

Disease resistance is never completely achieved, but it can be expected that an on-going series of new releases will be bred for tolerance to familiar turf illnesses. Disease resistance is the first consideration with the modern turfgrass breeder. One can almost assume that any release put on the market these days has been thoroughly screened for its ability to resist at least the major diseases in its bailiwick.

We may be even entering an era in which a mild level disease is to be expected, indeed welcomed in benign form, as part of a balanced turf ecology. The breeder, then, need not try to reach the impossible goal of absolute disease immunity. Total immunity might foster rapid natural selection of serious new epidemics in an unbalanced environment.

While disease concerns may receive first attention, appearance is no less important. Of course, disease-free turf tends to be better looking, but habit of growth, seasonal response, leaf texture, density, color and many other attributes contribute to turfgrass appearance. Again, one can take for granted that cosmetic effects are pretty well screened in the proving grounds. A new turfgrass is likely to be quite attractive, of good color, with fairly decumbent foliage and short sheaths which let much photosynthetic tissue escape under conventional mowing heights. It also will exhibit reasonable aggressiveness under ordinary care, tolerable seed germination and seedling vigor, an ability to spread well; a high degree of uniformity and many other attributes that collectively impart quality and year round beauty.

These are features a breeder must maintain for successful introduction of a new cultivar. Additional virtues are sure to come in time. Certainly good performance under low maintenance looms as increasingly important, as does effective response to sophisticated maintenance such as regulated-release fertilizers. How can all of this be assembled into one genotype and not end up with something so overbred as to be doubtfully viable? How is the heterogeneity that is the hallmark of a successful genotype maintained?

One way, of course, is to mechanically blend several cultivars of a species, or mix a few cultivars of different species. This provides the long-recognized insurance that comes with planting blends and mixtures rather than monocultures. It's a practice to be recommended perhaps more for the nonprofessional than for a golf superintendent trained in the management of monocultures. Even so, the superintendent seldom finds it advantageous to challenge nature unnecessarily.

I believe there is more to cultivar blends than mere cookbook mixing, considering the unusual success enjoyed in breeding Kentucky bluegrass and perennial ryegrass cultivars. With bluegrass, heterogeneity can be achieved (indeed, it can hardly be avoided) by selecting for a high degree of apomixis. Apomixis allows a variable genotype to be perpetuated with little chance for segregation, and is thus a great boon for maintaining heterozygosity devoid of the hazards of inbreeding. No wonder Dr. Funk has given such great attention to utilizing breeding lines which display enough sexuality to allow hybridization but can retrieve a very high degree of apomixis, also.

With perennial ryegrasses, a less complicated procedure has proved feasible - the polycross system. In this procedure, proven bloodlines are interplanted and allowed to cross at will. The offspring are near enough alike and able to reproduce enough to constitute a valid cultivar. Of course, they display that degree of environmental tolerance and enhanced vigor as sexual reassortment can foster. But we still are awaiting germplasm from some harsh, bleak habitat of the Old World that can broaden the adaptability of perennial ryegrass to something like that of Kentucky bluegrass.

Nature is the master craftsman when it comes to crossing, selecting and perpetuating. While Dr. Funk's series of man-made bluegrass hybridizations are impressive, one might note that useful selections from natural populations are even more abundant among the bluegrasses. However,



## Huber Ranch Sod Nursery, Inc.

Route 41, Schneider, Indiana 46376

COMPLETE SUPPLIER OF ALL YOUR GOLF COURSE  
AND LANDSCAPE NEEDS

- Penncross Sod
- Penneagle Sod
- "Executive" blend bluegrass sod ideal for bluegrass tees
- Fertilizers - including PAR-X
- Full line of NK Seed, etc.
- Full line of B & B trees, shrubs & evergreens
- Chemicals, sprayers, spreaders, etc.

All products, including trees, are palletized and fork-lift delivered.

Indiana 219/552-0552 Chicago 312/641-2898

## Arthur Clesen Inc.

**CHEMICALS**—aquatic, fungicide, herbicide & insecticide

**DECORATIVE MULCHES**—chunk bark & shredded mulches, bag or bulk

**FERTILIZERS**—Country Club, Vertagreen, spray applied, minor elements & bulk blends

**GRASS SEED**—improved varieties, custom mixes, prairie grass & wild flowers

**HAND TOOLS**—loppers, pruners, rakes, saws & shovels

**HOSE**—hose, accessories & reels

**HYDRO MULCH/SOIL STABILIZERS**

**ICE MELT**

**OIL ABSORBENTS**

**PAINT**—Easy Marker & Tree Kote

**SOIL CONDITIONERS**—gypsum, lime, peat moss, perlite, sulfur & terra green

**SPRAYERS**—Myers, Solo, Universeal & Wheel Spray

**SPREADERS**—Cyclone, Diadem & Lely

543 DIENS DR. (312) 537-2177 WHEELING, IL 60090

polycrosses engineered by man dominate the fine fescues.

With such breeding techniques being employed, and with fresh sources of germplasm being assembled continuously, certainly turfgrass improvement has only begun. Congratulations to the cultivar breeders are indeed in order for the tremendous turfgrass selection made available to turfgrass managers today. But we can anticipate even more widely adapted, as well as specialized, selections in the future. Even the mere sorting out and proving of what is available today should provide improved turf for many awkward locations, where having good turf is now considered difficult. In the future we can expect turfgrass cultivars that are still more easily and economically maintained.

**Robert W. Schery**  
Lawn Institute

## WHY THE MUSSER FOUNDATION IS NEEDED Part I

Fred V. Grau, President

The Musser International Turfgrass Foundation is the only organization that is dedicated solely to basic research and education of talented students on the graduate level. Our goals are (1) to help develop needed research data, (2) to add to the world's turfgrass literature, and (3) most importantly, to train potential leaders in turfgrass science.

Ever since pioneer researcher, teacher, lecturer, and author H. B. Musser died in 1968 my colleagues and I have been striving to convince the entire turfgrass industry that they should help to build a permanent Fellowship Fund which, when invested, will perpetually provide for Fellowship grants leading to advanced degrees at turf-oriented land grant institutions. The logic of our efforts should be obvious. Without trained leaders to plan and conduct research, the research grant money would accomplish little.

It is axiomatic that, in helping a graduate student earn his Ph.D. degree, valuable research data will have been accumulated the world's turfgrass literature will have been enriched, and future money grants for "quickie" research will have far greater impact because a trained leader will be in charge.

We are dedicated to supporting only FELLOWSHIPS because the student who accepts the challenge for three years of intensive study is committed to this field of endeavor. Scholarships are simply money gifts or "rewards" which leave the recipient free to go his own way. Research grants are left to others since they usually finance for a short time a one-time study of a product or a practice using staff members and technical workers. We believe that FELLOWSHIPS help to build a more secure future for all turfgrass interests.

We cover all turf including golf, lawn, airfield, athletic, cemetery, park, and roadside. We promote basic research because the principles of turfgrass establishment and management are common to all disciplines.

When turfgrass history is written let it be said that the Musser Foundation devoted its energies to developing leaders, leaving the service work to those organizations whose existence depends upon continued field contacts. In this respect we are unique.

Yes, the Musser Foundation, international in scope, is needed. When scientists such as Beard, Burton, Daniel, Duich, Funk, Watson and others retire or step out of the picture they deserve to have their places filled with others equally competent. In no other way can we adequately honor their accomplishments.

The Musser Foundation is a charitable and educational, tax-exempt organization. The income from investments is used to help talented graduate students attain their Ph.D. degrees so that the turfgrass industry

will be assured of continuity in leadership. The true beneficiaries of this long-range altruistic effort are the people who love turf and use it for pleasure and for profit. To make the future secure we need to invest in the future.

Those who believe that turf has a future, and who want to make it more secure, have several ways in which they can contribute:

- (1) Make a free-will cash contribution (tax-free)
- (2) Add a name to our "Memorial Roll of Honor" through a memorial gift to honor a departed friend or loved one
- (3) Help to organize a "Musser Tournament," proceeds to go to the Fellowship Fund
- (4) Industry grants, tax-free
- (5) Charitable remainder trusts (unitrusts). Gifts that provide the donor with a lifetime income, reverting finally to the charity.

Further information on these and other ways to help may be had by writing to:

Dr. Fred V. Grau, President  
P. O. Box AA  
College Park, MD 20740-1014  
Phone: 301-864-0090



**Ed Fischer, Moderator**



**Speaker - Jim Evans at Clinic**



**Ken Wright & Paul Voykin. Paul was guest speaker at the Bayview G.C. in Thornhill, Canada during the meeting. Ken Wright is Supt. at Woodridge G.C.**