



Peas

Eastern Oregon—east of Cascades

H. Gardner, N.S. Mansour, and V. Pumphrey

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 planting and harvesting.

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)

Rates of 15–20 lb N/a banded with P and possibly K at planting time are suggested.

Information on the application of N is given below in the sections on P and K.

Inoculation

Inoculate pea seed immediately before seeding to ensure an adequate supply of nitrogen-fixing bacteria. Use a fresh, effective, live culture of the correct strain of *Rhizobia*. The need for inoculation is reduced in fields that have been used for a pea-wheat rotation for several years and where pea yields have been satisfactory.

Phosphorus (P)

P is essential for vigorous early growth of seedlings. If possible, apply P, N, and, where required, up to 60 lb K_2O/a in a band 2 inches to the side or 2 inches below the seed at planting time.

If banding equipment is not available, 15–20 lb N/a and 40–75 lb P_2O_5/a can be drilled with the seed. Do not use urea or diammonium phosphate as N and P sources when fertilizer is drilled with seed. Additional P_2O_5 and K_2O , if required, can be broadcast and plowed down prior to planting. See Table 1.

Table 1.—P fertilization rates for peas.

If the soil test for P is (ppm)	Apply this amount of phosphate (P_2O_5) (lb/a)
0–10	40–120
10–20	0–60
over 20	0

Potassium (K)

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

Table 2.—K fertilization rates for peas.

If the soil test for K is (ppm)	Apply this amount of potash (K_2O) (lb/a)
0–75	90–120
75–150	60–90
150–200	40–60
over 200	0

Apply K and plow it down before planting, or band it at planting time. Do not include K with N and P when fertilizer is drilled with the seed. In a 2-inch x 2-inch band application of N, P, and K, the K rate should not exceed 60 lb K_2O/a . Additional K, if required, should be broadcast and plowed down prior to planting.

Seedling injury from banded fertilizers tends to be more serious in the following situations:

- In drier soils
- In coarse-textured, sandy soils
- Where the fertilizer band is close to seed

Superphosphate fertilizers are less injurious to seedlings than N and K fertilizers. Urea and diammonium phosphate can be particularly injurious if placed too close to the seed.



Sulfur (S)

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 rapid conversion of elemental S to sulfate is dependent on warm, moist soil conditions. This reduces the effectiveness of elemental S as a sulfur source for early-planted annual crops.

The S requirement of peas can be provided by the application of 20–30 lb S/a in the form of sulfate at planting time. Because many commonly used fertilizer materials contain significant amounts of S, a separate application of S may not be needed.

Other Nutrients

Responses of peas to nutrients other than those discussed in this guide have not been observed in eastern Oregon. Peas have a comparatively low requirement for boron, which never should be included in fertilizer banded with peas.

The response of peas to fertilizers depends on the amount of water available to the growing crop. The higher rates of fertilization are suggested where plant growth and yield are not limited by water during the growing season. Where restricted water supply does limit plant growth, the lower rates of fertilizer are suggested.

Lime

Significant responses of peas to lime have not been observed in eastern Oregon. Peas are fairly sensitive to soil acidity, however, and the application of lime at 1 to 2 t/a may be considered when the soil pH is below 6.0. Apply lime at least several weeks before seeding and mix it with the surface 6 inches of soil. A lime application is effective for several years.

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.

To order copies of the above publications, send the complete title and series number, along with a check or money order for the amount listed (payable to Oregon State University), to:

Publication Orders
Extension & Station Communications
Oregon State University
422 Kerr Administration
Corvallis, OR 97331-2119
Fax: 541-737-0817

You may order up to six no-charge publications without charge. If you request seven or more no-charge publications, include 25 cents for each publication beyond six.

World Wide Web

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

You can access the above publications, as well as FG 72, *Peas: Eastern Oregon—East of Cascades*, our Publications and Videos catalog, and many other publications via our Web site at eesc.orst.edu

Suggested fertilizer applications are based on research work conducted in eastern Oregon and on observation of growers' fields.

This publication was produced and distributed in furtherance of the Acts of Congress of May 8 and June 30, 1914. Extension work is a cooperative program of Oregon State University, the U.S. Department of Agriculture, and Oregon counties. Oregon State University Extension Service offers educational programs, activities, and materials—without regard to race, color, religion, sex, sexual orientation, national origin, age, marital status, disability, and disabled veteran or Vietnam-era veteran status—as required by Title VI of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, and Section 504 of the Rehabilitation Act of 1973. Oregon State University Extension Service is an Equal Opportunity Employer.

Published July 1983. Reprinted January 2000.