THE CULTIVAR REVOLUTION

The turfgrass world is in the midst of memorable change - the new cultivar revolution. Many turf managers of this generation are too young to remember what the situation was like only a quarter century ago when one could call upon nothing better than unselected, wild pasture grasses to seed a golf course.

This isn't to say, though, that common bluegrass (Poa pratensis) from the Midwest and fine fescue (Festuca rubra) from the Northwest were poorly adapted. After all, they had proved themselves in the crucible of natural selection for more than a century. But they did lack refinements taken for granted today. And unlike other crops, turfgrass seed was almost alone among major species - none of it had been especially selected or bred for major use as high-quality mowed turf.

Even perennial ryegrass (Lolium perenne), which today includes some of the most respected turf cultivars, was little more at midcentury than a weed species in comparison to perennial swards of bentgrass, bluegrass or fescue.

The Past Reveals the Present

A hoary but valid maxim states that the past is but a prelude. Let's turn the pages of history back a few decades so that we may better understand today's cultivar situation and expectations for continued development for the future.

Until World War II, turfgrass seed was, at best, gathered by stripping pastures where livestock had been withheld for a few weeks during the seeding season. At worst, it was simply the cleanout and the leftovers from agricultural seed. Obviously, the time was ripe for change. In a country metamorphosing from a rural to an urban way of life, a tremendous homeowner and recreational market was rapidly taking shape.

Merion Kentucky bluegrass was an omen of things to come. Its advent sounded an alert heard around the world, and Europe, which had operated under a cartel system long before the United States had legalized breeders' rights, quickly recognized the opportunity to develop a market.

After the first Merion was developed in the 1940s from the test plots at Penn State, many other cultivars followed. At Tifton, GA, Glenn Burton hybridized common bermudagrass (Cynodon dactylon) with an African species (C. trasvaalensis) to yield the triploid Tifton series for the South. The series included Tiffine, Tifgreen, Tifway and others.

Arden Jacklin displayed unusual astuteness for the times by betting his business future on the chance that the market was now ready for an improved turfgrass, even if the seed had to sold at a considerable premium. Jacklin seed introduced the Swedish beauty and Fylking bluegrass after painstaking testing in America. Several American agricultural colleges nursed along breeding programs while European seedsmen scurried far and wide seeking improved cultivars mainly for the American market.

Cultivar programs at Penn State and Rhode Island continued to make progress, but the large-scale breakthrough eventually came from Rutgers University where Dr. C. Reed Funk had assembled a tremendous bank of bluegrass germplasm. His work launched the polycross concept for superior perennial ryegrass cultivars. The advent of Manhattan was, in its way, as stimulative of new cultivars as Merion had been.

Luckily, by 1971, legislation was passed in the United States to provide a form of patent protection for newly invented plants from seed. This made it possible for America to compete with Europe, and for Rutgers to release under private aegis the many superior cultivars bred there.

Today's Mother Lode

Selection of golf green bentgrasses, which antedated Merion, goes back to Dr. J. Montieth's program at Arlington, VA. Yet, the greatest strides in cultivar development have come in the Kentucky bluegrass and perennial ryegrass species. Interestingly, with both of these species, the pitfalls of inbreeding have been avoided and still a built-in heterogeneity has been established in the cultivars.

As turfgrass breeding has progressed, breeders have selected an increasingly broader array of traits, both morphological and physiological. As great as the advances have been, more are still to come. Much research is still needed to reveal more about breeding of cultivars for insect resistance, tolerance to specific pesticides, reduced thatch formation, economy of maintenance, compatability in blends and mixtures, response to growth restraints, allelopathy, competitiveness against weeds and many other sophisticated requirements.

Unfortunately, seed yield, which has nothing to do with turf quality and may be somewhat negatively correlated, must be given prime consideration because of its obvious influence on economics.

Perhaps because of Merion's outstanding resistance to leafspot (Helminthosporium) in a day when common bluegrass has suffered severely, attention has focused upon selection and breeding for disease tolerance. The spectrum of diseases against which a turfgrass should be resistant has enlarged greatly since those early days. Newly virulent fungal races are still arising and once-not-so-serious diseases tend to become epidemic as greater turf populations are planted.

MID-AM MEETING SCHEDULE ANNOUNCED

With the dates for the 1983 Mid-America Horticultural Trade Show fast approaching, 215 exhibitors from throughout the U.S. and Canada are making plans to participate in the tenth anniversary edition of the show.

The show will run from Friday, January 14, to Sunday, January 16, at the Hyatt Regency Chicago. The show hours will be from 10 a.m. to 5 p.m. on Friday and Saturday and from 10 a.m. to 4 p.m. on Sunday. Contact **Donn W. Stanford** for more information.