

# Pathogenic and molecular variability among *Brassica* isolates of *Alternaria brassicae* collected from different agro-climatic regions of India

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## ABSTRACT

The *Alternaria* blight is one of the most destructive fungal disease of Indian mustard causes severe damage to the crop. Ten isolates of *A. brassicae* were collected from various agro-climatic location of India viz., Uttar Pradesh (Ab<sub>1</sub>), Madhya Pradesh (Ab<sub>2</sub>), Uttarakhand (Ab<sub>3</sub>), Bihar (Ab<sub>4</sub>), Jharkhand (Ab<sub>5</sub>), West Bengal (Ab<sub>6</sub>), Haryana (Ab<sub>7</sub>), Rajasthan (Ab<sub>8</sub>), Chhattisgarh (Ab<sub>9</sub>) and Gujarat (Ab<sub>10</sub>) and characterized for pathogenic and molecular variations. All the isolates showed high level of variability. The incubation period of the isolates was recorded on *B. juncea* 3 to 4 days, *B. carinata* 6.17 to 6.83 days, *B. napus* 5.17 to 6.00 days, *B. nigra* 4.17 to 5.17 days and in *B. campestris* it was ranged from 3.17 to 4.00 days. The results revealed that the maximum PDI was noted on *Brassica juncea* followed by *B. campestris* var yellow sarson, *B. nigra*, *B. napus* and *B. carinata*. Based on PDI ten isolates could be classified into three groups in which group one consist of isolates Ab<sub>3</sub>, Ab<sub>6</sub>, Ab<sub>7</sub> and Ab<sub>5</sub>. Isolates Ab<sub>8</sub>, Ab<sub>2</sub> and Ab<sub>4</sub> fall in second group; while group three include isolates Ab<sub>1</sub>, Ab<sub>9</sub> and Ab<sub>10</sub>. The dendrogram analysis identified two major clusters with 82 per cent similarity. One cluster (group I) comprised of 3 isolates (Ab<sub>1</sub>, Ab<sub>10</sub> and Ab<sub>2</sub>). Whereas, another cluster (group II) comprised of Ab<sub>3</sub>, Ab<sub>6</sub>, Ab<sub>7</sub>, Ab<sub>5</sub>, Ab<sub>4</sub>, Ab<sub>8</sub> and Ab<sub>9</sub> at 86 per cent similarity. The three isolates (Ab<sub>3</sub>, Ab<sub>6</sub> and Ab<sub>7</sub>) of group II showed 100 per cent similarity based on molecular basis.

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