

POA ANNUA—What to do With It



Even today, Poa annua occasionally comes along with good, permanent grass seeds. Here, Dr. R. Kneebone, University of Arizona, points to a Poa annua straggler in a 1971 overseeding of red fescue.

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P*oa annua* continues to be one of the most popular topics when turf managers meet. It has been discussed for the last 50 years and is probably good for at least another 50.

Although a native of Europe, *Poa annua*, or annual bluegrass, is now found around the world. Many turf experts view it as a weed, and, therefore, it is seldom planted intentionally today. However, at one time it was a straggler in nearly all seed mixtures used on golf courses in the northern, cool, humid regions of the world. Because of its universal presence, it will invade and continue to become the dominant specie in an irrigated, close-cut, high-fertility area, if given the opportunity and if not controlled with chemicals or conscientious cultural programs favoring perennial varieties. Occasionally, when *Poa annua* becomes the dominant species, the cultural program is changed to meet the demands of this particular plant.

Annual bluegrass resembles other bluegrasses morphologically in the folded-leaf bud

and boat or keel-shaped leaf tip characteristics. However, it is readily distinguished from Kentucky bluegrass by its lighter green color, larger ligule, the absence of rhizomes, and prolific seedhead production. For these reasons, many superintendents and professional turf managers have attempted a number of methods to eradicate *Poa annua*.

CHEMICAL CONTROL

Over 40 years ago, greenkeepers observed less *Poa annua* in greens that were treated with lead arsenate for the control of worms and insects. Today, arsenates are the most widely used chemical for reducing and controlling annual bluegrass. The principle involved is the gradual build-up of arsenate in the soil to a level that provides toxicity to the annual bluegrass plant. When using a calcium or lead arsenate compound for this purpose, several factors must be considered and given attention: (1) low areas must have good drainage, (2) maintain a



Newly germinated seed after the "scorched earth" procedure was implemented.

soil pH between 6.0 and 7.5, (3) use a minimal amount of phosphorus in the fertilizer program, (4) overseed often with desirable bentgrass or bluegrass varieties.

SCORCHED EARTH

Another successful method is the "scorched earth" procedure. When attempting to control *Poa annua* this way, a non-residual contact herbicide, such as sodium arsenite, is applied twice with four or five days between applications. A week after the initial herbicide treatment, seedbed preparations are accomplished by removing excessive thatch, aerifying at least six to eight times and breaking up the soil cores with a thatching machine adjusted so that it penetrates the soil at least 1/2-inch. Mascerating the aerifier cores with a thatching machine will prepare a desirable seedbed.

The renovated area should then be fertilized and overseeded with a desirable grass species. Maintain a judicious irrigation program for the encouragement of the young seedlings.

PRE-EMERGENCE HERBICIDE

Several pre-emergence herbicides such as bensulide, benefin and DCPA products, have been introduced for control of crabgrass and

have shown variable control of *Poa annua* as well. Another chemical reportedly suppresses seedhead production and theoretically controls the annual plant in this way.

CULTURAL METHODS

Aeration alone, aeration and thatching, or thatching alone, followed by overseeding, are some of the cultural methods that have been used to discourage *Poa annua* and encourage the perennial varieties. Discouraging *Poa annua* by cultural methods alone is a long process. The program must be repeated for several years (at least four to five) until the permanent turf is able to compete successfully against the annual plant.

As mentioned earlier, when *Poa annua* becomes the dominant specie in fairway or tee turf, a cultural program is sometimes adopted to meet the requirements of this unique plant. In northern, cool and humid regions *Poa annua* will usually produce acceptable fairway and tee playing conditions. It maintains good color for most of the year and greens up earlier in the spring than bentgrass and stays greener longer in the fall. It can be cut from 1/4 to 3/4-inch, and most golfers will agree this is the way a fairway should be.

What are some of the cultural practices necessary to keep it alive? For one, judicious watering during the summer is essential. As summer soil temperatures increase, *Poa annua* roots decrease until they exist only in the top inch or two of the soil. This demands good watering practices. Syringing during the hot days of July and August is often necessary. The "wilt watch" or "wilt patrol" is made up of crew members who are responsible for syringing wilting fairway turf. By applying a small amount of water to the wilting area, this annual plant can be preserved for another day. Should wilting *Poa annua* fail to be syringed, it will very likely die, turn brown and remain in this condition until the late fall or next spring.

Sound fertilization is another cultural practice needed in any *Poa annua* preservation program. Most success is achieved with slow-release type materials that allow uniform, healthy growth during the year. Initial amounts of phosphorus can be helpful in strengthening the *Poa annua* plant. The use of potassium or potash helps to stiffen the leaf blade and adds to disease resistance of the plant.

A fungicide program should also be followed. *Helminthosporium spp.* (leaf spot), *Sclerotinia homeocarpa* (dollar spot), *Rhizoctonia solani* (brown patch) and *Fusarium Nivale* (Fusarium patch) cause large amounts of *Poa annua* to die each year.

Finally, good drainage and timely aeration must be practiced in order to maintain this grass and help it to grow. If all of these practices are followed and if the weatherman cooperates, *Poa annua* can usually provide a reasonable playing turf that is not always unattractive.

Several different strains of *Poa annua* have been observed. Some perform better during stress periods than others. We have often heard the suggestion that the plant breeder should develop a type of *Poa annua* that will withstand climatic stress conditions. Genetic improvements have been attempted. The problem is that *Poa annua* is not a single, apomictic strain as are other bluegrasses. This fact makes developing hardier *Poa annua* varieties far more difficult. For this reason and others, stronger types of perennial bluegrass are favored by researchers. Strong perennial types can be very competitive with *Poa annua*.

Poa annua can survive and provide a desirable playing surface in northern, cool humid regions if properly managed. However, whenever and wherever high summer temperatures prevail, one can expect difficulty in managing this grass. Therefore, the control measures outlined earlier and the development of a more desirable, permanent turf seems advisable.

Poa annua lost on a green due to high temperatures.

