

Blight Scissor



PROLINE
Organic Technologies Pvt. Ltd.



*Remedy on
Bacterial
Blight of*
POMEGRANATE

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Blight Scissor

The bacterial blight caused by *Xanthomonas axonopodis* pv. *punicae* (Xap) is a major plant pathogen, that causes a severe outbreak in the cultivation of pomegranates (*Punica granatum* L.) all over the world. *Xanthomonas axonopodis* pv. *punicae* is a gram negative, rod shaped bacterium that measures 0.4 to 0.75×1.0 to $3.0 \mu\text{m}$ with single polar flagellum.

The bacterium enters and infects different parts of plant through natural openings like stomata, lenticells and mainly wounds during pruning. Bacterial blight symptoms on Pomegranate appear after 3 to 4 days of challenge infection under favourable conditions (30°C to 35°C , 60–70% relative humidity).

The pathogenic factors of *Xanthomonas* include exopolysaccharides and biofilms. These exopolysaccharides is made up of different sugars and protein make it hard to kill bacteria.

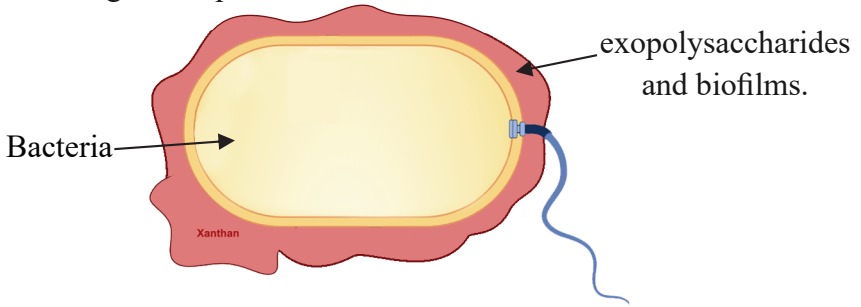


Fig. 1 : *Xanthomonas axonopodis* pv. *punicae* (Xap)

Exopolysaccharides (EPS) are extracellular macromolecules excreted as tightly bound capsule or loosely attached slime layer in microorganisms. They play most prominent role against desiccation, phagocytosis, cell recognition, phage attack, antibiotics or toxic compounds and osmotic stress.

Control of *Xanthomonas axonopodis* pv. *Punicae* Plant secondary metabolites such as phenols, flavonoid, and essential oils play major role in plant defence mechanism.

Proline Organic Technologies Pvt. Ltd. have advanced research formula for bacterial blight. Proline Organic Technologies Pvt. Ltd. after 10 years of research, developed advance plant extract based formula containing plant polyphenols and flavonoids with helps to control bacterial blight in effective way viz **Blight Scissor** *Stape 1* and *Stape 2*.



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Stape 1

Use of Blight Scissor Stage 1

1. **Blight Scissor Stage 1** Increases phenolic compounds in plant.
2. Thereby increases plant immunity towards bacterial blight.
3. **Blight Scissor Stage 1** Reduces reactive oxygen spp. (ROS) response.
4. **Blight Scissor Stage 1** Denatures exopolyaccharides of *Xanthomonas axonopodis* pv. *punicae*

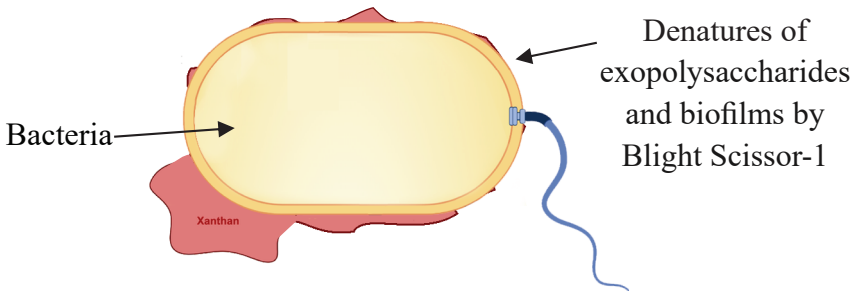


Fig. 2 : *Xanthomonas axonopodis* pv. *punicae* (Xap)



Blight Scissor

Stape 2

Use of Blight Scissor Stage 2

Note : Compulsory Spray Stage No. 2 solution after 48 hrs. of stage 1 Spray.

1. Plant components in **Blight Scissor Stage 2** acts on bacteria rather than exopolysaccharides.
2. **Blight Scissor Stage 2** Controls stomatal opening.
3. Thereby increases plant immune response
4. **Blight Scissor Stage 2** Controls biotic and abiotic stress.

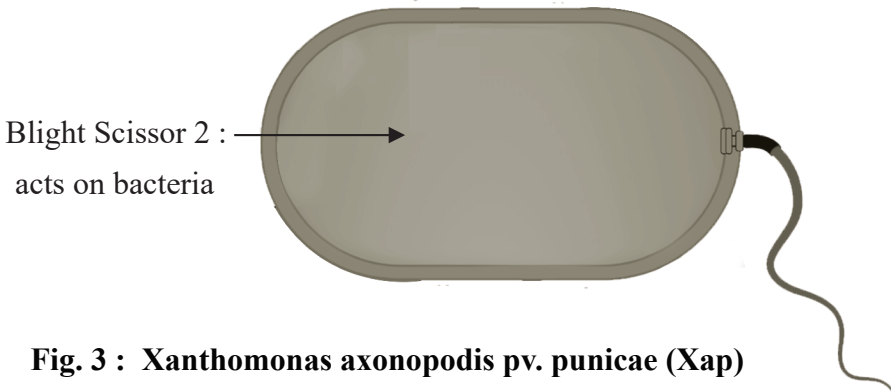


Fig. 3 : Xanthomonas axonopodis pv. punicae (Xap)

Recommendation for pomegranate

- 1) Spray Blight Scissor Stage 1 and 2 every 15 days interval until fruit colouration Stage.
- 2) Compulsory apply Blight Scissor 2 after 48 hours of Blight Scissor 1 Application every time.
- 3) Blight Scissor Stage 2 can be mixed with streptomycin /tetracycline/ blue copper / Kocide with recommended dose.