

Abstract

Climate variability appears to have begun to affect rainfall and rice yields in the highland area. We conducted research to study guidelines for farmers to help in the adaptation of rice production under variation of climate conditions at Ban-Dong village and also study the water saving method by non-flooded soil condition.

Results show that (1) water resource and quantity of water on Ban-Dong village was sufficiently using up for cropping system, especially the paddy field consumed water about 1,315,520 m³/crop which less than rainfall in area. (2) The non-flooded soil condition had no affected to rice yields those higher yields than flooded soil condition as 15-20%. In 2015, the rainy season was lately started and rainfall distribution was variable which resulted to rice production on this year delay. The ordinary guidelines were transplanted young seedling as 25-30 day after sowing which grown under non-flooded soil condition at tillering stages.

The results of non-flooded soil and flood soil condition found that the growth and rice yields of both rice varieties as Khaw-Loung and Bae-Arja were no significant difference. The harvest index of Khaw-Loung and Bae-Arja grown under non-flooded soil condition was only higher than flooded soil condition as 12 and 27% respectively, shows that the non-flooded soil condition can help to save water use without affection rice growth. The rainfall was considered to be the most critical factor affecting rice yields for rainfed highland rice production. Thus, the non-flooded soil system was suitable water management on drought situation and farmers should be concern to adopt on water management for sustainable cropping.

Keywords: Highland, Climate Variability, Rainfall, Non-Flooded Soil, Water Management