An adequate soil fertility program will pay big dividends in the production of field corn, providing the recommended variety is seeded, weeds and other pests are controlled, and an adequate moisture level is maintained. Corn effectively uses the nitrogen built up by alfalfa or clover and the nutrients supplied by barnyard manure. In either case, applications of readily available mineral nutrients will assure vigorous early growth.

Under irrigation, corn for silage should be seeded to achieve a plant population of 22,000 to 28,000 plants per acre. For grain production, a population 20,000 to 24,000 plants per acre is recommended. Dryland corn will yield satisfactorily only on deep, well-drained soils of high moisture-holding capacity. For dryland production, the plant population should be reduced 25 to 50%.

**Nitrogen**

For silage production under irrigation -- Apply 100 to 120 pounds of nitrogen (N)/A. Rates can be reduced to 80 to 100 pounds if corn follows alfalfa or clover and to 40 to 60 pounds of nitrogen (N)/A with 10 tons or more of barnyard manure. Apply 150 pounds of nitrogen (N)/A when corn follows corn.

For grain production under irrigation -- Apply 80 to 120 pounds of nitrogen (N)/A with the lower rate following alfalfa or clover. Apply 40 to 60 pounds of nitrogen (N)/A to supplement barnyard manure.

For dryland corn -- Apply 50 to 80 pounds of nitrogen (N)/A.

For best results, part of the nitrogen should be banded with the phosphorus 3 to 4 inches to the side and 2 to 4 inches below the seed. To avoid salt damage to young seedlings, the total of banded nitrogen (N)/A plus added potash should not exceed 120 pounds per acre. Additional nitrogen can be applied broadcast or as a top dressing.

**Phosphorus**

Phosphate fertilizer is most effective if banded beside and below the seed at planting time. If banding equipment is not available, use the heavier rates recommended below. The following rates are recommended for both silage and grain under irrigation; use slightly lower rates for dryland corn.

1. With soil test values below 12 pounds of phosphorus (P)/A--Apply 80 to 100 pounds of phosphate (P₂O₅)/A.

2. With soil test values between 12 and 25 pounds of phosphorus (P)/A--Apply 60 to 80 pounds of phosphate (P₂O₅)/A.
3. With soil test values between 25 and 40 pounds of phosphorus (P)/A--
   Apply 40 to 60 pounds of phosphate (P₂O₅)/A.

4. With soil test values above 40 pounds of phosphorus (P)/A--
   Apply 20 to 30 pounds of phosphate (P₂O₅)/A if banded when planting.

Potassium

Modest applications of potash fertilizers can be banded at planting time, providing
the total of banded potash and banded nitrogen does not exceed 120 pounds per acre.
The remainder should be broadcast before seeding.

1. With soil test values below 150 pounds of potassium (K)/A--
   Apply 80 to 120 pounds of potash (K₂O)/A.

2. With soil test values between 150 and 250 pounds of potassium (K)/A--
   Apply 60 to 80 pounds of potash (K₂O)/A.

3. With soil test values between 250 and 350 pounds of potassium (K)/A--
   Apply 40 to 60 pounds of potash (K₂O)/A.

4. With soil test values above 350 pounds of potassium (K)/A--
   Potash response is not expected.

Sulfur

The applied fertilizers should include 20 to 25 pounds of sulfur (S)/A. Usually
the sulfur can be included in the materials that supply needed nitrogen, phosphate, or potash.

Boron

There have been no observed indications of boron deficiencies or boron response
on field corn in southern Oregon.

Lime

There is no indication of a direct response of corn to lime applications in
southern Oregon. Indirectly, lime can substantially benefit corn production if
lime is needed to produce good yields of alfalfa or clover in rotation. Applications of lime may be desirable on soils low in calcium and high in magnesium, but
in this case it should be applied to the legume crop.

Magnesium

There have been no observed indications of magnesium deficiencies in southern
Oregon.

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