Influence of Agricultural Management on the Soil and Water Qualities in the Sloping Upland Areas. (S06-yang105245-Poster)

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Abstract:

The N loadings into the watershed from the two different agricultural management systems in the sloping uplands were compared: the conventional farming system (CFS; 3,210 ha) and the sustainable farming system (SFS; 1,429 ha). At the CFS, management was heavily relied on the agrochemical use but at the SFS the managerial and vegetative BMP controls but without structural controls were adopted. Soil loss was estimated from USLE and N loadings were calculated based on water flow quantity and N concentrations at the watershed. Amounts of soil loss at the CFS and SFS were 17,914 MT/yr (forest 7,567; paddy 1,121, upland 9,226) and 17,404 MT/yr (forest 388; paddy 142, upland 16,874), respectively. The respective N loadings into watershed at the CFS and SFS were 376.16 MT-N/yr (human 15.71; livestock 65.74; soil loss 134.75 and fertilizer 159.97) and 349.21 MT-N/yr (human 8.31; livestock 15.98; soil loss 293.88 and fertilizer 31.04), showing soil loss and fertilizer were the major N contributors in both cases. Results indicated that structural option including managerial and vegetative controls of BMP should be adopted in the sloping uplands for sustainability.

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