



Chosing erosion control nets. Can't you decide? Ask the lab.

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Geotextiles (GTXs) have been used to protect steep slopes against soil erosion for about 60 years and many products have become available. The choice of individual product is always based on its ratio of cost versus effectiveness. Generally applicable recommendations for specific site conditions are missing and testing the effectiveness of GTXs in the field is time consuming and costly. Due to various site conditions, results of numerous case-studies cannot be generalized. One of the major and site-specific factors affecting the erosion process, and hence the effectiveness of GTXs, is the soil.

This study aimed to determine the rate of influence of three natural erosion control nets on the volume and velocity of surface runoff caused by rainfall. The nets were installed on slope under laboratory conditions and then exposed to simulated rainfall. An impermeable plastic film was used as a substrate instead of soil to simulate non-infiltrating conditions. A comparison of the influence of tested GTX samples on surface runoff may indicate to their erosion control effect. Thus, the results could help with choosing a particular product.

Under real conditions, the effect of erosion control nets would be increased by the infiltration capacity of the soil, equally for all samples. Therefore, the order of effectiveness of the samples should stay unchanged. To validate this theory, a field experiment was carried out where soil loss was recorded along with runoff characteristics. The data trends of discharge culmination under natural conditions were similar to trends under laboratory conditions and corresponded to soil loss records.