

What is a seed?

A seed may be described as:

- 1) a ripened ovule
- 2) an integumented megasporangium
- 3) a dynamic series of processes and conditions
- 4) a unique living system
- 5) a complex of biologic factors
- 6) an encapsulated micro plant
- 7) a growing plant in semi-dormancy
- 8) a suspended growth mechanism

The term "seed" implies a protected embryo, capable of germination, which can produce a new plant. A seed results from a stigma (female) being fertilized with pollen from an anther (male). The seed contains energy and "directions or information" that guide its subsequent germination and development, the exact biochemical nature of which remains unknown.

Seeds respire at very slow rates. Length of life varies with environment. Some common weed seeds produce plants after 90 years in the soil. Lotus seeds 2,000 years old brought from a lake bed in China produced plants that are blooming in Washington, D. C. On the contrary, hot humid holds of unrefrigerated ships caused nearly total death of fescue seeds brought from New Zealand.

Dormancy in seeds is critical, unique and poorly understood. No one seems to know why one cocklebur seed (two to a capsule) will germinate at once while its mate refuses to break dormancy and germinate until a year later.

Freshly-harvested Merion bluegrass seed stubbornly refuses to germinate for 30 to 40 days. A year later, seeds from the same lot will germinate as quickly as ryegrass.

Some seeds have germination-inhibiting factors in the *coloring* material of the seed coat (Coronilla). Untreated seeds that germinate 3 to 4 per cent may have 50-60 per cent germination after a 24-hour soaking. The reddish-colored soak water, when poured on other seeds, will inhibit germination and may kill seedlings.

Nature produces seeds in an infinite variety of sizes, forms, appendages, weights, shapes, colors and seed-coat textures. These differences make it possible to separate most weed seeds from crop seed.

There is mystery and romance in seeds which, essentially, represent life in suspended animation. Seeds present a challenge to anyone who desires a look into the unknown.

users of materials. It is this type of published information that should be developed and distributed by the various state and regional centers of turf information.

Until turf managers can learn to grow weed-free turf with improved grasses, soil amendments, modern fertilizers, fungicides and controlled irrigation, they will have to become better chemists in order to understand what it is that they are doing with powerful materials that are effective at mere ounces per acre.

It was only 114 years ago that the first commercial mixed fertilizer was made in Baltimore. We've had natural organic fertilizers ever since our agriculturally-minded ancestors started spreading the manure from their domestic animals, saving the blood from butcherings and scraping bird droppings off the rocks. Later came "waste" seed meals when we learned to press oil from cottonseeds, castor beans and soybeans. Lest anyone forget, it has been only a little more than a decade
(Continued on page 106)