.085%), total P (0.034%); total K (0.48%) and clay content (60%).
- Methane flux was measured in 3 replicates of the experiment using the static chamber method as described by Parkin and Venterea (2010) every seven days for the period 8 to 10 am and measured with gas chromatograph (GC- SRI 8610) by a flame ionization detector.

3. Results

- Increasing rates of N application for rice resulted in increasing CH_4 emission (Figure 1). The highest CH_4 flux was found at 120 kg N/ha for both types of N fertilizer.
- Less CH_4 is emitted from rice fields supplied with NH_4Cl compared with fields supplied with urea.
- The CH_4 emission was higher in summer rice crop season as compared with winter spring rice crop season at the same rate and type of N fertilizer application.

4. Conclusions:

The effect of inorganic fertilizer N on CH_4 emission depends on rate and type of N application. Further research should aim at quantifying the effects of it on N_2O emission and combining mitigation options.

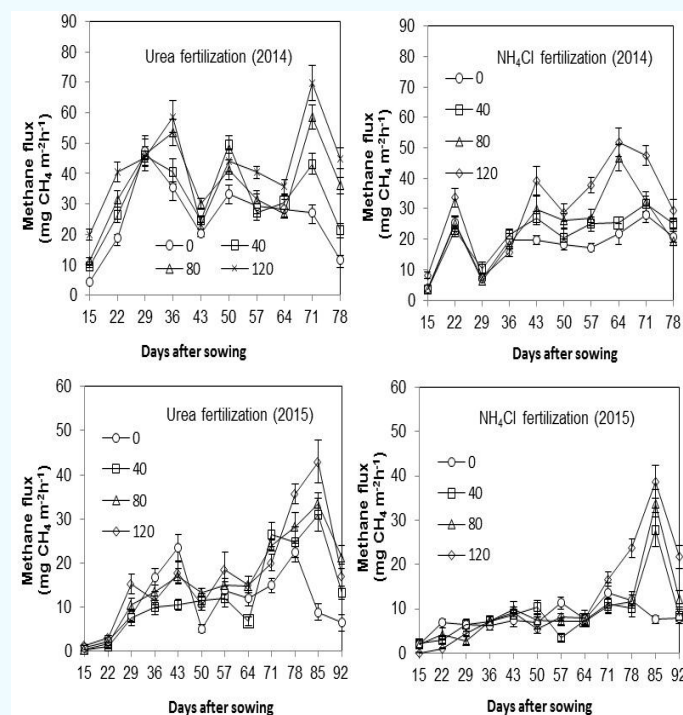


Figure 1: Effect of N rates and types on CH_4 emission flux in two rice cropping systems