International Research Journal of Agricultural Science and Soil Science Vol. 12(1) pp. 1-2, January, 2023
Available online https://www.interesjournals.org/agricultural-science-soil-science.html

Editorial

Nitrosomonas Data has been obtained Biofertilizers to Increase Rice Yields and Cut Methane Emissions

Jianping Han*

Laboratory of Analytical Chemistry and Applied Ecochemistry, Faculty of Bioscience Engineering, Ghent University, Bangladesh

*Corresponding Author's E-mail: jianping@yahoo.com

Received: 31-Dec-2022, Manuscript No. IRJAS-23-85620; **Editor assigned:** 02-Jan-2023, PreQC No IRJAS-23-85620 (PQ); **Reviewed:** 16-Jan-2023, QC No. IRJAS-23-85620; **Revised:** 21-Jan-2023, Manuscript No. IRJAS-23-85620 (R); **Published:** 28-Jan-2023, DOI: 10.14303/2251-0044.2023.04

Keywords: Biofertilizers, Methane emission, Organic fertilizer, Rhodopseudomonas palustris, Rice, Saline soil

BIOFERTILIZERS

(Abdul-Rahaman A et al., 2018)Organic or salinized rice fields that have been flooded share the same issues with low productivity and methane (CH4) emissions that cause global warming. Purple nonsulfur bacteria (PNSB), a type of biofertilizer, (Abdul-Rahaman A et al., 2021) are among the best choices to address these issues since they may boost rice output and growth while simultaneously competing with bacteria that produce methane for substrates. The purpose of this research was to determine whether Rhodopseudomonas palustris (Aker JC et al., 2016) strains TN114, PP803, and TK103, which have been identified as biofertilizers, had the capacity to increase rice yield and decrease CH4 emissions in (Andersson CI, et al., 2015) both types of rice fields. Each PSNB biofertilizer's effectiveness was compared to that of commercial organic fertiliser (COF), a carrier control (carrier without added PNSB), and a control without fertiliser addition (control). in eachBased on the maximum height of plants, no significant variation in rice growth was detected in paddy fields, however there was a substantial difference in rice grain yields. (Asfaw S et al., 2012) Only TN114 biofertilizer exhibited a positive effect in the organic paddy field, with a 48% increase followed by COF treatment. In the saline paddy field,(Alexiadis S et al., 2012) all PNSB biofertilizers provided higher grain production at statistically significant level. The two controls showed the lowest grain yield. The PNSB biofertilizer treatments, particularly PP803, which was 24% and 28% lower than COF in organic and saline paddy fields, respectively, (Bosker M et al .,2009) caused the least CH4 emissions compared to both controls and COF treatment. PNSB cell density and CH4 emissions had a significant negative connection in both paddy fields (rp). It can be said that all of the R. palustris (Dagum C et al.,1997) biofertilizers were successful in increasing rice yields in both the organic and saline flooded paddy areas while also lowering CH4 emissions (Dubey A et al., 2009).

To effectively produce safe crops and food to meet the demands of a growing population, soil nutrients are essential. However, a vital element of sustainable agriculture is soil quality. One of the most significant problems limiting productivity, particularly in developing nations, is poor soil quality. The use of chemical fertilisers was greatly increased in the 1950s and 1960s to increase soil fertility, which resulted in the Green Revolution, which increased food production globally but had detrimental effects on the environment. As a result, the overuse of chemical fertilisers, which over time gradually polluted soil and water resources, has become one of the sustainability challenges facing the agricultural industry. In fact, the primary components of the current soil management systems include fertilisers made of chemicals, which pose a risk to both human health and the environment In order to save the environment and public health, biofertilizers are touted as being superior than chemical fertilisers. When applied to seeds, plant surfaces, and/or soil, biofertilizers contain living cells of various microorganisms, including bacteria and cyanobacteria, which cover the plant's rhizosphere or internal space. This encourages plant growth by converting essential nutrients from non-absorbable to absorbable forms (Färe R et al., 2007).

REFERENCES

1. Abdul-Rahaman A, Abdulai A. (2018). Do farmer groups impact on farm yield and efficiency of smallholder farmers? Evidence from rice farmers in northern Ghana. Food Policy. 81: 95-105.
2. Abdul-Rahaman A (2021). Improved rice variety adoption and farm production efficiency: Accounting for unobservable selection bias and technology gaps among smallholder farmers in Ghana. Technol. Soc. 64:101-471.
3. Aker JC, Ghosh I (2016). The promise (and pitfalls) of ICT for agriculture initiatives. Agric Econ .47: 35-48.
4. Andersson CI, Chege CG (2015). Following up on smallholder farmers and supermarkets in Kenya. Am J Agric Econ. 97: 1247-1266.
5. Asfaw S (2012). Impact of modern agricultural technologies on smallholder welfare: Evidence from Tanzania and Ethiopia. Food Policy. 37: 283-295.
6. Alexiadis S (2012). Convergence in agriculture: Evidence from the European regions. Agric Econ Res Rev. 11: 84-96.
7. Bosker M (2009). The spatial evolution of regional GDP disparities in the 'old' and the 'new' Europe. Pap Reg Sci. 88: 3-27.
8. Dagum C (1997). A new approach to the decomposition of the gini income inequality ratio. Empir Econ. 22: 515-531.
9. Dubey A, Lal R. (2009). Carbon footprint and sustainability of agricultural production systems in Punjab, India and Ohio, USA. J Crop Improv. 23: 332-350
10. Färe R, Grosskopf S, Pasurka CA (2007). Environmental production functions and environmental directional. Energy. 32: 1055–1066.