Oxalate Test Protocol

Kolkman, J.M., and J.D. Kelly. 2000. An indirect test using oxalate to determine physiological resistance to white mold in common bean. Crop Sci. 40:281–285.

In the greenhouse, plant 3 pots per line with 9 seeds per pot 20 days before you want to evaluate

In the evening before evaluation:

Mix 11 L of 20 mM oxalic acid solution (pH=4) per container being used

- 2.522 g oxalic acid / L distilled water
- Use NaOH pellets to adjust the pH

Mix 11 L distilled water (pH=4) per container of control

- Use HCl to adjust pH

Cut 20 day old seedlings at the base of the steam

- Four plants per line tested (to be put in oxalic acid solution)
- Two plants per line control (to be put in water solution)

Into a Rubbermaid tub, pour the 11 L of oxalic acid solution, and into a separate tub the 11 L distilled water.

- Place foam stopper around the steam
- Place into hole in foam board
- Put lid on container

Cover container with black garbage bag overnight

Incubate for 12-15 hours

In the morning:

Rate for wilting symptoms

1 – No symptoms
2 – 1 leaf wilting (2 unifoliate or three trifoliate leaves = one leaf
3 – 2 leaves wilting
4 – 3 leaves wilting
5 – Petioles collapsing
6 – Total plant collapse