

Differential Sets

Uromyces appendiculatus (Ua) - Bean

Background - The first commonly accepted set of differential varieties for bean was defined by Stavely *et al.* (1983). In two subsequent papers Stavely (1984) and Stavely *et al.* (1989) defined race 38 to race 57 and race 58 to 70, respectively in relation to these differentials.

However, more recently the resistance genetics of several of the differentials has been described and reviewed (Kelly *et al.* 1996). This led to an overview of race – resistance gene interactions such as that published in Miklas *et al.* (2002) who showed the differentiation of the described genes and some other relevant differentials using a subset of 9 rust races selected for the purpose. Although all currently defined and described resistance genes are not included it provides a valuable overview of genes that have been in use over the last decades.

A complete and updated overview of rust resistance genes is given in table 1.6 of Liebenberg and Pretorius (2010).

Table 1 - Differential reaction of specific resistance genes across a subset of bean rust (*Uromyces appendiculatus*) races (adapted from Miklas *et al.* 2002)

Resistance gene (source)	Race (ISF Code)								
	41 (Ua: 41)	44 (Ua: 44)	47 (Ua: 47)	49 (Ua: 49)	53 (Ua: 53)	54 (Ua: 54)	67 (Ua: 67)	73 (Ua: 73)	108 (Ua: 108)
Middle American origin									
<i>Ur-5</i> (Mexico 309)	+	+	+	-	+	+	-	-	-
<i>Ur-Dorado-108</i>	-	-	-	-	-	-	-	+	+
<i>Ur-Ouro Negro</i>	+	+	+	+	+	ND	+	+	-
<i>Ur-3</i> (Aurora)	+	-	-	-	+	+	-	-	+
<i>Ur-3</i> (NEP-2)	+	+	-	-	+	+	-	-	+
<i>Ur-Dorado-53</i>	-	-	-	-	+	+	-	-	-
<i>Ur-11</i> (PI 181996)	+	+	+	+	+	+	+	+	-
<i>Ur-BAC 6</i>	+	+	+	+	-	-	+	+	-
<i>Ur-7</i> (GN 1140)	+	+	+	+	-	ND	+	-	+
Andean origin									
<i>Ur-4</i> (Early Gallatin)	-	+	-	+	-	+	-	+	+
<i>Ur-6</i> (G.G.W)	+	+	+	-	-	-	-	+	-
<i>Ur-6</i> (Olathe)	+	+	+	+	-	-	+	+	+
<i>Ur-US#3</i> (tent. <i>Ur-8</i>)	-	-	-	-	-	-	-	-	-

+ Resistant reactions, include both necrotic HR reactions and small sporulating pustules

- Susceptible reactions

ND no data

References

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