



Orchardgrass seed

Western Oregon—west of Cascades

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Good management practices are essential if optimum fertilizer responses are to be realized. These practices include use of recommended varieties, selection of adapted soils, weed control, disease and insect control, good seedbed preparation, proper seeding methods, and timely harvest.

Follow recommended soil sampling procedures to estimate fertilizer needs. The Oregon State University Extension Service agent in your county can provide you with soil sampling instructions, soil sample bags, and information sheets.

Nitrogen (N)

Liberal amounts of available N are required for optimum yields of orchardgrass seed.

On new seedings, place 20–40 lb N/a near the seed. At least 1 inch of soil should separate the seed and fertilizer.

On established stands, a total annual application of 120 to 140 lb N/a is suggested.

Apply 20 to 30 lb N/a in the fall. Make one or two applications totaling 100 to 120 lb N/a between March 1 and April 1.

Higher rates of fall-applied N can be used where fields are grazed during the winter months.

Do not make spring applications of N until grazing has been completed.

The application of nitrate N to wet soils can result in the loss of N through reduction of nitrate.

Phosphorus (P)

Soil testing should be used to evaluate the need for P fertilization (Table 1).

On new seedings, when the soil test for P is below 30 ppm, place 30 lb P_2O_5 /a near the seed. At least 1 inch of soil should separate the seed and fertilizer. Increase the application rate by 50 percent when P is broadcast rather than placed near the seed.

On established stands, broadcast P in the fall.

Table 1.—P fertilization rates for orchardgrass seed production.

If the soil test for P is (ppm)	Apply this amount of phosphate (P_2O_5) (lb/a)
0–15	40–60
15–25	30–40
over 25	0

Potassium (K)

Use a soil test to evaluate the need for K fertilization (Table 2).

On new seedings, when the soil test for K is below 100 ppm, place 25 lb K_2O /a near the seed. At least 1 inch of soil should separate the seed and fertilizer. Increase the K application rate by 50 percent where K is broadcast.

On established stands, broadcast K in the fall.

Table 2.—K fertilization rates for orchardgrass seed production.

If the soil test for K is (ppm)	Apply this amount of potash (K_2O) (lb/a)
0–100	60
over 100	0

Sulfur (S)

Include 10–15 lb/a of S in the annual fertilizer program for orchardgrass. S sometimes is contained in fertilizers used to supply other nutrients such as N, P, and K, but may not be present in sufficient quantity.

Plants absorb S in the form of sulfate. Fertilizer materials supply S in the form of sulfate and elemental S.

Elemental S must be converted to sulfate in the soil before the S becomes available to plants. The conversion of elemental S to sulfate usually is rapid for fine-ground (less than 40-mesh) material in warm, moist soil.



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S in the sulfate form can be applied at planting time. Some S fertilizer materials such as elemental S and ammonium sulfate have an acidifying effect on soil.

The S requirements of orchardgrass can be provided by:

1. Annually applying 10–15 lb S/a in the form of sulfate or as fine-ground (finer than 40-mesh) elemental S. Elemental S will not be available to plants until the soil warms up.
2. Applying 30–40 lb S/a as sulfate or fine-ground elemental S every second year.
3. Applying coarser-ground elemental S at higher rates and less frequently.

Other Nutrients

Responses of orchardgrass to nutrients other than those discussed in this guide have not been observed in Oregon.

Lime

Orchardgrass has responded to applications of lime in experiments conducted on acid soils in the Willamette Valley.

The application of lime is suggested when the soil pH is below 5.8 or the soil test for calcium (Ca) is below 5.0 meq Ca/100 g. Work lime into the seedbed at least several weeks before seeding. The amount of lime required is based on an SMP lime requirement test (Table 3).

Table 3.—Lime application rates for orchardgrass seed production.

If the SMP buffer test for lime is	Apply this amount of lime (t/a)
under 5.5	4–5
5.5–5.8	3–4
5.8–6.1	2–3
6.1–6.5	1–2
over 6.5	0

The suggested liming rate is based on 100-score lime. Liming materials should be checked for score.

A lime application is effective for several years.

The use of N fertilizers for grass seed crops will tend to increase soil acidity (decrease soil pH). This should be considered in establishing or renovating perennial grass seed fields.

The surface application of lime to established seed fields could increase the soil pH in the surface ½ inch of soil and thereby increase the possibility of N loss from ammonium N and urea due to volatilization. Also,

broadcasting lime on established stands of perennial grasses is not as effective as mixing lime with the soil.

Evaluate the soil acidity problem before making new plantings. The lime application should allow for some decrease in soil pH during the life of a perennial stand of grass.

Some soils may have a fairly high SMP buffer value (over 6.2) and a low pH (below 5.3). This condition can be caused by the application of acidifying fertilizer. In this case the low pH value is temporary, and the pH of the soil will increase as the fertilizer completes its reaction with the soil. This temporary “active” acidity from fertilizer is encountered following recent applications of most nitrogen fertilizer materials. Acidifying fertilizers also have a “long-term” acidifying effect on soil, which is cumulative and leads to lower SMP buffer readings.

Sandy soils to which fertilizers have not been recently applied sometimes record low pH and high SMP buffer values. In such cases, a light application of lime (1–2 t/a) should suffice to neutralize soil acidity.

For acid soils low in Mg (less than 0.5 meq Mg/100 g of soil) 1 t/a of dolomite lime can be used as an Mg source. Dolomite and ground limestone have about the same ability to neutralize soil acidity.

For More Information

How to Take a Soil Sample ... and Why, EC 628, by E.H. Gardner (revised 1997). No charge.

A List of Analytical Laboratories Serving Oregon, EM 8677, by J. Hart (revised 1997). No charge.

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Fertilizer and Lime Materials, FG 52, by J. Hart (reprinted 1997). No charge.

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