

## \*\* SOUTH AMERICA \*\*

## \* Brazil \*

Health, Germination and Vigor of Sorghum Seeds

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Seed samples from six cultivars of sorghum (Sorghum bicolor (L.) Moench), grown during the rainy season in Iraucuba, Ceará, Brazil, were assayed for seed-associated fungi. Two standard methods, blotter and agar plate, were employed in the present study. The fungi isolated from the seed samples of the six cultivars and their percent occurrence are presented in Tables 1 and 2. Percent germination, germination index and vigor revealed that the seed samples of cultivars EA-171, EA-121 and EA-180 were of low quality (Table 3). Aspergillus spp, Penicillium spp, Curvularia spp, Gleocladium sp, Cylindrocarpon sp and Phoma sp occurred in all of the tested seed samples. Percentages of the seed-associated fungi were observed to be higher in the low quality seed samples of cultivars EA-171, EA-121 and EA-180 in comparison with those of cultivars EA-201, EA-40 and EA-2160.

Table 1. Percentage fungi identified from seed samples of sorghum cultivars grown in Iraucuba, Ceará (on blotter).

Fungi	Percentage of fungi recorded from sorghum cultivars <sup>1</sup>					
	EA-201	EA-40	EA-2160	EA-171	EA-121	EA-180
<u>Aspergillus</u> spp	14.0	16.5	15.0	23.0	29.5	32.0
<u>Penicillium</u> spp	7.0	8.0	14.5	8.5	8.0	11.0
<u>Curvularia</u> spp	2.0	3.0	8.5	14.0	12.5	23.5
<u>Gleocladium</u> sp	22.0	26.5	26.0	32.0	49.5	54.0
<u>Chaetomium</u> sp	0.0	1.5	1.0	1.0	1.0	2.0
<u>Trichoderma</u> sp	0.0	0.0	0.0	7.0	0.0	0.0
<u>Drechslera</u> sp	0.0	0.0	0.0	0.0	2.0	0.0

<sup>1</sup>Data based on 200 seeds.

Table 2. Percentage recovery of fungi from seed samples of sorghum cultivars grown in Iraucuba, Ceará (on potato dextrose agar).

Fungi	Percentage recovery of fungi from sorghum cultivars <sup>1</sup>					
	EA-201	EA-40	EA-2160	EA-171	EA-121	EA-180
<u>Curvularia</u> spp	9.5	12.0	13.0	20.5	20.0	22.5
<u>Cylindrocarpon</u> sp	9.0	11.5	12.0	17.0	38.5	64.5
<u>Phoma</u> sp	11.0	9.0	10.0	18.0	24.5	15.0
<u>Chaetophoma</u> sp	0.0	0.0	13.0	0.0	0.0	7.5
<u>Gleocladium</u> sp	3.0	3.5	4.5	6.0	7.5	8.5
<u>Trichoderma</u> sp	0.0	0.0	0.0	4.0	0.0	0.0
<u>Penicillium</u> sp	0.0	0.0	0.0	3.0	0.0	0.0

<sup>1</sup>Data based on 200 seeds.Table 3. Relation between percent germination, germination index and vigor in sorghum seeds.<sup>1</sup>

Cultivar	Germination %	Germination index <sup>2</sup>	Vigor %
EA-201	83.0	212	30.0
EA-40	83.0	193	29.5
EA-2160	73.0	180	20.7
EA-171	63.0	137	14.5
EA-121	58.0	154	8.5
EA-180	48.0	106	14.2

<sup>1</sup>Data based on 400 seeds.<sup>2</sup>Germination index corresponds to the speed of germination in the standard germination test.