



# Crop Science Report

RESEARCH/EXTENSION

## SOUTHERN WILLAMETTE VALLEY SOILS WITH SERIOUS RESTRICTIONS THAT LIMIT CROP ALTERNATIVES

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Grass seed production in the southern Willamette Valley is located on poorly drained soils that have severely limited cropping alternatives. Linn, Lane, and Benton Counties have 259,400 acres classified as poorly drained with slow or very slow permeability and excess surface water causing them to be difficult to subsurface drain (Table 1). The characteristics of these soils are described in Table 2. The Amity soil series is included in this group but is classified as somewhat poorly drained with a high water table during the winter and spring months. Crop production is strongly limited by wetness without artificial drainage. The excess water can be removed from these soils by an adequate drainage system only if outlets are available.

Grass seed crops can tolerate the winter flooding and saturated soils common in these areas. There are few other crops that are adapted to these soils. More than 170,000 acres of grass seed are grown in these counties, or approximately 65% of the area in these soil series is in grass seed production.

TABLE 1  
ACREAGES OF CERTAIN SOIL SERIES BY COUNTIES 1/

Soil series	Benton	Linn	Lane	Total
Amity	12,500	51,700	--	64,200
Awbrey	2,200	4,500	14,000	20,700
Brenner	2,500	--	--	2,500
Concord	--	4,600	600	5,200
Conser	--	7,200	6,000	13,200
Courtney	--	8,800	6,500	15,300
Dayton	13,200	63,100	9,300	85,600
Waldo	2,600	3,700	11,600	17,900
Wapato	<u>10,400</u>	<u>22,400</u>	<u>2,000</u>	<u>34,800</u>
<i>Total</i>	<i>43,400</i>	<i>166,000</i>	<i>50,000</i>	<i>259,400</i>

1/ Oregon's Long-range Requirements for Water. Appendix I-2.  
State Water Resources Board. 1969. pp. 31-35.

TABLE 2  
 PROPERTIES, QUALITIES, AND DESCRIPTIONS OF POORLY DRAINED SOIL SERIES 2/

Soil series	% slope	Major land use	Drainage class & group	Permeability	Major soil limitation	Irrigation suitability
Amity	0-3	Cultivated	S.poor(2)	M.slow	Wetness	Excellent
Awbrey	0-3	Cultivated	Poor(5)	V.slow	Wetness & claypan	Fair
Brenner	0-3	Pasture	Poor(5)	Slow	Wetness	Fair
Concord	0-3	Cultivated	Poor(4)	M.slow	Wetness	Fair
Conser	0-3	Cultivated	Poor(5)	Slow	Wetness	Fair
Courtney	0-3	Cultivated	Poor(5)	Slow	Wetness	Poor
Dayton	0-3	Cultivated	Poor(5-6)	V.slow	Wetness	Poor-fair
Waldo	0-3	Cultivated	Poor(5)	M.slow	Wetness	Fair
Wapato	0-3	Cultivated	Poor(4)	M.slow-slow	Wetness	Good

2/ Oregon's Long-range Requirements for Water. Appendix I-2. State Water Resources Board. 1969. pp. 52-58.