

Appropriate Spacing of Natural Vegetative Filter Strips in Upland Conservation Farming Systems¹

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

Abstract

Natural vegetative filter strips (NVS) are 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. A collaborative study between the International Centre for Research in Agroforestry (ICRAF) and Misamis Oriental State College of Agriculture and Technology (MOSCAT) to determine the effect of NVS density on crop production and soil loss. 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.

¹Paper presented during the 15th Annual Scientific Conference of the Federation of Crop Science Societies of the Philippines on April 10-15, 1999 at the Family Country Home, General Santos City.

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

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

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

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