

Effect of Natural Vegetative Filter Strips Density on Crop Production and Soil Loss¹

Agustin R. Mercado, Jr.², Dennis P. Garrity³, Nestor Sanchez⁴
and Luciano Laput⁵

Abstract

Natural vegetative filter strips (NVS) are an attractive contour hedgerow system because they are simple to establish and maintain, control erosion effectively, and compete less with associated annual crops than other alternatives. The recommended practice has been to space the hedgerows every 1 meter drop in elevation. This results in close hedgerow spacing (3-6m apart) which removes considerable area from crop production. We hypothesized that acceptable soil loss may be possible with fewer hedgerows, and tested the effect of hedgerow density on soil loss in an experiment on a field with 50 meters slope length and 45% slope. A single NVS reduced soil loss by one half compared with the open-field control. As hedgerow density increased (4m, 2m, 1m) soil loss declined, but at a decreasing rate. Erosion did not differ significantly from the 2m and 1m drop, although the number hedgerows doubled. Maize yield declined with increasing number of hedgerows. We conclude that it is most practical to establish hedgerows at a 2m or 4m elevation distance. Even a single hedgerow is a good start for a farmer to tackle erosion with minimal investment and without significant loss of crop area.

¹ Paper presented at the 13th Annual Scientific Conference of the Federation of Crop Science Societies of the Philippines held at Hotel Supreme, Baguio City on May 25-29, 1997.

² Assistant Research Officer, International Centre for Research in Agroforestry (ICRAF), Claveria Research Site, MOSCAT Campus, Claveria, Misamis Oriental, Philippines.

³ Principal Scientist and Regional Coordinator, Southeast Asian Regional Research Programme, International Centre for Research in Agroforestry (ICRAF), Bogor, Indonesia.

⁴ Field Assistant, International Centre for Research in Agroforestry, Claveria, Misamis Oriental 9004, Philippines.

⁵ Instructor and Farm Manager, Misamis Oriental State College of Agriculture and Technology (MOSCAT), Claveria, Misamis Oriental, Philippines.