

DRAFT
Subject to Field Testing

December, 1997

FORAGE SUITABILITY GROUP - WESTERN OREGON

SOMEWHAT POORLY DRAINED

Number: G002XY005OR

MLRA: A2 Willamette and Puget Sound Valleys

Climate: Average annual precipitation ranges from 29.5 to 100 inches. Precipitation is evenly distributed throughout fall, winter, and spring, but summers are dry. In most of this area, snow falls only a few days each year. Average annual temperatures vary from 9 to 13 degrees Centigrade. Average freeze-free-period is 165 to 210 days.

Vegetation: The native vegetation is generally an overstory of trees and an understory comprised of shrubs and grass. Generally the following tree species occur: Douglas-fir, Oregon white oak, western redcedar, ponderosa pine, Oregon ash, and maple. The following plant may be found in the understory: poison oak, salal, wild rose, snowberry, tall Oregon grape, willow, swordfern, sedges, blackberry, and both annual and perennial grasses. Once cultivated for pasture or hay, the areas that have low level or no management, tend to show an increase in brushy species such as blackberry and Scotch broom. Also tansy ragwort and St. Johnswort may increase on sites with low level or no management.

Soil Suitability Group Description:

Soil description: These somewhat poorly drained soils are generally deep, and are generally formed in alluvium, colluvium, silty material, and in stratified glaciolacustrine deposits. Textures are predominantly silt loams. Rooting depth varies from 20 to 60 inches due to high water table in the winter and early spring. In summer irrigation is needed for maximum production of most crops.

Landscape position: Highly variable - found on terraces, depressional areas, drainageways, alluvial fans, rolling uplands, broad valley terraces, ridges, and on convex foot slopes.

Depth to seasonal water table: varies from 6 inches to 2.5 feet during winter and early spring.

Available water holding capacity: 3.5 to 14 inches.

pH range: 4.5 - 6.5.

Frequency and duration of flooding: Flooding occurs on only two soils in this group. It occurs rarely on Linslaw, and it occurs frequently on Whitson for brief to long periods.

Frost heave potential: None

Degree of stoniness: None

Trafficability parameters: Sticky and plastic when wet which restricts trafficability.

Typical soils: See attached list.

Adapted Forage Species List:

Grazing Use:

| | |
|--------------------|---------------------|
| Tall Fescue | Festuca arundinacea |
| Annual Ryegrass | Lolium multiflorum |
| Perennial Ryegrass | Lolium perenne |
| Alsike Clover | Trifolium hybridum |
| White Clover | Trifolium repens |
| Birdsfoot Trefoil | Lotus corniculatus |

Machine Harvest:

| | |
|-------------------|---------------------|
| Tall Fescue | Festuca arundinacea |
| Timothy | Phleum pratense |
| Alsike Clover | Trifolium repens |
| Birdsfoot Trefoil | Lotus corniculatus |
| White Clover | Trifolium repens |

Suggested seeding season: Spring or Fall

Production Estimates: Based on Animal Unit Months, and high level of management

Grazing Use:

Non-irrigated - 5 to 12 AUMs/Acre/Year (@ 35% Harvest Efficiency – 100% of Growth Curve)

Base Production by Soil Fertility Level (Lbs./Acre/Year)

| Very Low | Low | Moderate | High | Maximum |
|----------|-------|----------|-------|---------|
| 11275 | 15225 | 19175 | 23125 | 27075 |

Irrigated - 11 to 16 AUMs/Acre/Year (@ 35% Harvest Efficiency – 100% of Growth Curve)

Base Production by Soil Fertility Level (Lbs./Acre/Year)

| Very Low | Low | Moderate | High | Maximum |
|----------|-------|----------|-------|---------|
| 24825 | 27625 | 30450 | 33275 | 36100 |

Machine Harvest:

Non-Irrigated - 3 to 4 Tons/Acre/Year (@ 70% Harvest Efficiency – 80% of Growth Curve)

Base Production by Soil Fertility Level (Lbs./Acre/Year)

| Very Low | Low | Moderate | High | Maximum |
|----------|-------|----------|-------|---------|
| 10700 | 11575 | 12475 | 13375 | 14275 |

Irrigated - 5 to 7 Tons/Acre/Year (@ 70% Harvest Efficiency – 90% of Growth Curve)

Base Production by Soil Fertility Level (Lbs./Acre/Year)

| | | | | |
|----------|-------|----------|-------|---------|
| Very Low | Low | Moderate | High | Maximum |
| 15875 | 17450 | 19050 | 20650 | 22225 |

Growth Curve: Pasture & Hayland - High Level Management

Growth Curve Number: **02VXHN**

| | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
| 0 | 0 | 0 | 0 | 15 | 15 | 20 | 30 | 15 | 5 | 0 | 0 |

Growth Curve Number: **02VXHI**

| | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
| 0 | 0 | 0 | 0 | 10 | 15 | 20 | 30 | 15 | 10 | 0 | 0 |

Management:

Limitations: Wetness generally limits the suitability of these soils for deep-rooted crops. Most crops on these soils are adversely affected by excess moisture. Excessive tillage can result in the formation of a tillage pan. Grazing and machine use should be restricted when soils are saturated. Grazing while soils are wet results in compaction of surface layer poor tilth, and excessive runoff. Steepness of slope decreases livestock movement and affect machine movement.

Vegetation management: Move livestock by plant height. Move livestock onto a field when forage is at least 6 to 8 inches tall. Discontinue grazing when the average height of the pasture is down to 2 to 4 inches. Avoid grazing when soil is wet and before pasture stand is fully established. Remaining stubble height is the more important of these two measurements.

Season of use: To avoid damage to plants and compaction of wet soils in the winter months caused by animals, any livestock on pasture should be removed when the soils are saturated, which generally occurs for long periods between November and March.

Facilitating Practices:

Cross-fencing: Cross fencing will help achieve higher forage yields and more uniform grazing use through more intensive management.

Water developments: Water is critical to livestock gains and general health. Generally, the best source of water in a field is a trough with water piped from a well or a spring. If piped water is not available, allow only restricted access to rivers or streams. If livestock only have a small access area for watering, the amount of manure and sediment in the water will be minimized. Additionally, bank erosion problems will be minimized, and streamside vegetation will be protected, which will keep the water cooler.

Minerals: Salt should be provided in the field for livestock. The salt block or box should be up off the ground and under cover so it will not dissolve by rain or dew. Salt should be placed away from watering areas to reduce livestock concentration areas and encourage more uniform grazing.

Clipping and dragging: Clip and drag pasture that have slopes less than 20% as often as required to encourage uniform grazing and pasture vigor. Clipping and dragging is best done after each grazing period and a minimum of twice annually.

Fertilization: Take soil samples to determine nutrient levels. An application of nitrogen in the spring is generally necessary for forage production, but tests have shown that two applications one in fall and one in winter will optimize forage production. Fertilization will increase both the production and the nutritive value of the forage for livestock, but too much fertilizer can build up toxic levels of certain minerals (such as nitrate and potassium) in forages.

Weed control: Weed control can be accomplished mechanically, chemically, biologically, or with a combination of these methods. The recommendations for chemicals can change, so it is always best to contact the local county extension office.

Hayland management: For maximum production and quality of forage, the grass should be cut just as the head emerges. The stubble height should be no lower than 2 to 3 inches. The best time to apply manure is just after harvest, because the nutrients can reach the soil more efficiently if excess foliage isn't in the way.

Reseeding: Reseeding should always be the last option. It is expensive, and takes a pasture out of production for most of a year. Additionally, the need to reseed is usually a symptom of a need to change livestock management practices. If management problems or a change in stocking rate or season of use are not addressed first, newly seeded pastures will soon look like the ones they replaced. Species selection is very important. If the species is not adapted to the site, the best seedbed preparation in the world will not make the seeding successful. Generally, a mix of one grass species and one legume is recommended. This cuts down on patch grazing of grasses caused by palatability differences. If multiple species are desired, make sure that the species of grass all have approximately the same growth schedule. It is very important to keep the animals off of a new seeding until well established. Otherwise, the new seedlings probably will be damaged or killed, and the time and money invested in the seeding will be wasted.