Re-characterization of *Colletotrichum lindemuthianum* races

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Pathogenic variability within *Colletotrichum lindemuthianum* (Sacc. & Magnus) Lamb.-Scrib. have been characterized based on phenotypic reaction on traditional common bean differential cultivars (1,2,3,4,5,6,8), or on local cultivars used as differentials (9). A standardized binary nomenclature system and set of twelve differential cultivars have been developed (7). The major objectives of the standardized system were to generate unbiased description of *C. lindemuthianum* populations, and to facilitate the international exchange of information.

Using this methodology, 15 races previously characterized on traditional differential sets and named with Greek letters or local codes (traditional nomenclature), were re-characterized (Table 1). A binary value was assigned to each race. This information should be useful to define races traditionally characterized on differentials different from the standard set. Race Beta (race 130) was previously characterized as race 3, whereas race Epsilon Kenya (race 19) and race Epsilon (race 65) both were previously assigned race 1. Race Kappa (race 31) had been shown to overcome Mexico 222 cultivar, although only the first five differentials should be susceptible. One possible cause of error in classifying races might be the lack of genetic purity within the differential cultivars. The misclassification of races has resulted in a false assessment of the variability present in *C. lindemuthianum* and has generated bias in the research results reported in certain countries.

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Table 1. Races of *Colletotrichum lindemuthianum* characterized based on an international set of differentials and named based on the binary nomenclature system.

Race designation		Differential cultivars[1]											
Binary	Traditional	1	2	3	4	5	6	7	8	9	10	11	12
17	Alpha	S	R	R	R	S	R	R	R	R	R	R	R
19	Epsilon Kenya	S	S	R	R	S	R	R	R	R	R	R	R
23	Delta	S	S	S	R	S	R	R	R	R	R	R	R
31	Kappa	S	S	S	S	S	R	R	R	R	R	R	R
55	Lambda	S	S	S	R	S	S	R	R	R	R	R	R
65	Epsilon	S	R	R	R	R	R	S	R	R	R	R	R
81	Eta	S	R	R	R	S	R	S	R	R	R	R	R
87	Mu	S	S	S	R	S	R	S	R	R	R	R	R
89	Alpha Brazil	S	R	R	S	S	R	S	R	R	R	R	R
99	Teta	S	S	R	R	R	S	S	R	R	R	R	R
102	Gamma	R	S	S	R	R	S	S	R	R	R	R	R
130	Beta	R	S	R	R	R	R	R	S	R	R	R	R
141	C236	S	R	S	S	R	R	R	S	R	R	R	R
337	Mex II	S	R	R	R	S	R	S	R	S	R	R	R
453	Zeta	S	R	S	R	R	R	S	S	S	R	R	R

[1] 1. Michelite (1), 2. Michigan Dark Red Kidney (2), 3. Perry Marrow (4), 4. Cornell 49-242 (8), 5. Widusa (16), 6. Kaboon (32), 7. Mexique 222 (64), 8. PI 207262 (128), 9. TO (256), 10. TU (512), 11. AB136 (1024), 12. G2333 (2048). The numbers between parenthesis represent the binary value for each differential. The binary value for each race is obtained by summing the value of cultivars with susceptible (S) reaction.