PRACTICE ABSTRACT 4

Controlling Common blight in organic bean

Common blight produced by *Xanthomonas campestris pv. phaseoli* is very important disease of bean culture in many regions of the world. Damages are very high losses of production can be between 25 to 60%. The bacterium is transmitted year by year through the infected seeds. *Xanthomonas* can survive over 15 years in seed and infect the bean plant in vegetation period. Throughout the vegetation, bacteria can be spread by humans, farm implements, insects, wind, rains or hail. The disease occurs on all air organs.

On seed. If the infection occurred when the pods were young, the seed rot or wrinkled and shriveled. If the bacteria enter by way of the funiculus, only the hilum may be discolored. The seeds of the pods strongly attacked remain small, firm and yellow**.**

On seedlings. The first symptoms appear on the cotyledons, in the form of circular or irregular spots, slightly deep and brown. Later, on the leaves appear small translucent, wet, greenish spots, with the exudates visible only in humid weather. As the spots develop, the tissues around them dry, brown and have a yellow margin 2-5 mm wide.

On plants. Following infection in the field, small, water-soaked areas appear on the leaf, enlarge and become encircled by a comparatively narrow zone of lemon-yellow tissue. These lesions turn brown, the leaf rapidly becomes necrotic and defoliation may result. The stem surface often splits, releasing a yellow bacterial exudates (in halo blight infections, exudates are light cream or silver colored). On pods infections occur on any part as small, water-soaked spots which gradually enlarge and may be surrounded by a distinct zoning and narrow, reddish-brown of tissue. Infections may occur in the vascular elements of the sutures, causing water-soaking of the adjoining tissue. The infected tissue dries out and darkens, and droplets of yellow bacterial exudates may appear which, on drying, form a crust on the surface of older lesions of the pods.

Controlling Common blight in organic bean

- Use certified seed of bean from organic agriculture.
- Bean seeds solarization after harvesting by sun exposure 6 - 8 hours (non-chemical environmentally friendly method for controlling diseases, using solar power to increase the seeds temperature to levels at bacteria will be killed or greatly weakened them infections).
- Choose local varieties less susceptible to common bacterial diseases.
- Avoid overhead irrigation where possible.
- Avoid working in fields when plants are wet.
- Incorporate infested bean debris into the soil after harvest.
- Rotate beans with non-host crops such as small grains for at least three-four years.
- Good sanitation by remove diseased plants or weeds from the field.
- Applying 2 - 3 treatments with Bordeaux mixture.

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THE PROJECT

BRESOV
SHAPING THE FUTURE OF ORGANIC BREEDING & FARMING

BRESOV aims to tackle the nutritional challenges of a growing world population and changing climatic conditions by enhancing productivity of different vegetable crops in an organic and sustainable farming infrastructure. BRESOV works on broccoli, snap bean and tomato as those staple vegetable crops have significant roles in meeting our global food and nutritional security goal, and under organic conditions can contribute to storing carbon and introducing nitrogen improving organic soil quality.

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