UNITED STATES GOLF ASSOCIATION
GREEN SECTION
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BE CAREFUL WITH ORGANIC FERTILIZERS CONTAINING UREA

Urea Acts Rapidly

Urea is an inexpensive synthetic organic source of nitrogen. Often it compares favorably in cost per unit of actual nitrogen with other water soluble sources like ammonium sulfate, ammonium nitrate or calcium nitrate. For this reason it deserves consideration when a fast acting nitrogen material is desired to stimulate rapid growth. As with any water soluble source of nitrogen, urea is short-lived and can burn the grass unless proper precaution is taken to water immediately following an application. This burning factor, plus an over stimulation of the turf which intensified disease problems, has been noticed by a few of our member clubs.

The responsibility for turf damage lies not in the fault of urea or with the superintendent, but in the hands of manufacturers through misrepresentation, and State Fertilizer Laws that allow urea to be listed with other organic sources of nitrogen. To cite an example, the California Fertilizer Code requires a manufacturer to specify the minimum percentage of nitric, ammonic, organic nitrogen, and total nitrogen from all sources. It is also necessary to state the specific materials from which organic nitrogen is derived, and cyanamide and urea may be claimed as organic nitrogen.

Thus it is possible to purchase an all organic 6% nitrogen fertilizer which reacts in a manner that closely approaches ammonium sulfate. One brand that we recently checked on fell in this category with the organic sources listed as "urea, cyanamide, tankage and seed meals". Cyanamide is not of great importance as a large source of readily available nitrogen in mixed fertilizers since it is used primarily as a physical conditioner. A letter to the manufacturer of this material requesting a percentage breakdown of the various organic sources failed to elicit the courtesy of a reply. A check with the State Fertilizer Control Board's Chemist further informed us that even a chemical analysis of the material would be no guarantee that subsequent shipments would have the same percentage breakdown. Thus, a club using this material would never know exactly what to expect in the way of turfgrass response, unless a chemical analysis is made each and every time a new shipment is purchased.

True Organics Release Nitrogen Slowly

One may well ask: "Why all the fuss? The fertilizer must have the minimum amount of nitrogen listed on the bag, and what difference does it make whether the source is water soluble or slowly available?" The answer to this question is as follows:

1. True organics (turf agronomist's term) like activated sewage sludge, seed meals and tankage release their nitrogen slowly over a long period of time. This allows the superintendent to fertilize less frequently and at heavier rates for any given application. The result is more uniform playing conditions for the golfer, and under most circumstances a decided savings in labor.

2. True organics can be applied at heavier rates than water solubles without burning the turfgrasses. With many clubs this factor is important because of inexperienced and careless help. Under most conditions it is not even necessary to water immediately following an application.

3. True organics react when conditions are favorable for grass growth. During cold weather they do not break down to release their nitrogen, thus little fertility value is lost through leaching from winter rains.

4. True organics are more costly per unit of nitrogen. Seed meals and tankage command a high price for animal feeds, and activated sewage sludge is costly to process. Therefore, an organic nitrogen fertilizer which contains a high percentage of inexpensive urea should sell at a price only slightly higher than other inexpensive sources of water soluble nitrogen. It is from the standpoint of comparable costs as well as reaction where misrepresentation can take place.

The Superintendent Is Confused

The superintendent has been educated to think of all organic nitrogen fertilizers as being slowly available, non-burning sources of nitrogen. He compares the analysis of urea organics and finds that it is the same as his favorite brand of activated sewage sludge. He compares the price and finds that it costs considerably less per ton. He tries it out on a patch of his nursery turf and finds that the rapid reaction far surpasses the activated sewage sludge. Thus, he reaches the conclusion that the urea organic is the best buy.

It is not until later, if ever, that he finds the urea organic's holdover value in stimulating grass growth is not as good because it is used up more rapidly. Since he has always been careful to immediately water following the application of any type of fertilizer, the turf may never show typical burn marks. If disease is more troublesome, or the golfers complain of slow greens during the afternoon when they were mowed in the morning, he attributes the cause to unseasonable weather.

You Have The Right To Know What's In The Bag

Perhaps it would be wise to again state that the Green Section holds no brief against the use of water soluble sources of nitrogen. Many super-

intendents use nothing else, and several use a combination of both water solubles and true organics. Those who rely on water solubles in preference to true organics find that they must apply them at lighter rates, and do so more frequently to provide the same turf density without over stimulation of turf growth. In the final analysis the amount of actual nitrogen applied, regardless of source, is the important point to remember.

This article was written to warn our member clubs against "buying a pig in a poke". Even though it is not required by law, the manufacturer should be willing to state to the individual club the percentages of all types of materials listed on the analysis label. This must be done before the superintendent can make a valid cost comparison, and estimate the expected turfgrass response to any given brand of fertilizer.

RESEARCH ACTIVITIES

Flotal Looks Good

Dr. Ray Lunt, Department of Irrigation and Soils, University of California, Los Angeles, recently established a series of seedbed preparation trials to gain preliminary information on the possible value of "Flotal" in comparison with manure to encourage early turf seedling vigor. Our observation of this trial one month after seeding indicated that "Flotal" was indeed beneficial to growth. This new conditioner is a ferric ammonium organic complex containing 2.4% ammonic nitrogen and 10% iron expressed as metalic. Plots treated with this material had better color, more uniform coverage, and considerably more vigorous growth.

According to Gordon Wyckoff, Senior Technician in charge of the turf plots, the "Flotal" treated plots were also easy to return to a suitable stage of tilth following a heavy rain which occurred shortly before they were to be seeded. Conversely, the manure treatments and check plots were difficult to rework into suitable condition for seeding. It would be interesting to see "Flotal" compared with other chemical soil conditioners on the market.

Manure Was A Failure

Under UCLA conditions, steer manure used at the accepted rate of 25 pounds to a 100 square feet, failed to promote better growth than the untreated check plots. This confirms observations at other experiment stations. Manure is too expensive when purchased for its fertilizer value. Heavy manure applications at the time of seeding can intensify disease. Under most conditions, turf growth furnishes ample amounts of organic matter to the soil.

Most manures available to our member clubs contain hidden costs. Rocks and foreign matter dull the mower blades. Noxious weed seeds are often planted through the use of manure. The bulk required to furnish any worthwhile amount of plant food means increased labor costs to apply manure. Because it is unsightly and messy it causes player dissatisfaction for a considerable period of time following a direct application on fairways or tees.

MAKE PLANS NOW TO ATTEND A FALL TURFGRASS CONFERENCE. TIMES, DATES AND PLACES WILL BE LISTED IN THE TURF MANAGEMENT SECTION OF THE USGA JOURNAL.

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