

CURIOUS ABOUT CULTIVARS?

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Creation of high quality lawngrass cultivars ("varieties") is a relatively recent happening. Other than a few empirically proven golf green bentgrasses (vegetatively planted), almost no intraspecific cultivar selection was undertaken in America prior to World War II, certainly not with the familiar seeded lawngrasses (principally Kentucky bluegrasses, *Poa pratensis*; fine fescues, *Festuca rubra*; perennial ryegrasses, *Lolium perenne*; unusual circumstances did produce an exceptional colonial bentgrass, Highland, naturally by ecotypic isolation in the Oregon Cascades).

Merion discovered

The situation changed rapidly after Superintendent Valentine noticed an outstanding clone of Kentucky bluegrass on an apron at the Merion golf course near Philadelphia, in the 1930s, destined to become "Merion". Merion opened the door for the avalanche of excellent new cultivars we have today, all of them improvements upon the common grass of yesteryear. Merion proved the public would willingly pay a substantial premium for outstanding performance in a turfgrass, something doubted until Arden Jacklin and his Merion associates bet otherwise in the 1950s. Merion remains an outstanding variety, as tables 1-3 point up, but in some areas newly established diseases make life difficult for this outstanding cultivar, and newer releases supersede it.

Within the last few years new cultivars have been developed at a heady pace. Until invention of distinctive germplasm in seed was given legal protection in America in 1971, initiative for breeding new turfgrasses resided largely with European breeders, (although interest in

the breeding of public cultivars has long existed in American experiment stations). Today literally hundreds of new proprietary cultivars have been released and are under test, from many sources. Some never quite "make it" commercially, because of inadequate seed yields, fading performance, or from lack of adaptation to the American climate (as tends to be the case with some cultivars selected in the milder European environment).

Nevertheless a huge assortment of excellent selections is at hand, to be worked with and proved out. Progress is ever ongoing, even though the "ideal" turfgrass is unachievable considering all climates, modes of care, and personal preferences. Even now breeders face changing standards, different from only a few years ago when fertilizer was inexpensive, environmental awareness less evident, inflation less a concern, and fuel shortages not even imagined. America seems gradually changing from a life style that emphasized luxury to one emphasizing practicality. Rather few Americans are likely to opt for a prima donna lawngrass any more, simply because it "looks pretty"!

Sorting them out

With the abundance of new cultivars, it is necessary to sort them to determine which are best, for what purposes and in what locations. That things are not always what they seem to be is evident from tables 1-3; notable inconsistencies can be found, depending upon region, the evaluator's impression, and sheer chance (often two plots of the same cultivar, in the same location, managed in like fashion, will rate quite differently!). So there is a place for "specialist" grasses that would otherwise seem to be out-

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TABLE 1. Performance of lawngrass cultivars on the West Coast. A = in top third (A* = in top 10%), B = in middle third, C = in bottom third of ratings compiled by local authorities. For specific responses, 1 = good, 2 = medium, 3 = poor.

KENTUCKY BLUEGRASSES	WASHINGTON				leafspot	CALIFORNIA statewide	OREGON
	low mowed		tall mowed				
	winter	summer	winter	summer			
Adelphi	B	B	A	A	1		
Arboretum			B	B	3		
Arista	C	B	B	B	1		
Baron	A	A	A	A*	2	A	
Birka	A	B	A	B	1		
Bonnieblue	A*	A*	A	A	1		
Brunswick	C	C	B	C			
Enmundi							
Fylking	B	A*	C	C	1	A*	
Galaxy	A*	A	A	B	2		
Georgetown							
Glade	B	A	A	A	3		
Majestic	B	A	A	B	2		
Merion	B	A	B	A	3	C	
Nugget	A	A	C	B	1	B	
Pennstar	B	B	C	B	1	B	
Plush							
Prato	C	C	C	C	2	C	
Ram I	C	B	A	A*	3		
Sodco	B	B	A	B	3	A	
Sydsport	A*	A*	A	A	1		
Touchdown							
Common	C	C	C	C	2	C	
Park						C	
Windsor	B	A	B	A*		B	
FINE FESCUES	Winter	Summer	Red thread	Fusarium			
Atlanta	B	A	2	2			
Banner							
Fortress	C	C	3	3			
Highlight	A	A	1	1		C	
Jamestown	B	A	1	1		A	
Koket	B	A	2	1			
Pennlawn	C	B	2	1		B	
Ruby	C	B	3	1		C	
PERENNIAL RYEGRASSES	Winter quality	Summer appearance	Neat mowing				
Citation							A
Compas	B	C	2				C
Derby							A
Diplomat							A
Game	C	B	2				B
Manhattan	A	A	1			A	B
NK-100	C	B	3				C
NK-200	B	A	2			B	
Pelo	B	A	2				
Pennfine	C	A	2			A	B
Yorktown							A
Common	C	B	3				C

TABLE 2. Performance of lawngrass cultivars in the Midwest. A = in top third (A* = top 10%), B = in middle third, C = in bottom third of ratings compiled by local authorities. For specific responses, 1 = good, 2 = medium, 3 = poor.

KENTUCKY BLUEGRASSES	MISSOURI					ILLINOIS		ALABAMA	MICHIGAN						
	5 Year average Central	2 yr. Cent.	2 yr. S.E.	2 yr. S.W.	Leaf- spot	Rhizoc- tonia & Fusarium	Rust	overall average	Southern 5 year average	Spring	Leaf- spot	Snow- mold	4 year average	Northern Snow- mold	
Adelphi	C	B	A*	B				A	B	A*	1	1	1	A	1
Arboretum														C	3
Arista	C				3	3	3			C	3	2	3	B	3
Baron		B	A	B				B	A	A	1	2	1	A	1
Birka	A														
Bonnieblue	A	C	C	B				A	B	A				A	1
Brunswick		A	A	A										A	2
Enmundi		A	A	A				A	B						
Fylking	A	C	C	B		3		C		B	2	2	3	A	3
Galaxy	B	B	B	B				A		A*	1	1	1	A*	1
Georgetown	B													A*	2
Glade		A*	B	A				B							
Majestic	B	B	C	C				A	C						
Merion	B	B	B	B			3	A	C	A	1	1	1	A	2
Nugget	C	C	C	B		3		C	B	A	1	1	1	B	2
Pennstar	B	B	C	C				B		B	2	1	3	B	3
Plush		A	A	A*				A							
Prato							3			C	3	2	3	B	3
Ram I		B	A	C				B	C						
Sodco	A*	B	A	B				A		A	1	1	1	B	1
Sydsport	A	C	A*	C				B		A	1	1	1	A	3
Touchdown		A	C	B				A	C						
Common	C	B	C	B	3					C	3	3	3	C	3
Park	B	C	A	A	3			B		C	3	3	3	C	3
Windsor	A*	A*	A*	A				A		C	2	3	2	C	3
FINE FESCUES										2 yr. av.				5 yr. av.	
Atlanta										A					
Banner															
Fortress															
Highlight								C		A				C	
Jamestown								A		A				B	
Koket								A		B					
Pennlawn								A		B-C				A	
Ruby										C				B-C	
PERENNIAL RYEGRASSES															
Citation															
Compas										A					
Derby															
Diplomat															
Game															
Manhattan								A		A					
NK-100								C		C					
NK-200								B							
Pelo								C		A					
Pennfine								A		A					
Yorktown															
Common								C							

OHIO

PENNA.

Central
4 year
average

low
mainte-
nance

disease
resis-
tance

Northern
3 year
average

	Central 4 year average	low mainte- nance	disease resis- tance	Northern 3 year average	
2	A*	B	1	A	
	B	C	2		
1	A			B	
	B				
2	C			A	
	B				
	B				
B	C	1	C		
2	A				
1					
	A			A	
	A				
1	A	B	1	B	
1	A	C	2	B	
	B	C	1	C	
	A				
	B				
	A			A	
2	A*	B	1	A	
2	B	C	1	B	
	B			A	
3		A	2	C	
3	C	A	2		
	B	A	2	C	
	A				
	C				
	A				
	A				
	A				
	B				
	C				
					4 yr. av.
	C				B-C
	A				A-A
	C				B-C
	B				
	B				A-B
	A				A-A
	C				

CULTIVARS

Continued

classed in the ratings. They may have hidden virtues! I believe we can safely say that any of the cultivars in the tables will make an acceptable fine turf if "all goes well", if the grass is planted to favorable habitat and is well tended. But the search goes on for ways to minimize risk, to supply still better looking, more functional cultivars even if adopted only to certain uses (such as the golf course fairway or roadside berm) or to accommodate what has traditionally been marginal habitat.

Tables 1-3 reflect ratings by many individual observers, any of whom might see things differently than would another person. Certainly the ratings vary with fluctuations of the season, and from year to year (for the weather is not alike any two years). Keep in mind, too, that cultivars often go "down hill" with time, perhaps because new races of disease arise, or because abundant use of the cultivar permits epidemic spread. Some cultivars have special uses or adaptations, the reason why the Lawn Institute Variety Review Board's list included such self-reliant cultivars as Arboretum (appearance of which is little different from old-fashioned common bluegrass!). Some cultivars may be especially useful in blends or mixtures, extending the seed of more expensive selections while not downgrading performance of the combination. Quite often, as has recently been noted in Ohio scorings, cultivars not high-ranking of themselves may end up in near the top when combined in blends!

Artistic concoctions

Concocting blends (cultivars of the same species) or mixtures (combinations of different species) is more an art than a science. At the Lawn Institute identical mixtures planted on different occasions, and in different locations, may sometimes have bluegrass dominate, another time fescue. An ecological principle, "competitive exclusion", states that similar organisms in a stable environment will not exist indefinitely in balance, but that one

component will outcompete the other (which will then be gradually eliminated). Competitive exclusion often holds for lawnseed blends and mixtures, but equally often a minority component hangs on sufficiently to experience a revival should tribulation afflict the initial dominant. Merion, for example, is a strong competitor, tending to dominate less aggressive cultivars such as Fylking, until stripe smut (against which Fylking is resistant) sets back the Merion.

More studies needed

It is not possible to test blends and mixtures under all environmental conditions, and much is still to be learned about competitiveness of cultivars. Experience with crop plants has proven that some cultivars outcompete the weeds much better than do others, whether due to inherent vigor or to allelopathy (repressive secretions). The interactions are so involved, and beyond our ability to do much about them, perhaps lawnseed blending will always remain an art, in which experienced seedsmen do their best, realizing that sometimes one, sometimes another component will "carry the ball". It's really immaterial just so something does persist to make a fine turf!

Many avenues still merit exploration in the breeding and selection of new lawngrasses. So far resistance to insect attack has received little attention. Breeding for harmony with pesticides is in its infancy (in Illinois, recently, bluegrass cultivars were rated for Ronstar phytotoxicity, for example). Attention is now being given performance under ultra-low maintenance (e.g. Ohio). In time breeders may incorporate special features, such as Merion's ability to photosynthesize through the leafsheath (thus enabling the grass to endure defoliation more adequately) as proved by Dr. Youngner's growth chamber work in California. Certainly there is no theoretical reason why the hardiness of grasses from harsh environments cannot be bred into less hardy cultivars. □

For table 3 see page 22

TABLE 3 Performance of lawngrass cultivars on the East Coast. A = in top third (A* = top 10%), B = in middle third, C = in bottom third of ratings compiled by local authorities. For specific responses, 1 = good, 2 = medium, 3 = poor.

KENTUCKY BLUEGRASSES	MASSACHUSETTS				CONNECTICUT			RHODE ISLAND		NEW JERSEY				MARYLAND			VA.
	overall average	spring color	Hel- minth	Dollar- spot	overall average	Hel- minth	Dollar- spot	1½"	¾"	overall average	Fusarium	Leaf spot	strip smut	Hopkins 1½"	Hopkins 2½"	Center- ville 2½"	Newport News 3-yr. av.
Adelphi	B	2	3	1	C	1-2	1-2	A	A	A*	1	1	2	B			
Arboretum																	
Arista	C			1	B	1-2	3	C	C					A	B	C	C
Baron	A	2	1	1				B	A	B	3	2	2				A
Birka	B			1	A*	1-2	1-2					1	1				
Bonnieblue	C			1				A	A*	A	3	1	1		B	A	
Brunswick								A	A*	A	3						
Enmundi										B	1						
Fylking	B	2	1	1	B	1-2	1	B	B	B	3	1	1	A*	A*	C	A
Galaxy										A	3						
Georgetown					B	1	1-2										
Glade										A	1	2	1				
Majestic	C			1				A*	B	A*	3	1	2		A	A	
Merion	A*	3	1	1	B	1	3	B	A	A	3	1	3	A	A*	B	A*
Nugget	A*	3	1	3	B	1	3	B	B	B	2	1	1	C	C	C	
Pennstar	B	2	1	1	A	1-2	1-2	B	B	B	3	1	1	B	B	C	B
Plush										A	3						
Prato					A	3	1	C	C					C	C	A	C
Ram I										A*	2						
Sodco					B	1	1-2	B	B	A	2			B	C	B	A*
Sydsport	C			2	C	1	3	A	B	B	1	1	1	C	A	B	A*
Touchdown	B			1						A*	1	1	1				
Common						3	1-2	C	C	C	1	3	1	C	B	B	C
Park	B	1	1	1	C	3	1-2	C	C	C	1	3	1	B	B	C	C
Windsor					B	3	1-2	C	C	B	1	2	3	B	B	A	B
FINE FESCUES		✓ = better high than low	Hel- minth	Dollar- spot				1½"	¾"	overall average							
Atlanta	A		2	2						A							
Banner	A									A							
Fortress										B							
Highlight	A	✓	2	3				B	A	A				B			
Jamestown	A		2	2				A	A	A				A			
Koket	B	✓						A	A	B							
Pennlawn	B		2	2				B	B	B/C				A			
Ruby	C	✓	3	2				C	C	C				C			
PERENNIAL RYEGRASSES																	
Citation										A							
Compas										C							
Derby										A							
Diplomat										A							
Game										C							
Manhattan	A									A							A
NK-100	C									C							C
NK-200	C									B							
Pelo										B							B
Pennfine	A									A							
Yorktown										A							
Common																	