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Risks for infections of Brassica oleracea seed production crops, grown in polytunnels under organic and conventional conditions, with *Xanthomonas campestris* pv. *campestris*

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Xanthomonas campestris pv. *campestris* (Xcc) is a seed-borne bacterial pathogen causing black rot in Brassica species. The risks for plant and seed infections was studied in seed production crops of cauliflower (*Brassica oleracea*). Plants were grown under organic (Voorst, East of the Netherlands) or conventional conditions (Rilland, South-West of the Netherlands) in polytunnels. Plants were spray-inoculated just before cabbage head formation using two Xcc strains with distinct BOX-PCR patterns. Plants inoculated with Xcc 3076 were located on the left and with Xcc 3078 on the right side of the polytunnel, whereas non-inoculated plants were located in the centre. Per treatment ca. 100 plants were used. After seed maturation, peduncles and warm water treated seeds of individual plants were analysed by dilution plating on a semi-selective medium. A selection of Xcc-typical colonies were characterized with BOX-PCR.

Inoculation of cauliflower plants grown under organic conditions with Xcc 3076 resulted in high incidences of black rot and a high incidence of seed infections compared to plants grown under conventional conditions. The risks for seed infections seems to be Xcc strain dependent as relatively few seed infections were found with Xcc 3078 inoculated plants. In contrast to the conventional crop insects were highly prevalent in the organic crop. Results suggest that transmission of Xcc by (pollinating) insects to open flowers were at least partially responsible for seed infection of non-inoculated plants, as the peduncles of these plants were negative. In most non-inoculated plants that became infected with Xcc, the pathogen was detected in peduncles only. The distribution of the pathogen in these plants indicates that insects were also responsible for transmission of Xcc to leaves and peduncles.