



TOBACCO RESEARCH BOARD

KUTSAGA

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*Please address all
correspondence to
the General Manager*

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Dear Grower

RE: FERTILIZER LEACHING ADJUSTMENTS IN TOBACCO

The current wet spell being experienced in the country has seen some areas receiving amounts of rainfall exceeding 60 mm within 24 hours. On most crops, including tobacco, such excessive rains result in the leaching of nutrients, particularly nitrogen and potassium beyond the root zone. This results in pale and yellowed plants in the case of nitrogen and potassium firing when potassium is unavailable (see pictures below).



A1. Heavy N leaching in a tobacco crop **A2.** Moderate N leaching in a tobacco crop



A3. Healthy tobacco crop with no signs of N leaching



B1. Initial K deficiency symptoms



B2. Mild symptoms of K deficiency



B3. Progression of K deficiency

Where leaching symptoms such as yellowing of leaves throughout the entire plant have been observed, growers are advised to apply nitrogen in the form of ammonium nitrate, calcium nitrate or potassium nitrate as soon as possible. It is not possible to be precise about the amount of nitrogen to be applied due to the fact that the amount of leaching in soil depends on the soil texture, the amount of moisture in the soil, permeability of the soil, slope of the land, ridge orientation and the amount of nitrogen or potassium initially applied.

However, 75 kg of ammonium nitrate/ha (cup No. 5/plant) or 150 kg calcium nitrate/ha (cup No. 8/plant) should be sufficient. However, deep coarse-grained soils may require more. For December plantings as much as 300 kg/ha ammonium nitrate can be added in four applications of 75 kg/ha (cup No. 5/plant) at weekly intervals; or 600 kg/ha calcium nitrate in four applications of 150 kg/ha (cup No. 8/plant) at weekly intervals. Nevertheless, ammonium nitrate is more persistent in the soil than calcium nitrate which is more prone to leaching.

In the case of potassium, deficiency is more often directly related to weather/environmental conditions than the available K in the soil profile. Excessive soil moisture slows down the diffusion of K to the roots resulting in deficiency symptoms. In many cases, if soil moisture conditions can be improved by improving the drainage system, deficiencies are self-correcting without any additional K being applied. Additional applications of K fertilizer are only recommended in extreme cases when leaching has occurred and deficiency symptoms are severe. If there is a need to apply extra K, growers are advised to apply 100 kg/ha of sulphate of potash (Cup No. 5/plant). It is not advisable to apply muriate of potash (potassium

chloride) because it also supplies chlorine which reduces the quality of the cured leaf.

For more information, contact Kutsaga Research Station's Crop Productivity Services Division on telephone # (04) 575 289-94 or toll-free, 0800 4511 or Email: tobres@kutsaga.co.zw or visit Kutsaga Research Station on Airport ring Road, Harare.

Thank you

A handwritten signature in black ink, appearing to read "Dadirai Chinamo". The signature is written in a cursive style with a circular flourish at the beginning.

DADIRAI CHINAMO

Research Officer, Soil Chemistry, Crop Productivity Services Division