Knotweed Control at Wethersfield

By **Alexander M. Radko,** Eastern Director, Green Section, The United States Golf Association

Knotweed is an annual weed that was a serious problem on golf courses in 1963. Because of the severe winter-spring problems encountered in the Northeast during that year, knotweed grew uninhibited.

In this area knotweed germinates "like clockwork" during the first week of April every year. It had no competition from the permanent grasses or from *Poa annua* in fairways or tees because April was unseasonably cold, dry, and windy. It normally makes its appearance in areas of heavy traffic made by foot, car, or cart. It also volunteers where weaknesses occur. Once it germinates, it makes rapid growth to maturity, then seeds heavily and dies with the frost in fall. It grows from a single tap root, and its vine-like branches make progress despite unfavorable weather. It is a well known fact that the drier the climate, and the more compact the soil, the better this weed seems to thrive.

Once the plant has gone to maturity, it is a certainty that come next April, hundreds of seedlings will emerge on the spot where old plants matured and died the year before.

Because of the dry, cold, and windy climate in spring and the severe droughty summer, 1963 was a particularly difficult year to attempt control of the seedling knotweed. But there is always the exception that disproves the rule. Wethersfield Country Club in Wethersfield, Connecticut, annually is host to the Insurance City Open, and Supt. William Dest strives to give the touring pros the very best playing conditions possible. Except for knotweed, which seemed to be his major fairway problem, Dest has provided fine turf conditions for tournament play each year. For the 1963 tournament, he vowed to go after knotweed at all costs. As fate would have it, 1963's infestation was the worst ever and Dest decided to go ahead with plans despite adverse weather conditions and no fairway irrigation system. Choosing his days carefully he embarked on the following spray program of sodium arsenite per acre, resulting in very good overall control:

Date	Amount
April 24	1 pint
May 1	1.5 pints
May 13	1.5 pints
May 21	1 quart
(It rained after May 21 spray)	
May 24	1 quart
June 12	1.5 pints

On June 13, 1/2 pint of 2,4-D was sprayed per acre and on June 21, Dest sprayed a mixture of one quart PMA (10%) and 1/2 pint 2,4-D per acre.

The liquid sodium arsenite used was five pounds per gallon strength.

Supt. William Dest on No. 10 fairway after final application of sodium arsenite. Note lack of severe turf injury despite unfavorable climatic conditions for knotweed control.

Thirty-five gallons of water per acre were used for each spray treatment. Control was very good and it appeared that very few plants matured. It was estimated that 80% control was obtained.

Supt. Dest was able to apply sodium arsenite by spraying in the early morning when temperatures were below 70°F. and by waiting for even the slightest rainfall so that there was some soil moisture available. These are the two important requirements for using sodium arsenite . . . ample soil moisture and air temperatures below 70°F. By choosing days wisely, progress in control is possible even during the most difficult seasons as experienced in 1963 in the Northeast.

Tifgreen (Tifton 328) Bermudagrass for Golf Greens

By Glenn W. Burton*

Tifgreen is a sterile F_1 hybrid (2n=27) between a fine-textured common, *Cynodon dactylon,* selection (2n=36) from the fourth green on the Charlotte Country Club, Charlotte, N. C., and *Cynodon transvaalensis* (2n=18). It was bred and evaluated at Tifton, Georgia, and is a product of the turf research supported by the Georgia Coastal Plain Experiment Station, the U.S. Department of Agriculture, the United States Golf Association and the Southern Golf Association. Created in 1951, released in 1956, planted on hundreds of golf courses in the United States and around the world, Tifgreen has passed the test of time.

Tifgreen is a low-growing, rapidly spreading, disease-resistant hybrid that makes a dense, weed-resistant turf. Its fine, soft forest green leaves and few seedheads are largely responsible for its excellent putting qualities. It tolerates overseeding with winter grass better than most bermudas. Although it has survived the winter at Manhattan, Kansas, and Beltsville, Maryland, Tifgreen is recommended for golf greens only in the bermudagrass belt. Its short stems bear yellowish-green heads that never shed pollen and never produce seed.

GOLF GREEN ESTABLISHMENT

1. Locate greens in full sunlight with good air movement.

2. Provide good soil drainage. Tile 18 inches below the surface overlaid with six inches of crushed rock and some 12 inches of a suitable putting green soil (perhaps a mixture of sand and topsoil) is recommended.

3. Contour the green to drain water from its surface and away from paths of heavy traffic.

4. Uniformly apply and work into the soil lime and fertilizer according to soil test. On most soils, a complete fertilizer such as an 8-8-8 applied at a rate of 20 to 25 pounds per 1,000 square feet will be adequate.

5. Fumigate soil with one pound of methyl bromide per 100 square feet under well-anchored airtight polyethylene covers for 24 to 48 hours to kill weed seeds, nematodes, and other soil-borne pests. Soil temperatures must be above 50°F. Wait 48 hours before planting except on heavy soils and in cold weather when a

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