

Irrigation With Sewage Effluent

A speech given by James R. Burdett at Midwest Association of Golf Course Superintendents Clinic, November 15, 1972.

(Continued from January issue)

The Environmental Age Newsletter is carrying this to the public even better than we could do with increased funds. In their August newsletter they pointed out; "A healthy lawn does the following: Absorbs gaseous air pollutants, releases oxygen and removes carbon dioxide, controls wind and water erosion, conserves moisture and reduces runoff by absorbing rainfall, releases pure unpolluted water, reduces surface temperatures during summer months, muffles noise pollution and reduces weed pollution." In the previous movie, "The Living Filter", we saw more about this recycling.

In a paper presented by Doctor H. B. Peterson, he discusses the use and buildup of soluble salts in particulate matter. His comments on humid regions, which I would call our area, indicate that the normal rainfall in our area increases the percolation of salt that precipitates or is fixed, and the quantity removed by the crop are of relatively small proportions. There are instances however, in which the buildup by fixation or precipitation may be of concern in both arid and humid climates." "Sprinkling has many advantages for applying sprinkler irrigation, particularly on lands not leveled for surface application." This is the case on our golf course.

The incidence of higher disease is practically nil and borne out from a letter from Lee Record, in which his opinion is that there would be no additional problems of disease.

The action of sludge in seed germination areas does inhibit this seed germination — referring back to Hinsley's report, "This inhibition was observed in the liquid phase of the digested sludge and was caused partly by ammonium or ammonia. Following aerobic fermentation of the digested sludge for one week, the inhibitory property is lost. This would explain why erratic results have been reported about seed germination in soils amended with sludge. It is likely that fresh digested sludge added to a soil which has already been seeded will prevent germination, however, if the seeds are put in the soil one week after the fresh sludge application or if the sludge used is old, eg; has been stocked in an open drum for weeks, germination will proceed normally."

In the September Golf Superintendent, an article by Mark Peterson, he brings out six advantages in the concept of recycling water;

- 1) Waste waters are further renovated, decreasing stream pollution.
- 2) Use of reclaimed water conserves the potable water supply.
- 3) Reclaimed water is usually available at a lower cost than other water sources.
- 4) Beneficial fertilizer elements are usually present.
- 5) Because of the seasonal requirements of turf, a need is created for off-season storage reserves. These reserves may provide lakes for a course, in addition to improving water quality.
- 6) Grasses used for turf are generally more tolerant of salinity than many agricultural crops and thus are more adaptable.

The basic requirements of irrigation water, it seems

to me, is that there be available: both an adequate supply of water, both fresh and sewage, so that the sewage effluent salt buildup would not be a problem; and an irrigation and drainage system which has had the best of engineering and planning in order to obtain maximum efficiency out of pumps and power units.

With reference back to the article in the Bull Sheet about fairway watering being a thing of the past, if we are interested in irrigating our fairways and can show to the environmentalist who has a limited amount of water available to him for sprinkling his lawn, even though our source of water does not diminish his sources, it would be a good amount of public relations along with conserving water to utilize this abundant supply of waste water.

In Illinois, a six hundred thousand dollar grant to research was provided by the Metropolitan Sanitary District of Chicago and the United States Public Health Service to the University of Illinois, for "research to learn the best way to handle waste water." It is to the benefit of municipalities to have an area such as golf course turf on which to sprinkle their waste effluent. This sewage effluent "consists of waste water containing three to five percent solids." Pumps, valves, piping, and sprinklers have been devised, as we saw in the Los Almos experiment, to handle this particulate matter. And in the recent issue of "Chemical Engineering" devices to detect Biochemical Oxygen Demand (BOD), Total Oxygen Demand (TOD), and on-line analyzers for Total Carbon (TC) and Total Organic Carbon (TOC) were discussed.

The Federal Water Pollution Control Act, commonly known as the river pollution bill, puts much responsibility onto the local governments to refrain from dumping any polluted water into the rivers. It also authorizes considerable funds to finance 85% of the cost of diverting this water. It is with the guidance and leadership of the golf course superintendent that his course will not be left in the lurch for need of irrigated fairways. Remember that 130 acres is sufficient to rejuvenate water from a town of 10,000. But if he becomes intimately acquainted with the water pollution control act and his local governments that his job then turns into the profession which he is so capable of handling.

The place to go
when stock is low . . .

BURDETT'S

Turf, Agriculture, Recreation) Supplies and Chemicals

Swift Road at North Avenue
P. O. Box 186
Lombard, Illinois 60148
(312) 629-1123