

Kenya Agricultural Research Institute - Embu



FIPS-Africa co-operates with Mr John Muthamia of KARI-Embu, within the framework of its project funded by DfID's Crop Protection Programme

John's role in the project is to promote conservation tillage through Farmer Field Schools

Farmer in a field school in Kirinyaga district adopting the WH505 variety under Conservation Tillage

Major findings from John's research were as follows:

- ✓ Use of fertilizers compared to non-use of fertilizers had significant ($p=0.05$) increase in yields of over 100%. The increase was associated to the inherent low soil fertility. Hence, soil fertility improvement was recommended for improved yields of maize and other crops as a component of conservation tillage.
- ✓ Conservation tillage (using post-emergence (*glyphosate*) and pre-emergence (*atrazine + alachlor*) herbicides) increased yields of maize by 40% compared to conventional tillage (digging and hand-weeding). Conservation tillage also reduced the cost of maize production by over 50%. After tilling the land, use of *atrazine + alachlor* increased yields by 30% compared to hand-weeding. Yields through control of weeds by herbicides and by hand were 6.2 and 4.7 T/ha, respectively.
- ✓ The use of conservation tillage substantially reduced labour requirements by 45%. Over 60% of the labour requirement for maize production was allocated to land preparation and weeding.
- ✓ Farmers described the benefits from conservation tillage as:-
 - More extra time for relaxation and therefore cohesiveness among family.
 - More time for economic activities on and off the farm.
 - Less stress due to less manual work.
 - Less exposure to harsh (cold and wet) weather especially during weeding.
 - Less exposure to disease-causing situations
 - More study time for school-going children who contribute to family labour.
 - Reduced cost of production of maize
 - Less soil erosion
 - Healthy families