

**Title** Effects of harvesting stage and smoke ripening on the time to ripening, shelf life and quality of dessert banana

**Author** A.P. Maerere, R. Munubi and E.R. Mgembe

**Citation** Program and Abstracts, Banana 2008, Banana and plantain in Africa: Harnessing international partnerships to increase research impact, Leisure Lodge Resort, Mombasa, Kenya, 5-9 October 2008. 198 pages.

**Keyword** banana; smoke ripening

### **Abstract**

In the Morogoro district, Tanzania, “Grand Naine” (AAA group) locally known as “Mtwike” is the major dessert banana. Due to absence of ripening rooms, the banana is harvested at a maturity stage equivalent to the “full three quarters” and smoked in special pits on the day of harvest by middlemen traders, before the fruits are transported to urban markets two days later. This study was conducted in order to describe this traditional method of forcing banana ripening, to assess its efficacy and effects on shelf life and quality of banana destined for sale as dessert fruits. Results show that at similar stage of maturity at harvest, smoke ripened fruits did not differ significantly in terms of quality measured as pulp acidity, soluble solids and sugar contents from fruits treated with ethylene or ripened naturally. Major differences observed were that smoking induced rapid ripening, which occurred within two days, leading to development of “green” ripe fruits with relatively shorter shelf life of less than 8 days against that of up to 10 and 16 days for fruits treated with Ethephon and the naturally ripening fruits respectively. It is considered that the heat from the fire producing the smoke raises the temperature in the ripening pit causing the softening of the fruit pulp or high respiration rate hasten ripening, has no direct effect on the organoleptic quality, but shortens fruit shelf life. This traditional banana ripening method could be improved through designing of smoking techniques which avoid the development of high temperatures in the ripening pit, such as by facilitating ventilation in the pit, making small fire using material that produce a lot of smoke.