PERFORMANCE EVALUATION OF SURFACE RUNOFF COLLECTOR

RONALDO SALAZAR PEJI

Department of Engineering and Agro - Industrial Technology

DON SEVERINO AGRICULTURAL COLLEGE
Indang, Cavite

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PERFORMANCE EVALUATION

OF SURFACE RUNOFF COLLECTOR

An Undergraduate Thesis

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RONALDO SALAZAR PEJI

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ABSTRACT

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The study was conducted at the Newly Acquired Land of Don Severino Agricultural College, Indang, Cavite from December 1990 to March 1991. This study was conducted to evaluate the performance of the surface runoff collector under diversified cropping scheme.

Water application in the field study was considered in the absence of rainfall during the conduct of the study. Source of water from the nearby stream was utilized. The application of water helped in the creation of surface runoff water.

Longest water retention time was obtained from cylindrical plastic container at 50 hours for 0.5 centimeter outlet discharge diameter. Shortest water retention time was obtained from collector made of polyethelene bag at 45.5 hours for 1.5 cm outlet discharge diameter. Statistical analysis showed that the water retention time were not significantly different from each other at different outlet discharge diameters and collector materials.

Soil moisture readings at saturated soil condition monitored at different distances from the center of the collector were 70.76, 70.71, 70.63 and 70.79 percent for

40, 60, 80 and 100 cm., respectively. At field capacity, readings of 67.98, 65.39, 63.22 and 61.27 percent for 40, 60, 80 and 100cm, respectively, were obtained.

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OF SURFACE RUNOFF COLLECTOR [1/]

RONALDO S. PETI

1/ An Undergraduate Thesis submitted to the Faculty of the Department of Engineering and Agro-Industrial Technology, Don Severino Agricultural College, Indang, Cavite, in partial fulfillment of the requirements for the Degree of Bachelor of Science in Agricultural Engineering, Major in Soil and Water Management. Contribution No. AE 91CZ7-014 Prepared under the supervision of Engr. David L. Cero.

INTRODUCTION

Occurrence of rainfall is controlled by a number of factors like temperature, air streams, solar radiation and humidity conditions. In the Philippines, the general condition is largely controlled by the air streams for the whole year. There are three air masses that affect the rainfall distribution in the country.

The first is the northeast monsoon which brings little amount of rainfall. Areas directly exposed to this season receive high amount of rainfall. North Pacific Trades, the second air stream, give a little amount of rainfall except with a direct exposure towards the coast for the region.