

Paper presented at the International Rice Congress 2023 from October 16-19 in Manila, Philippines.

COVER CROPPING IN THE RICE PADDIES OF THE EBRO DELTA

GONÇALO NASCIMENTO^{1,2}, CARLOS CANTERO-MARTINEZ², MAR CATALÀ-FORNER³, KAREN MARTÍ³, DOLORS VILLEGAS¹

1 IRTA, LLEIDA, Spain. 2 UdL, LLEIDA, Spain. 3 IRTA, AMPOSTA, Spain

Rice (*Oryza sativa* L.) is primarily cultivated in a monocropping system due to the specificity of conditions in which it is grown in the Ebro delta area (Spain). However, growing rice continuously can degrade these systems by decreasing the soil physicochemical quality and nutrient availability. Cover cropping can counteract these issues by recycling nutrients back into the system. Additionally, legumes can supply N to the main crop via biological N fixation. To test these effects, a three year-long field experiment was setup in 2020 in a split-plot design with ryegrass (*Lolium multiflorum* L.) and vetch (*Vicia villosa* R.) as cover crops and summer fallow as the control treatment. There were four fixed levels of N fertilisation (0, 120, 180 and 240 kg N ha⁻¹) and an extra treatment where the fertiliser amount at panicle initiation was based on NDVI readings at that stage. A steady cover crop biomass increase along the years of the experiment was observed. Preliminary results show that vetch has a higher potential for providing N and increasing rice yields. NDVI readings for fertilisation purposes are in accordance with these results as rice after ryegrass often demanded more fertiliser N. This study has shown that cover cropping in the Ebro delta region is possible, but potential benefits on productivity will depend on the chosen species. This study is supported by the Kellogg Company.

© By the International Rice Research Institute (IRRI) and is licensed for use under Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International (CC BY-NC-SA 4.0)