IN the management of perennial grasses for forage purposes, it is important to know the effects of partial and complete defoliation upon the yield of top growth and upon the root development of these grasses. While grasses do not respond in precisely the same manner to grazing in the field by animals as they do to clipping in the greenhouse, results of such clipping trials furnish a valuable indication as to how the grasses may respond to varying amounts of defoliation under grazing practices. The present paper deals with the effects of weekly cutting at different heights on the yields of tops and underground parts by some of the more common perennial grasses in Michigan.

Frequent and close clipping of the tops of a grass reduces the amount of roots produced and the total yield of tops. When grass plants are completely defoliated, new top growth is initiated, in a large measure, at the expense of previously deposited root reserves. Unless these reserves are sufficiently replenished during the periods between successive cuttings, a reduction in reserve content of the roots occurs, which progressively diminishes the amount of new top and root growth following each cutting to the point of extinction.

Dexter (2), Graber (3, 4), Graber, et al. (5), Harrison (6, 7), Leukel and Coleman (8), Leukel, et al. (9), Mortimer and Ahlgren (10), Pierre and Bertram (11), Robertson (12), Sprague (14), and Sturkie (15) give the effects of various cutting treatments on the yields of tops and underground parts of quack grass (Agropyron repens), Kentucky bluegrass (Poa pratensis), red top (Agrostis alba), fescue (Festuca rubra fallax), timothy (Phleum pratense), Colonial bent grass (Agrostis tenuis), Bahai grass (Paspalum notatum), Centipede grass (Eremochloa ophiuroides), Carpet grass (Axonopus compressus), Kudzu (Pueraria thunbergiana), blue grama (Bouteloua gracilis), Junegrass (Koeleria cristata), Porcupine grass (Stipa spartea), smooth bromegrass (Bromus inermis), Sudan grass (Andropogon sorghum), seaside (Agrostis palustris) and velvet bent grasses (Agrostis canina), and Johnson grass (Sorghum halepense). Sampson and Malmsten (13) studied the effects of frequency of cutting on some of the western range grasses, and Biswell and Weaver (1) give the response of some prairie grasses to frequent clipping. Several of the papers cited present good literature reviews on the subject.

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3 Figures in parenthesis refer to "Literature Cited", p. 429.