

CHARACTERIZATION OF *PSEUDOCERCOSPORA GRISEOLA* ISOLATES COLLECTED IN THE STATE OF MINAS GERAIS, BRAZIL

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INTRODUCTION

The common bean is a host to various pathogens. Angular leaf spot (ALS), incited by the fungus *Pseudocercospora griseola* (Sacc.) Crous & U. Braun, is a geographically diverse disease and during recent years has increased in frequency and severity in Latin America (SARTORATO, 2006). Nearly all cultivars planted in Brazil are susceptible to ALS. Therefore, it is important to survey the pathogenic variability in each growing region to aid the selection of effective resistance sources. The objectives of this work were to collect, isolate and characterize the *Ps. griseola* fungus in three of the most important bean growing regions of the state of Minas Gerais, Brazil.

MATERIALS AND METHODS

Bean leaves with ALS symptoms were collected in the following regions of Minas Gerais state: Triângulo Mineiro, Northwest region and Zona da Mata. To obtain monosporic cultures, the methodology described by CORREA-VICTORIA (1987) and PYINDJI (1991) was used. A suspension of conidia and mycelia fragments was prepared for each isolate. The suspension was filtered through gauze, the spore concentration was determined with the aid of a hemocytometer and adjusted to 2.0×10^4 conidia/mL.

To classify the isolates into races 12 plants each of the ALS differential series (PASTOR-CORRALES & JARA, 1995) at the V3 stage were inoculated. The plants were maintained in mist chambers at 24 ± 2 °C, under a photoperiod of 12 h and relative humidity greater than 95%. After 48 h under these conditions, the plants were transferred to the greenhouse where they remained until symptom evaluation. The severity of the disease was visually verified at 15, 18 and 21 days after inoculation using a nine degree severity scale proposed by PASTOR-CORRALES & JARA (1995). Plants with degrees lower than 3 were considered resistant and those with degrees greater than 4, susceptible.

RESULTS AND DISCUSSION

Bean leaves presenting symptoms of ALS were collected from 33 sites in three growing regions of Minas Gerais state. A total of 78 monosporic isolates of *Ps. griseola* were obtained. So far, 17 isolates have been characterized and classified into 12 distinct races (Table 1), demonstrating the large pathogenic variability of this pathogen. Race 63.63 was the most frequently found, corresponding to four of the 17 isolates characterized. The fact that several isolates were classified as

race 63.63, i. e., they are compatible with all 12 cultivars of the ALS differential series, suggests that this set of cultivars must be reviewed. In the works developed by SARTORATO (2002), SARTORATO (2004) and VITAL (2006), the cultivars Don Timóteo, G11796 and Bolón Bayo showed to be susceptible to approximately 100% of *Ps. griseola* isolates tested. According to these authors these cultivars do not interfere in the discrimination of *Ps. griseola* races, which was also confirmed in this work (Table 1).

Characterization of the other 61 isolates obtained is underway as an effort of the Common Bean Breeding Program of BIOAGRO/UFV to survey the main bean growing regions of the state of Minas Gerais.

Table 1. Characterization of *Ps. griseola* isolates collected in three common bean growing regions of Minas Gerais state, Brazil

Isolate	Virulence phenotype of the Varieties ¹												Race	Collection Region	
	A	B	C	D	E	F	G	H	I	J	K	L			
A ₁ 13	a	b	c	d			g	h	i					15.7	Triângulo Mineiro
A ₂ 4	a	b	c	d	e	f	g	h	i					63.7	Triângulo Mineiro
B ₁ 46	a	b	c	d	e	f	g	h	i	j	k	l		63.63	Northwest region
B ₃ 8	a	b	c	d	e	f	g	h	i	j			l	63.47	Northwest region
B ₄ 4	a	b	c	d		f	g	h	i				l	47.39	Northwest region
B ₄ 6	a	b	c	d	e					l				31.4	Northwest region
B ₇ 50	a	b	c	d	e	f	g	h	i	j	k	l		63.63	Northwest region
C ₁ 17	a	b					g	h	i				K	3.23	Northwest region
C ₁ 28	a	b	c	d	e	f		h	i					63.6	Northwest region
C ₂ 10	a	b	c		e		g	h	i				K	23.23	Northwest region
CM ₁ 2	a	b	c	d	e	f	g	h	i	j	k	l		63.63	Zona da Mata
CM ₃ 11	a	b	c	d	e	f	g	h	i	j	k			63.31	Zona da Mata
Coimbra 20	a	b	c	d	e	f	g	h	i					63.7	Zona da Mata
Coimbra 21	a	b	c	d	e		g	h	i					31.7	Zona da Mata
SM 32	a	b	c	d	e	f	g	h	i				k	63.23	Zona da Mata
Viçosa 3	a	b	c	d	e	f	g	h	i				k	63.23	Zona da Mata
Viçosa 7	a	b	c	d	e	f	g	h	i	j	k	l		63.63	Zona da Mata

1/ Differential cultivars: A= Don Timóteo, B= G 11796, C= Bolón Bayo, D= Montcalm, E= Amendoim, F= G 5686, G= PAN 72, H= G 2858, I= Flor de Mayo, J= México 54, K= BAT 332 and L= Cornell 49-242. The lower-case letters indicate susceptibility of the variety.

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