



TOBACCO RESEARCH BOARD

KUTSAGA

TELEPHONE: (263 - 4) 575 289
TELEFAX: (263 - 4) 575 288
TELEGRAMS: "TOBRES"
E-MAIL: tobres@kutsaga.co.zw
www.kutsaga.co.zw

P.O. BOX 1909
HARARE
ZIMBABWE

*Please address all
correspondence to
the General Manager*

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To: All Tobacco Growers

cc: Contractors

Merchants

Agrochemical

Companies

Dear Grower

RE: ANGULAR LEAF SPOT CONTROL IN TOBACCO FIELDS

Angular leaf spot, is a bacterial disease caused by the pathogen *Pseudomonas syringae* pv. *tabaci* and can be a serious problem in both flue and air cured tobacco especially in wet seasons. There are two strains of the same bacterium, *P. syringae* pv. *tabaci* Tox- and Tox+. The Tox+ strain produces tab-toxin and causes wildfire symptoms in which small lesions surrounded by a pale green halo appear on the leaves. In older lesions, the brown centre is surrounded by a yellow halo which in most cases disappears if conditions become humid. Large areas of dead tissue are often noticed on leaves when lesions merge. On the other hand, the Tox- strain does not produce a toxin and causes angular leaf spot. The disease has a

detrimental effect on the quality of the tobacco leaf. Symptoms of angular leaf spot appear as irregular, necrotic brown lesions, often angular in form (Fig 1 and 2) that enlarge and coalesce to form large areas of dead tissue (Figs 3).



Fig.1: Early stages of angular leaf spot, small irregular necrotic brown lesions



Fig.2: Mild irregular necrotic brown lesions



Fig.3: Severe irregular necrotic brown lesions coalescing to form large areas of dead tissue

Cool to warm wet weather favours the spread of the disease. In the past 5-10 years, angular leaf spot incidence has been low in most tobacco growing regions. However, in this current season (2016-17), there have been several reports of high angular leaf spot damage countrywide. This may be attributed to high moisture conditions currently prevailing in most tobacco growing areas. Furthermore, this disease is favoured by excessive fertility,

particularly with high nitrogen (N) and low potassium (K) fertilisation. The use of excessive amounts of lime, which interferes with K uptake, can also increase disease severity. Furthermore, hail storm damage injures tobacco leaves creating entry points for the bacteria which leads to the disease increasing in severity.

Management of angular leaf spot

For the management of angular leaf spot in tobacco fields, two foliar sprays of acibenzolar-S-methyl (Bion 50 WG), which is a plant immune booster, are recommended. The product is to be applied at 5-6 and 8-9 weeks after planting at the rate of 60 g product in 200 L of water per hectare. For maximum benefit, it is important to apply Bion preventatively on actively growing plants at these recommended times. However, in case of an outbreak of the disease, in the field a Bion spray on, already topped plants may assist in arresting the spread of the disease but will not necessarily cure already affected leaves.

For more information and assistance on angular leaf spot diagnosis and any other diseases, contact Kutsaga Research Station's Plant Health Services Division on telephone # (04) 575 289/94 or toll-free, 08004511 or Email: tobres@kutsaga.co.zw or visit Kutsaga Research Station.

Yours sincerely,

Mike Marunda



Plant Pathologist