

Rotation against purple seed stain in soya

Recognize the problem

Purple seed stain is fungal disease in soybean. The disease first causes dark purple points on the leaves which then turn into larger purple lesions. The leaf symptoms appear during the onset of seed set. Then, the affected leaves become dark brown and leathery. This gives a bronzing look to the leaves. The symptoms may be confused with leaf sunburn but in case of the disease, the change in leaf colour may extend to the stem and pods which sunburn does not cause. In severe infection, the top leaves fall off. The plant looks like it is mature, but in a plant infected by purple seed stain, the lower parts are green. Infected seeds get stained, turn purple and get a low price on the market.

Leaf colour change of soyabeans showing browning areas due to purple seed stain. (Photo by IOWA State University)



Background

Purple seed stain is a major problem in soyabeans throughout Zambia. This disease is seed-borne. The disease also survives on soyabean residues. Early infections do not show damage symptoms, but contribute to later infections in the season. The symptoms on the leaves are a result of the fungus and sunlight working together. Crop rotation of soyabeans is an effective way of controlling the disease. This is because the fungus does not live on other crops, except on legumes such as beans, cowpea and peas. Chemicals are less effective because the disease is inside the plant.

Soyabeans seed turned purple by the disease. (Photo by Daren Mueller, IOWA State University)



Management

- After a period of 3 years of continuous cropping with soyabeans, always rotate with non-legume crops like maize, sorghum, wheat and finger millet. This is independent from whether the disease is detected in your field or not.
- In case of heavy infection of soybeans by purple seed stain (1/4 to 1/2 of plants), do not wait 3 years to rotate the crop. Rotate immediately the next season.
- Never rotate soyabeans with legumes, such as beans and cowpeas as they can have the disease.
- During the rotation period with cereals, tillage should completely bury soyabean residues to around 25 cm of soil depth.
- Apply fertilizer to the required of amount for a particular rotated crop to avoid soil fertility problems in soyabeans the next season.
- Basal fertilizer such as D-compound should be applied in the rotated crop during planting as it is rich in potassium. This is because potassium is essential for the control of the disease in soyabeans the next season.

Scientific name(s) > *Cercospora kikuchii*

The recommendations in this factsheet are relevant to: Zambia



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