ACADEMIC INN INTERNATIONAL

ISSN NO : 2523-1189

Journal of AGRICULTURAL AND RURAL RESEARCH

open access

EFFECTS OF *PSEUDOMONAS SYRINGAE* AND *XANTHOMONAS CUCURBITAE* ON SEED GERMINATION OF CUCURBITS

Md. Estiak Khan Chowdhury[1,2], Md. Enamul Haque[3], Fahmida Begum Mina[3], Sumon Karmakar[3], Mutasim Billah[3], Meherun Nesa[4], Biswanath Sikdar[3] and Md. Faruk Hasan[4,*]

To cite the article: *Md. Estiak Khan Chowdhury, Md. Enamul Haque, Fahmida Begum Mina, Sumon Karmakar, Mutasim Billah, Meherun Nesa, Biswanath Sikdar and Md. Faruk Hasan (2024), EFFECTS OF PSEUDOMONAS SYRINGAE AND XANTHOMONAS CUCURBITAE ON SEED GERMINATION OF CUCURBITS, Journal of Agricultural and Rural Research*, 7(2): 52-66.

Link to this article: http://aiipub.com/journals/jarr-240907-10082/

Article QR

Journal QR

EFFECTS OF *PSEUDOMONAS SYRINGAE* AND *XANTHOMONAS CUCURBITAE* ON SEED GERMINATION OF CUCURBITS

Md. Estiak Khan Chowdhury[1,2], Md. Enamul Haque[3], Fahmida Begum Mina[3], Sumon Karmakar[3], Mutasim Billah[3], Meherun Nesa[4], Biswanath Sikdar[3] and Md. Faruk Hasan[4,*]

1. Institute of Veterinary Pathology, Justus Liebig University, FB 10-Veterinary Medicine Frankfurter Str. 96, 35392, Giessen, Germany.
2. Department of Genetic Engineering and Biotechnology, University of Rajshahi. Rajshahi, P.O. Box 6205, Bangladesh.
3. Department of Biotechnology and Genetic Engineering, Bangabandhu Sheikh Mujibur Rahman Science and Technology University, Gopalganj, P.O. Box 8100, Dhaka, Bangladesh.
4. Department of Zoology, University of Rajshahi, Rajshahi, P.O. Box 6205, Bangladesh.
5. Department of Microbiology, University of Rajshahi. Rajshahi-6205, Bangladesh.
***Corresponding author e-mail: faruk_geb@ru.ac.bd**

ARTICLE INFO
Article Type: Research
Received: 6, Sep. 2024.
Accepted: 10, Sep. 2024.
Published: 17, Sep. 2024.

Keywords:
Cucurbits, seed germination, bacteria inoculation, top-of-paper.

ABSTRACT
Pseudomonas syringae and *Xanthomonas cucurbitae* affect the leaves, stems, and fruits of cucurbit plants contributing to a widespread bacterial disease of cucurbits. The present study was conducted to evaluate the germination rate of the seeds of five species of cucurbit, *viz.* bitter gourd, ridge gourd, bottle gourd, cucumber, and pumpkin, by inoculating bacteria *P. syringae* and *X. cucurbitae* at the seedling stage of development. The germination test was carried out by using the 'Top-of-paper' method. Bitter gourd seeds showed an 80% germination rate in control, but seeds inoculated with *P. syringae* and *X. cucurbitae* showed a 20% germination rate after 90 hours of incubation. A similar delay resulted for ridge gourd seeds inoculated with *P. syringae* and *X. cucurbitae* showed highest 25% and 41.67% germination, respectively. Bottle gourd seeds inoculated with *P. syringae* and *X. cucurbitae* showed a maximum of 63.64% and 72.73% germination respectively, after 120 hours. After 60 hours of incubation, cucumber seeds inoculated with *P. syringae* and *X. cucurbitae* showed 50% and 70% germination, respectively. However, after 90 hours of incubation, cucumber seeds inoculated with isolate *P. syringae* and *X. cucurbitae* showed the highest of 100% germination. Similarly, pumpkin seeds inoculated with *P. syringae* and *X. cucurbitae* showed a maximum of 70% and 80% germination after 50 hours of incubation. The experiment revealed that inoculation of *Pseudomonas syringae* and *Xanthomonas cucurbitae* at the seedling stage cucurbits have impaired seed germination significant delay in seed vigor over control.