

Soil Loss Preservation on Cassava Cultivated Slope in Eastern Cameroon

Haruka Saito

Key words : Soil loss, Cassava, Gravel bag, Cameroon

1. Back ground and Objective

Cameroon and countries in the humid tropics decrease the unit yield of cassava. Because of the erosion and soil degradation are caused by the over cultivation, the reduction of fallow period and cultivation in the slope. Soil loss in the cassava cultivated slope was observed in Eastern Cameroon during rainy seasons to understand the situation. At the same time, the simple soil conservation trial by gravel bags was assessed and the effect of slope, soil, vegetation and rainfall were evaluated.

2. Field description

The research field is Andom village, East province, Cameroon. The average degree is 23 °C, the annual rainfall is 1,300 mm, there are 2 rainy seasons. There are less fertile red soils (Oxisol).

3. Experimental setup

Plot experiments were conducted in 3 different slopes (30.6 %, 23.1 %, 17.6 %). The size of a plot is 12 m² (2 m × 6 m). The following 3 treatments were set in each plots : a) Cassava cultivation, b) Cassava cultivation with gravel bags, c) Natural fallow. 6 contents (Fig.1) were observed. Run off and soil loss were collected in 2 connected buckets during 2 rainy seasons.

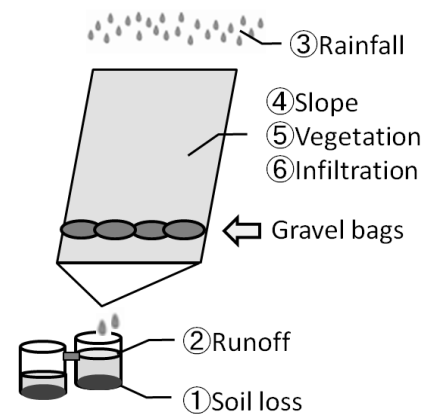


Fig.1. Experimental plot and observed 6 contents

4. Result and Discussion

Fig.2 is the relation with accumulative rainfall and dry soil losses. During observed period (2010/4/2~11/22), the rainfall amount is 1,174 mm and each plots yielded a) 1.3~2.8 kg/m², b) 0.7~0.9 kg/m², c) 0.5~1.0 kg/m² dry soil loss. Cassava cultivation increased dry soil loss and gravel bags decreased dry soil loss. Main factor affecting dry soil loss is not slope but vegetation. Soil loss was accelerated by less vegetation.

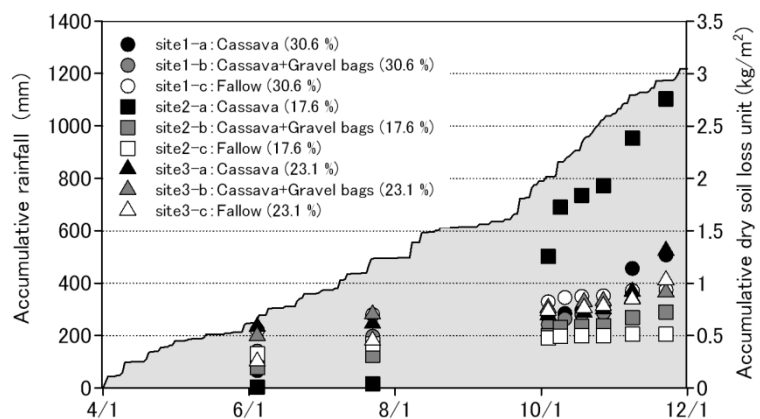


Fig.2 Accumulative rainfall and dry soil loss