



# UNITED STATES GOLF ASSOCIATION GREEN SECTION

## Mid-Continent Turfletter

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### SOME THOUGHTS ON ORGANIC MATTER

While the percentage of organic matter in mineral soils is low, its presence and role in the soil are important for plant growth.

Early chemists defined organic compounds as those composed of carbon and hydrogen. Through usage the term now includes those compounds and their derivatives. Soil organic matter, as discussed in SOILS AND MEN, Yearbook of Agriculture, 1938, is the bodies of dead organisms and the residues of living matter deposited on and within the soil. Because it is practically impossible to separate the living micro organisms from the dead ones, the bulk of their bodies together with their residues are commonly regarded as part of the soil organic matter.

Excess organic matter can easily cause difficulties in turf. Two of the problems most commonly seen are (1) thatch on and near the surface and (2) layers of undecomposed plant material or pockets of organic matter resulting from poor on-site mixing. These problems arise as results of the management program. For the most part, it is by management that they are corrected.

Ideally, any soil in which plants grow should be a homogeneous mixture. For this reason, we should concern ourselves with the relatively small amount of organic matter in such a mixture (soil humus).

Again from the 1938 Yearbook, soil humus represents a stage in the decomposition of soil organic matter and therefore is not a stable material. "Soil humus is not a stable material. As the organic matter decomposes, new humus is continually being formed, and part of the old is being completely mineralized. The equilibrium between the two processes (formation and mineralization) determines the amount of humus present in a soil at a given time.

During the development of a young and immature soil the amount of new humus annually added is greater than the amount undergoing mineralization, and a gradual accumulation occurs. As the soil develops and approaches maturity, the absolute amounts of humus undergoing mineralization gradually increase until they equal the amounts of newly formed humus. From that time on, the two processes--formation and mineralization--proceed at an equal rate, and the soil may be said to have reached a state of maturity or one of equilibrium with its natural environment. The average content of humus in the mature soil remains relatively constant as long as no change in natural conditions occurs. Any change in the natural conditions that upsets the equilibrium will be followed by a corresponding change in the humus content of the soil.

The significance of humus in soil is not limited to its function as a conserver of mineral plant nutrients and a regulator of their liberation. Humus modifies such physical and mechanical properties of the soil as structure, color, consistence, and moisture-holding capacity to a very great degree. For example, the formation of the granular structure most favorable for the development of crop plants is governed by the content of humus in the soil."

In summary, regardless of the amount of organic matter incorporated into a given soil at any one time, the humus content will seek a fairly uniform level which can be supported by the cropping system. If the incorporated amount is less than that level, a slight build up can be expected; if it is a greater amount, a decline should be expected.

#### SEED FORECAST

The Crop Reporting Board of the U.S.D.A. has released the following figures indicating this year's turfgrass seed production outlook.

##### Redtop

Production of redtop seed is forecast at 3,510,000 pounds which is 20 percent less than last year and the 1951-60 average. The carryover of old-crop seed by dealers and growers was 7 percent less than last year but larger than any other year since 1952. No redtop seed has been imported into the U. S. this year. All indications are that the 1962-63 initial supply (production plus carryover) will be 5 percent less than the previous average.

##### Chewings Fescue

Excellent growing and harvesting conditions in Oregon have resulted in increased Chewings fescue seed production of 14 percent above average. Carryover of seed was 19 percent lower than last year but more than double the previous average, and the initial supply for 1962-63 is estimated to be 9 percent less than last year but 49 percent above average. More than 200,000 pounds of Chewings fescue seed were imported from the Netherlands during the year ending June 30, 1962.

##### Red Fescue

Acreage of red fescue in Idaho, Washington, and Oregon is down from last year, but an increased yield of 27 pounds per acre is expected for the three-state area.

Carryover on June 30, 1962 was down 26 percent from last year; and imports from Canada, Denmark, and the Netherlands totaled 9,996,000 pounds during the year ending June 30, 1962. This is somewhat lower than a year ago, and the 1962-63 supply of seed from all sources is expected to be 22 percent lower than last year.

##### Tall Fescue

Production of tall fescue in Idaho and Oregon is increased this year; but when added with the forecast for the nine Southern States, production is expected to be 23 percent less than last year.

Carryover of old crop seed is down 41 percent and there were no imports. Current supplies are estimated to be 26 percent below average.

Merion Kentucky Bluegrass

A total of 14,900 acres of Merion Kentucky bluegrass seed are intended for harvest this year in Idaho, Washington, Oregon, and California. This is a decline of 6 percent in acreage from last year, but production level is expected to be 42 pounds per acre above average.

Carryover from last year is almost double that of the year before, and 1962-63 supplies are expected to be up 9 percent from last year.

Ryegrass Seed Stock

Carryover of last year's seed is 9 percent below the figure of one year ago, and the estimate of 1962-63 seed production has not yet been released.

PROTECTION AGAINST SNOW MOLD

Now is the time to lay down a protective covering against the disease organisms causing snow mold. Most common of the snow molds are Gray Snow Mold caused by Typhula spp. and Pink Snow Mold caused by Fusarium nivale. These disease organisms thrive under moist, cool atmospheric conditions and get a good head start during the winter under a cover of snow, provided a protective treatment is not applied earlier.

Applications of mercury chlorides at a rate of 2 to 4 ounces per 1000 square feet before the first snow is forecast and again during a midwinter thaw have given satisfactory control. Experimental results with cadmium compounds used at a rate of one ounce in 10 gallons of water per 1000 square feet have also shown good results.

DATES TO REMEMBER

- |      |                        |   |
|------|------------------------|---|
| 1962 | December 4-5-6.....    | Oklahoma Turfgrass Conf.<br>Oklahoma State University<br>Stillwater, Oklahoma                       |
|      | December 10-11-12..... | Texas Turfgrass Conference<br>Texas A & M College<br>College Station, Texas                         |
| 1963 | January 25.....        | USGA Educational Meeting<br>Biltmore Hotel<br>New York City, N.Y.                                   |
|      | February 6-15.....     | 34th GCSAA International<br>Turfgrass Conference & Show<br>El Cortez Hotel<br>San Diego, California |

# **Mid-Continent Turfletter**

USGA GREEN SECTION

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