

USGA PROGRESS REPORT: November 2000

PROJECT: Cultivar Development of Greens-type *Poa annua*

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SEED PRODUCTION: The main thrust of the project continues to be in the area of seed increase and seed production. A general observation is that strains exhibiting the best turf quality typically have the lowest seed yields. However, the program is continuing to increase a range of "high" and "low" seed yielding strains. Although the higher seed yielding types might not possess turf quality acceptable for golf greens, they may be entirely acceptable as tee or fairway turf. The seed yield of some greens-type *Poa annua* are so low that they might not be cost-effective to produce for the marketplace. Nonetheless, these strains are also being increased because currently seed costs are only a small part of the overall cost of new green construction and establishment. The project continues to experiment with different methods of seed production and harvest. We are currently harvesting seed as either mower clippings or by vacuuming seed directly off of uncut inflorescences.

The spring 2000 seed harvest produced approximately 12 pounds of seed, i.e. the combined total of all selections. This seed was earmarked for regional trial testing. However, levels of contamination from wild, weedy strains of *Poa annua* within these seed lot could not be reliably determined. Therefore, the establishment of regional trials will be postponed until Fall 2001 when seed lots can be assured of being weed-free. An on-site evaluation trial was established at the Valentine Research Facility in Fall 2000 using weed-free seed from 60 of the breeding program's finest selections. Each of these selections has been planted into seed increase fields in Fall 2000. The program should be capable of harvesting enough seed of these 60 selections in Spring 2001 to establish a regional test in Fall 2001. Therefore, a Fall 2001 trial will contain more of the breeding program's elite lines than a trial that would have been planted this fall.

EXTREME TEMPERATURE TOLERANCE: The project's experimental green for root zone examination (planted Fall 1999) has become established this year and the camera inserts (two per plot) have been installed. Throughout the growing season the mowing height has been gradually lowered. At present, the height of cut of the green is 5/32 of an inch (3.9 mm) and will remain there for the duration of the rooting observations. This experimental green is the project of Eric Lyons, an NSF Graduate Student Fellow, whose goal will be to elucidate the root biology of greens-type *Poa annua* under extreme temperatures (both heat and cold) throughout the growing season.

George Hamilton's Ph.D. dissertation research on the cold and ice coverage tolerance continues to detail differences between *Poa annua* and creeping bentgrass in terms of temperature and day length sensitivity during the hardening process.

The breeding program is continuing its long-standing collaboration with Ms. Julie Dionne (Laval University) and Yves Castonguay (Agriculture Canada). Julie's results are presently taking the form of manuscripts for scientific and popular journals. Her results are also giving us new directions to focus our future research.

Heat tolerance testing of greens-type *Poa annua* selections continues to be the weak link in the project. I am currently looking for a person to fill this position. As this is the third time in three years that I have had to fill this position, there has been some financial holdover of the grant due to the salary savings. I would anticipate that, by the end of this fiscal cycle, the project will be one year behind in its spending. At this time, it would be helpful for me to know if the USGA Research Committee has other plans for this money, in which case I will need to make arrangements for its return; or, if a one-

year extension may be granted to the project. In either case, it will be my pleasure to work with you now or in the future.

GERMPLASM RESOURCES AND COLLECTING: During spring 2000, samples of greens-type *Poa annua* were collected from golf greens located in the mid-Atlantic region through the organization and helpful assistance of Mr. Stan Zontek, Director, USGA Mid-Atlantic Region.

POA PATENT: A substantial portion of the year 2000 was focused on drafting a request to the US Patent and Trademark Office for a re-examine of the Minnesota Utility Patent (U.S. Patent 5,912,412) which covers perennial cultivars of *Poa annua* with restricted flowering habits for use as turf. Currently, the request is being reviewed by several independent law firms. After these reviews are completed and the document is appropriately revised, the request will be submitted to the USPTO for consideration. The resulting document is sizeable so only an abstract of the arguments contained in the request follows:

It is submitted that claims 1 through 41 of the subject patent are indistinguishable from, identical to, technically anticipated, or made obvious to any person of ordinary skill in the art, by the following newly applied non-patent prior art literature.

The following examples of non-patent prior art applicable to 35 USC 102(b) and 103(a) are drawn to cultivars (i.e. cultivated and uniform varieties) of perennial *Poa annua* with particular flowering (i.e. "restricted flowering") and morphological characteristics for use as turf. These examples of prior art originate from two sources of non-patent literature:

Literature source #1: Twenty-seven newly applied, scientific papers with senior authorship other than inventor White along with 4 examples of previously applied prior art for purposes of continuity.

Literature source #2: Nine newly applied research reports with senior authorship by Inventor White along with 4 examples of prior art literature that demonstrate the public availability of these reports including 1 with senior authorship by Inventor White.

Lastly, in the process of applying these prior art references to U.S. Patent 5,912,412, it was discovered that Inventor White and the Assignee University of Minnesota might have been less-than-forthright or simply negligent with regards to the INDEPENDENT INVENTOR(S) form and the NONPROFIT ORGANIZATION form, contained in the file wrapper of U.S. Patent 5,912,412, by omitting a nonprofit organization under 37 C.F.R. 1.9(e) and a private business under 37 C.F.R. 1.9(d) with whom they were under contractual agreement to license certain rights of White's claimed inventions at the time of the subject patent's application. While it is well known that patent re-examinations are based only upon examples of prior art publications, it is a civic duty to point out these four instances of incompleteness in the application of U.S. Patent 5,912,412 to the USPTO re-examination Examiner.