

## Anthracnose of Statice Caused by *Glomerella cingulata* (Stonem.) Spaulding & Schrenk in Chonbuk Province

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### *Glomerella cingulata* (Stonem.) Spauld. & Schrenk에 의한 스타티스 탄저병

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**ABSTRACT:** Anthracnose of statice (*Limonium* sp. var. Misty Blue and *L. sinuatum* Mill. cv. Early Blue) occurred up to 20% in vinyl-houses at Buan, Imsil and Namwon from July to November, 1993. All isolates from the anthracnose symptoms were identified as *Glomerella cingulata* (Stonem.) Spauld. & Schrenk and its anamorph was *Colletotrichum gloeosporioides* (Penz.) Sacc. Pathogenicity of the isolates was ascertained on the statice host by artificial inoculation. The symptoms on leaves appeared as circular brown spots in early stage and developed to zonate spots. The spots aggregated and diseased leaves were blighted. The symptom also developed on the stems of severely infected plants and the infected branches were blighted. A lots of acervuli developed on the lesions of stems. Acervuli on necrotic lesions were setose, rounded and elongated. Setae variable in length, 1~4 septate, brown, slightly swollen at the base and tapered to the apex on which conidia were occasionally borned. Statice was revealed as the new host of *G. cingulata*.

**Key words:** Statice, Anthracnose, *Glomerella cingulata*.

Anthracnose occurs on many kinds of crops (1~7, 11~13) and ornamental plants (8~10). Farming area of statice has been increased during last ten years because of the relatively higher income than other crops in Korea. Almost all farms cultivate statice in vinyl-houses. High temperature and humidity in the vinyl-house are favorable for the disease occurrence. Anthracnose of statice occurred severely up to 20% on Buan, Imsil and Namwon province from July to November, 1993. The symptoms on leaves appeared as circular brown spots in early stage and developed to zonate spots (Fig. 1). The spots aggregated and the diseased leaves were died. The symptom also developed on stems of severely infected plants and the infected branches were bli-

ghted. A lots of acervuli developed on the lesions of stems. Acervuli on necrotic lesions were setose, rounded and elongated. Setae variable in length, 1~4 septate, brown, slightly swollen at the base and tapered to the apex on which conidia were occasionally borned.

All the isolates from the anthracnose symptoms were identified as *Glomerella cingulata* and its anamorph was *Colletotrichum gloeosporioides* according to the classification of von Arx (1). Colonies on PDA greyish white to dark grey. Perithecia occasionally formed in old cultures, globose to obpyriform and dark brown to dark. Diameter of perithecia was 70~335  $\mu$ m. Appressoria formed on mycelium in old cultures and borne on hyaline. Size of appressoria was 6~17 $\times$ 4~14  $\mu$ m. Conidia more variable in size and shape than on the host, formed

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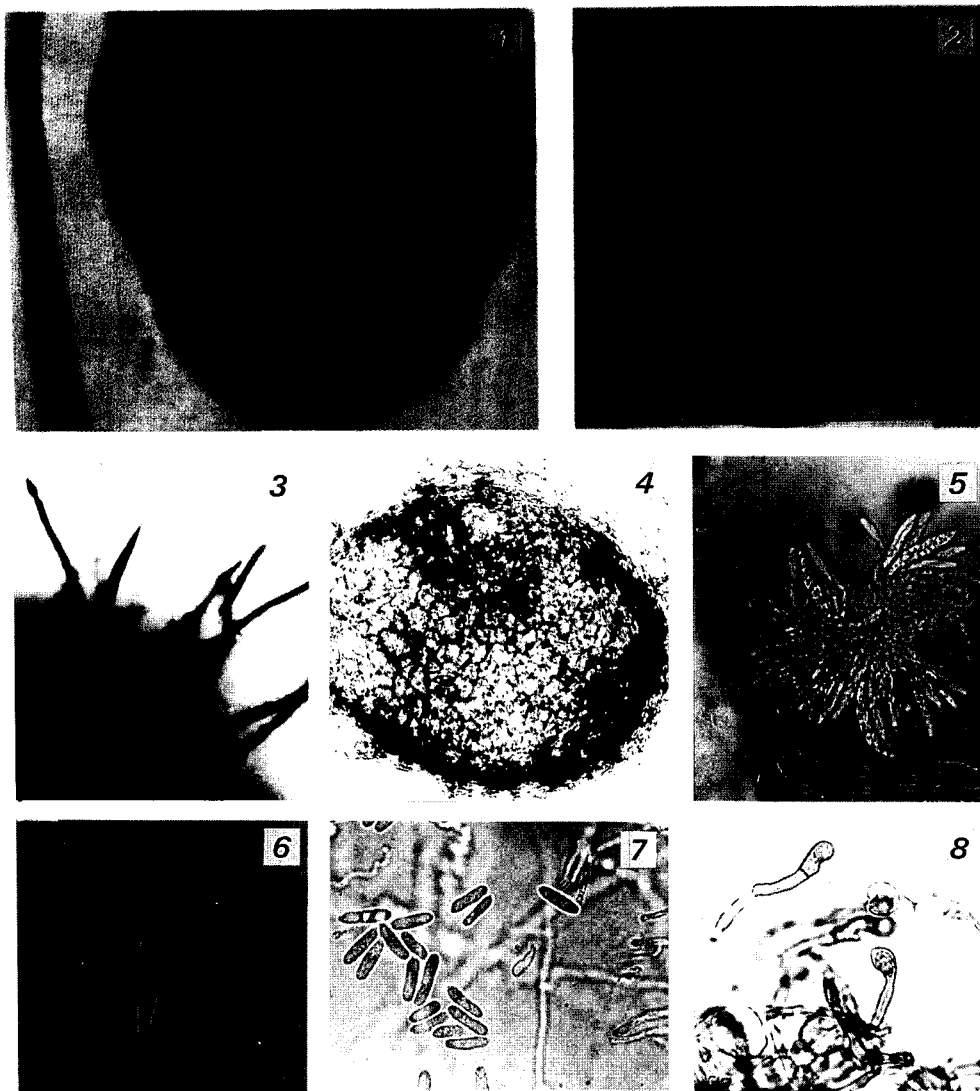


Fig. 1~8. The Symptom of anthracnose on statice caused by *Glomerella cingulata* and fungal morphology of the pathogen. *G. cingulata* on statice. Lesions on stem and leaf (1), colony on Potato Dextrose Agar (2), setae (3), perithecium (4), asci (5), ascospores (6), conidia (7) and appressoria (8) formed on PDA media.

on solitary phialides on mycelium, usually pale salmon in mass. Conidia were elliptical, round at the ends (Fig. 7) and measured  $12.5\sim 18.6\times 4.2\sim 5.8\ \mu\text{m}$  (average  $16.3\times 5.0\ \mu\text{m}$ ). Size of the asci (Fig. 5) was  $70.0\sim 100.0\times 8.5\sim 9.8\ \mu\text{m}$  (average  $89.2\times 9.2\ \mu\text{m}$ ) and there were eight ascospores in an ascus. Ascospores were slightly curved at the center, and measured  $12.0\sim 18.5\times 4.5\sim 5.7\ \mu\text{m}$  (average  $16.3\times 4.9\ \mu\text{m}$ ) (Fig. 6).

Three isolates of *G. cingulata* isolated from anth-

racnose lesions on statice leaves and stems were used for pathogenicity test. For the preparation of spore suspension, the isolates were cultured on potato-dextrose agar (PDA) at  $27\sim 28^\circ\text{C}$  under continuous fluorescent light for 10 days and the cultures were flooded and mixed with sterilized distilled water. Twenty ml spore suspension (adjusted to  $2\sim 3\times 10^6$  conidia per ml) was sprayed onto the statice plants grown in the pots with sterilized soil for 30 days after transplanting. Inoculated plants were pla-

ced in a dew chamber with 100% relative humidity at 26~28°C for 48 hrs and then placed to the greenhouse. Pathogenicity tests were performed in three replicates. Symptoms were developed on every inoculated static plants from 20 days to 50 days after inoculating.

Lee *et al.* (10) and Kim *et al.* (8,9) reported that *G. cingulata* caused anthracnose on many kinds of ornamental plants, but the anthracnose of static was not reported. This is the first report on static anthracnose in Korea.

## 요 약

1993년 7월부터 11월 사이에 전북 남원, 부안, 임실 등지의 스타티스 재배 비닐하우스 포장에서 탄저병이 최고 20%까지 발생하였다. 감염초기의 병징은 주로 잎에 갈색 원형반점으로 나타나고, 점차 진행됨에 따라 운문상의 병반이 확대융합되어 잎이 고사하게 된다. 병이 진전되면 줄기에도 긴 타원형의 병반이 나타나 감염 위쪽의 줄기는 모두 고사하게 된다. 잎보다는 줄기에 나타난 병반위에 *Acervuli*가 많이 형성되었고, 분리된 20개 균주 모두 *Glomerella cingulata* (Stonam) Spaulding & Schrenk로 동정되었다.

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