

OCT - 3 1969

# FERTILIZE

in the

# FALL

*For Best Results,  
Many Fertilizers  
Should Be  
Fall Applied*



Cooperative Extension Service  
Oregon State University, Corvallis

## Fall is often the best time to apply fertilizer in Oregon

The profitable production of most crops in Oregon depends on the use of fertilizer. To be most effective, essential nutrients must be available to plant roots when growth starts in the spring. In some instances, fall growth is also important. Hence, the long-standing recommendation for "fall" or "early spring" application of fertilizers. In western Oregon, extended periods of mild, wet weather occur throughout the winter and spring. Growth starts early in the spring—in spite of the wet soil conditions which make spreading fertilizer difficult or impossible.

Fall fertilization means applying fertilizer any time from early September until possibly as late as the last of November or early December. Fall application can cut costs and boost yields. Here are the reasons:

- Many perennial crops and winter annuals make growth in the fall. Adequate fertilization at this stage of growth helps next year's yields.
- Winter rains and frost help to move fertilizer into the soil, assuring ample nutrients for early spring growth. Spring-applied material may fail to get down to the root area.

No doubt about the delay in this attempt at spring application.



No problem with this fall fertilizer application.

- All parts of all fields can be covered with power equipment easily and quickly—no pulling around wet spots; no stuck tractors or frayed tempers.
- Research has shown that winter leaching and other losses are negligible with some nutrients such as phosphorus and potassium. With these nutrients, loss due to winter floods is not serious unless there is erosion.
- Fall application reduces damaging soil compaction. In the spring, heavy equipment will cause compaction of wet soils.
- With at least a portion of the fertilizing job out of the way in the fall, there is more time for other work that *must* be done during the first favorable spring weather.
- Favorable dry fall weather from factory to farm means that materials are easy to handle—no gumminess or stickiness. Fertilizers flow evenly through spreading equipment. There are fewer broken bags.
- Fall is a fertilizer buyer's market and dealers are well stocked with materials.
- Delivery costs are sometimes lower. Bag, bulk, or liquid fertilizer is more easily trucked to the field. Time and money saving "car to spreader" delivery is possible.
- Finally, when thinking of fall application—*put it on, don't put it off*—favorable falls have been known to end in early October.



Fall fertilization is a common practice in eastern Oregon.

## Behavior of fertilizer nutrients guides fall application

**Phosphorus (P).** P fertilizers do not readily move through the soil. P should be placed where it can be reached by the roots. Band placement helps on new seedings. On established stands, winter rains and frost help work the P into the root zone. Ample available P is necessary to support vigorous early growth.

**Potassium (K).** Water carries K fertilizer into the soil where it is adsorbed onto the surface of clay and humus particles and held until used by crops. Without irrigation, all of the yearly need of perennial forage for K can be fall applied. Grass and legumes tend to take up more K than they need; therefore, with irrigated pasture or hay, apply half the K requirement in the fall and half June 15 to 30.

**Sulfur (S).** Because of the importance of S in the early growth of crops, fall applications of S are frequently recommended, even though S is leached in some soils. Fall application of S, where required, is a recommended practice in eastern Oregon.

**Boron (B).** There is some loss of B through leaching, but not enough to justify another spreading operation in the spring. Usually two to four pounds of B will supply the need of next year's crop. B should not be banded close to the seed.

**Lime.** To be most effective, lime must be applied in advance of seeding. This automatically means summer or fall application for next year's seeding.

*Nitrogen (N).* N is needed for the fall growth of grasses, winter grain, and some other crops. N not used by the plant can be lost by leaching. Rates of fall-applied N should seldom exceed 30 pounds N per acre. Crops adequately supplied with N in the fall make vigorous early spring growth, but usually additional spring applications of N will be needed.

*In eastern Oregon,* where winter leaching loss is not as serious, the application of N during the summer and fall for the next year's crop is a recommended and widely used practice. Follow-up additional applications of N in the spring are often used.

### Fall applications of P, K, S, and B

Where needed, fall applications of P, K, S, and B are recommended for the crops listed below. *Follow OSU fertilizer recommendations for materials and rates.*

*Clover-grass pastures.* With irrigation, an extra K application early the next June may be necessary. An early fall N application will extend fall grass growth. Grass growth should be controlled by grazing or clipping to avoid smothering clover.

*Fall-seeded grass-legume mixtures.* Adequate fertilizer at seeding time can assure a good stand and help young seedlings develop root growth to survive through the winter. Band the P below the seed if possible. Not over 30 pounds per acre of N will get grass off to a good start.

*Subclover.* New seedlings commence growth in the fall, and fall fertilizer applications are therefore especially important.

*Alfalfa (established stand).* The total seasonal requirement of P, S, and B can be fall applied. With irrigation, half of the K should be applied after the first cutting.

*Winter grain and common rye grass.* In addition to P, K, and S, 15 to 20 pounds of N should be fall applied where available N levels in the soil are low. Fall N applications are probably not necessary following legumes or crops which have received moderate to high N fertilization.

*Winter legumes (crimson clover, vetch, and peas).* Fall application of fertilizer on these short-lived annuals is particularly effective.

*Cover crops.* Cover crops must make vigorous fall growth if they are to prevent erosion and leaching losses and improve the soil. Some N and S is nearly always necessary. On many orchards, it pays to fertilize the cover crop even though additional fertilizer is not needed for trees.

*Grass seed.* Most grass seed crops need some N and S in the fall. All of the P and K, if needed, should be fall applied.

*Spring-seeded crops.* Except for lime there is no advantage in applying fertilizer in the fall for crops to be seeded the next spring. Fertilizers are normally applied at seeding time.

Fall application of certain fertilizers also is recommended on legume seed, mint, tree fruits and nuts, strawberries, cane fruits, turf, and perennial ornamentals.

### Spring applications

If needed fertilizer was *not* put on in the fall, spring applications are still worthwhile—the earlier the better.

### Soil testing is important

Soil tests predict the need for P, K, B, and lime. When existing levels for these nutrients are adequate, even fall application will not pay. Last year's soil test can guide this fall's applications but do not depend on older tests. High-yielding crops can lower the levels of nutrients in soils in a short time.

Soil sample boxes, directions for sampling, and information sheets may be obtained from your county extension office or your fertilizer dealer may have them.

The Soil Testing Laboratory gives fast service in the summer and early fall. There is less competition from the "Johnny come lately" spring sampler.

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*This circular was prepared by E. Hugh Gardner, Extension soils specialist, Oregon State University. It was reviewed by a committee of Extension agents and members of the Oregon Soil Improvement Committee of the Pacific Northwest Plant Food Association.*

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