

## **Influence of potato cultivar and stage of maturity on oil content of French fries (chips) made from eight Kenyan potato cultivars**

Abong, G. O.; Okoth MW, M.W.; Karuri, E.G.; Kabira, J. N.; Mathooko, F. M.  
Date: 2009

### **Abstract**

French fries (chips) are increasingly becoming indispensable in menus of many restaurants and hotels in major Kenyan towns due to their relatively lower consumer prices compared to other foods. When foods are deep-oil-fried, the amount of oil absorbed by the food is important since nutritionally, the amount of oil absorbed has a marked bearing on the number of calories supplied by the food. Fried foods such as chips may contain a considerable amount of oil to such extent that their consumption is of concern to nutritionists who advocate for a decrease or an increase of fat content in the diet depending on the part of the world where they are based. Chips with lower oil content and equivalent sensory attributes are expected to be highly accepted by consumers. The influence of potato cultivar and stage of maturity on uptake of oil into chips was investigated using eight Kenyan cultivars including five varieties (Tigoni, Desiree, Dutch Robyjn, Kenya Karibu, and Kenya Sifa) and three promising potato clones coded as 393385.47, 391696.96 and 393385.39. The eight cultivars were grown under cultural standard conditions at the National Potato Research Centre, Tigoni. The crop was dehaulmed two weeks before harvesting and allowed to cure at ambient air conditions (15-19 °C/86-92 % RH) for three weeks. The potatoes were harvested at 90 or 120 days after planting. The variety of potato used had a significant effect ( $P \leq 0.05$ ) on oil uptake, with Dutch Robyjn having the lowest oil content. The cellular structures may have affected the oil uptake into the chips by influencing solid content, moisture loss during frying or damage done to original anatomy during processing. Harvesting before maturity significantly ( $P \leq 0.05$ ) increased oil content of chips when compared to those prepared from mature tubers. There is need for processors to wisely choose the potato cultivar in order to produce French fries with low oil content.