ORNAMENTAL SWITCH GRASS, (*Panicum virgatum*)
Rust; *Puccinia emaculata*

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Evaluation of ornamental switch grass susceptibility to rust, 2003.

Three clones (replicates) each of twelve ornamental cultivars plus the species of *P. virgatum*, the perennial warm season grass, were planted at The Morton Arboretum in 2001 at a spacing of 4 x 4 feet (12.2 dm x 12.2 dm) using a completely randomized design. The plot was exposed to ambient conditions for two years with addition of overhead irrigated sporadically during the growing seasons. Plants were evaluated monthly in 2003 from August to October for the presence of rust (uredia and later, telia). A minimum of five culms were collected from each clone and examined microscopically to assess teliospore development and to confirm the identity of the pathogen. Plants were rated for aesthetic value in October in which leaf (culm) color, plant form and inflorescence appeal were considered.

The pathogen was identified as *Puccinia emaculata* based on morphological characteristics of the teliospores. This is one of three rust fungi that have been identified on forage *P. virgatum* (Crop. Sci. 43: 755-759). Significant differences in disease severity were found among cultivars ($P < 0.0001$) on the Aug and Sep rating dates. Five cultivars as well as the species exhibited good resistance to the disease with less than 25% of culms developing rust. Curiously, 'Dallas Blues', one of the most susceptible cultivars according to the Aug and Sep ratings, failed to develop telia and teliospores. This cultivar was also among those rated highest, according to aesthetics, in Oct underscoring the fact that rust does not necessarily compromise ornamental appeal. No ornamental cultivars of switchgrass have previously been evaluated for susceptibility to rust. Grasses are an increasingly popular component of ornamental landscapes.

Cultivar	Disease Severity Rating*			Aesthetic Rating**
	Aug	Sep	Oct	
Shenandoah……	0 a	0.67 a	++	2.0
Northwind……..	1.00 ab	1.00 a	++	1.0
P. virgatum……	0 a	1.00 a	++	2.0
Rehbraun…….	0 a	1.67 ab	++	2.0
Warrior……..	0 a	1.67 ab	++	1.0
Campfire……	0 a	2.00 ab	++	1.3
Heavy Metal……..	0.67 ab	3.67 bc	++	2.0
Cloud Nine…….	1.33 ab	4.67 c	+	1.0
Trail Blazer……	0.67 ab	4.67 c	++	4.0
Haense Herms……	0.67 ab	4.67 c	++	4.0
Dallas Blues……...	3.50 c	5.00 c	-	1.0
Prairie Sky…….	3.00 c	5.00 c	++	4.0
Blue Tower……	2.00 bc	5.00 c	++	1.7

*Whole plant disease severity: 0 = no rust observed; 1 = 0 - 25% of culms infected; 2 = 26 - 50 % of culms infected; 3 = 51 - 75 % of culms infected; 4 = 76 - 90% of culms infected; and 5 = > 90% of culms infected. Means in each column followed by the same letter are not significantly different according to Tukey Kramer's HSD mean separation test (P = 0.05). A minimum of five culms of each clone were examined microscopically for telia in October: - = none observed; + = some telia and teliospores present; ++ = many telia and teliospores present.

**Aesthetic rating: 1 = superior form and color; 2 = form loose, color fading; 3 = much of plant collapsed, dull color; 4 = complete loss of form and dull to necrotic color.