One-Square-Meter Method¹

KAMAL M. IBRAHIM²

*Head, Range Management Unit,
Desert Institute, El Mataria,
Cairo, UAR.*

Highlight

One-square-meter frame was developed to estimate directly percent cover of vegetation. It is well adapted to semi-desert grassland and desert shrub types where vegetation cover does not exceed 100 percent. The device provides accuracy of estimates and saves recording time.

One-square-meter method was used to determine the percent canopy and basal cover for species as well as for total vegetation. The frame shown in Figure 1 is made of steel strips, 2 cm wide and 3 mm thick. Two opposite sides have four equally spaced holes to receive cross bars (4 mm dia) and the other two sides have a central cross-piece (4 mm dia) dividing the frame into 10 rectangular sub-units each

FIG. 1. The one-square-meter frame in place for estimating the vegetation cover.

having an area of 20×50 cm or 10 percent of the entire frame. The ends of the cross bars are threaded to be fixed through the holes of the side strips by nuts from the outer side of the frame.

For further sub-division of the rectangular sub-units into areas of 20×25 cm or 5 percent of the entire frame, a movable steel rod (3 mm in dia) is placed parallel to the central crosspiece dividing each rectangular into equal parts. Shallow grooves are made in the crossbars to adjust the steel rod in its designated place.

The ends of the four side strips fit into four threeway tabular right angled corners to form a meter square frame. Each corner is fitted with three threaded bolts, two to tighten the ends

of the side strips and the third to fix the height of the frame by means of vertical adjustable legs to suit the vegetation type. All parts can be dismantled and easily carried in the field.

This method utilizes the basic concepts underlying the range reconnaissance and square-foot-density range survey methods (Stewart and Hutchings, 1936). The quadrat size (one square meter) is large enough to include the different species yet small enough to be viewed readily from above. Estimates are expressed directly in percent cover. The subdivision by the crosspieces facilitate the accuracy of estimates and save recording time.

The frame was developed in 1964 at the Desert Institute, Cairo. It was found to be particularly well adapted for securing an objective measure of vegetation characteristics of the semi-desert grassland types of north western coastal region, UAR and desert shrub type of West Pakistan where overlapping of vegetation cover does not exceed 100 percent.

Literature Cited

STEWART, G., AND S. S. HUTCHINGS. 1936. The plant observation—plot (Square-foot-density) method of vegetation survey. *J. Amer. Soc. Agron.* 28:714-726.

Specialists in Quality NATIVE GRASSES

Wheatgrasses • Bluestems • Gramas • Switchgrasses • Lovegrasses • Buffalo • and Many Others

We grow, harvest, process these seeds

Native Grasses Harvested in ten States

Your Inquiries
Appreciated

SHARP BROS. SEED CO.

Phone 398-2231
HEALY, KANSAS

¹ Received January 25, 1971.

² Present address is FAO Range Management Specialist, Pakistan Forest Institute, Peshawar, West Pakistan.