LEGUMES AND OUR LIMITED EXPERIENCE IN EASTERN VITICULTURE

James Kamas[1], Dr. Robert Pool[2], Dr. Alan Lakso[2], Richard Dunst[1] and Andrew Fendinger[1]

[1]Vineyard Research Laboratory, Cornell University, Fredonia, NY; [2]New York State Agricultural Experiment Station, Cornell University, Geneva, NY

INTRODUCTION

The use of cover crops in vineyard row centers has several advantages over cultivation including erosion control, increased equipment mobility and preservation of vineyard soil structure. Although vineyard cover crops have been used for many years, there has been little work done on the potential benefits of leguminous species as covers under eastern viticultural conditions. Indigenous plant covers often contain species which serve as alternate hosts for virus diseases of grapevines. Legumes are generally less laterally aggressive than grass crops and offer the potential benefit of fixing atmospheric nitrogen. The release and availability of additional nitrogen late in the growing season is theoretically beneficial in its ability to facilitate fruit and cane maturation, however, conventional wisdom dictates that available nitrogen late in the growing season may decrease grapevine winter hardiness. In unirrigated vineyards, the main disadvantage of any green cover during the growing season is competition for water during critical growth periods which may influence crop size and canopy function.

Two legumes, Crown vetch (*Coronilla varia L.*) and clover (*Trifolium spp.*) were included in a floor management experiment established in a mature 'Concord' vineyard at the Vineyard Laboratory in Fredonia, New York. Alsike clover (*Trifolium hybridum L.*), originally planted in clover plots succumbed to rust disease in the summer of 1993, but plots were immediately replanted to rust resistant white or ladino clover (*Trifolium repens L.*). White clover plots were fully established early in the 1994 growing season. Plots were approximately 18 ft. wide and 72 ft. long, with each treatment replicated in four blocks. Standards for comparison include mulch (5 tons of oat straw per acre per year), 1.5 qt. glyphosate (Roundup®) application at bloom and 4-5 shallow cultivations from bud break through early August. Covers were initially established in 1991, but because of drought conditions, several treatments were not well established until

Table 1. Annual Pruning Weights (lbs.) of 'Concord' Grapevines Under Five Row Center Management Systems

Treatment	1992	1993	1994
Mulch	3.4 a	3.2 abc	3.9 a
Roundup®	3.4 a	2.5 bc	3.1 abc
Clover	3.1 ab	1.9 cd	3.1 abcd
Vetch	3.4 a	1.9 cd	3.0 bcd
Cultivation	3.4 a	2.8 abc	3.6 abc

To Return to Table of Contents Press Back Button in your web browserser menu bar

To Return to Table of Contents Press Back Button in your web browerser menu bar

To Return to Table of Contents Press Back Button in your web browserser menu bar

To Return to Table of Contents Press Back Button in your web browerser menu bar