

Village-based Advisors in Kiambu County empower small-holder farmers to improve food security through promotion of the improved KH500-49A maize variety

Project update: September 2011



KH500-49A is a new maize variety available on the market in Kenya. It was developed by plant breeders at KARI's research station at Muguga, with funding from AGRA. KARI licensed the variety to *Leldet Ltd.*, an emerging seed company in Kenya. The variety is superior to conventional high-altitude hybrids because of its earlier maturity, resistance to the Maize Streak Virus, and higher yields. During the 2011 long rainy season, FIPS-Africa worked with *Leldet Ltd.* to promote this new variety amongst small-holder farmers in Kiambu County. A network of 15 Village-based Advisors (VBAs) in the Githunguri area, developed by FIPS-Africa, sold a total of 919 (408 x 400 g, and 509 x 2 kg) small packs of the KH500-49A maize variety to small-holder farmers. In August 2011, farmers who had purchased the variety were visited to determine the performance of the variety.

As a result of promotion of new improved maize varieties over the past three years, demand for farm inputs has increased to such an extent that Peter Nyutu, FIPS-Africa's Kiambu County Co-ordinator, has opened a farm input shop (Imani Enterprises) from where seeds and fertilizers are supplied to VBAs to sell to farmers in their villages (see image).

1. Edith Wacera, Kimeria Village, Githunguri Location; 1770m, S01.06359°, E036.81999°



In March, Edith purchased three x 400 g packs of the KH500-49A maize variety from Peter Nyutu, the County Co-ordinator. Before, she had been growing the local varieties that hardly produced any harvest. In mid-June, she sold some green maize cobs for KSh 3,000. She expects to harvest 5 bags of grain at the end of the season. She is planning to sell 2 bags in the local market, mill 1 bag into flour and save the rest for food for her family.

2. Fredrick Mbugua, Kimeria Village, Githunguri Location; 1780m, S01.06153°, E036.81805°



Images: Fredrick showing the difference between the local variety (left) and the KH500-49A variety (right)

Fredrick had almost given up on maize farming after harvesting just 1½ bags of maize during the previous season. He had planted 5 kg grain of the traditional maize variety. However, in March, Peter Nyutu sold him 2 kg seed of the KH500-49A variety. He had just sold green maize for KSh.2,000 and estimates he will harvest 6 bags of grain.

3. William Thuku, Maguna Village, Githunguri Location; 1876m, S01.09489°, E036.84898°



In March, William planted a 400 g pack of seed of the KH500-49A variety. He purchased the seed from Mary Wambui, his local VBA. He says he is looking forward to harvesting 2 bags of maize, which he will save for food for his family. In addition, he thinks he will earn KSh 3,000 from the sale of fodder. He is looking forward to the next season when he aims to plant the same variety on a larger piece of land.

4. Lucy Karuba, Mbogo Village, Kajai Location; 1786m, S01.06454°, E036.82349°



Images: Lucy showing the difference between the local variety (left) and the KH500-49A variety (right)

In March, Lucy purchased 2 x 400 g packs of seed of the KH500-49A variety from Mary Wambui, her local VBA. She sold some of her crop as green maize for KSh 2,500 and used the money to buy a new school uniform for her son. She hopes to harvest at least 4 bags of grain (360 kg). She also expects to sell fodder for KSh 3,000.

5. Tabitha Mwitoto, Maguna Village, Githunguri Location; 2481m, S00.99146°, E037.68518°



In April, Tabitha purchased 4 x 400 g packs of seed of the KH500-49A variety from Mary Wambui, her local VBA. The farmer was amazed by the crop's performance. She sold green maize for KSh 4,500 and used the money to pay for her children's school fees. She estimates she will harvest about 7 bags of grain which she will store for food for her family. Unlike before when struggled to feed the family, she now has enough food to last 1½ years.

6. Leah Njogu, Mbogo Village, Kajiado Location; 1986m, S01.08454°, E036.82448°



Images: Leah showing the difference between the local Gikuyu variety (left) and the KH500-49A variety (right)

The previous season, Leah had expected to harvest a high yield of grain after planting 4 kg grain of the local *Gikuyu* variety. However, she harvested only 1 bag (90kg). This prompted her to try a new variety. She purchased 2 kg seed of the KH500-49A variety from Mary Wambui, her local VBA. She has been eating the green maize for a while and hopes to harvest 8 bags of grain.

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7. David Muceke, Kariga Village, Gatamaiyu Location; 1954m, S01.03391°, E036.78891°



In early April, David purchased 4 kg seed of the KH500-49A variety from Cecilia Nduta, his VBA. He started harvesting green maize in June, and has been using them to prepare his favourite meal, 'githeri'. He estimates he will harvest 15 bags of grain. He is planning to sell 5 bags for KSh 19,000 and buy a chaff cutter. David will save the rest for food for his family.

8. Eunice Waweru, Riamuti Village, Kajai Location; 1785m, S01.06200°, E036.81878°



Images: Eunice showing the difference between the local variety (left) and the KH500-49A variety (right)

In April, Eunice purchased a 400 g pack of the KH500-49A maize variety from Mary Wambui, her area VBA. She is very pleased with the results though regrets not purchasing more seed. Eunice had also planted the local variety at the same time but the crop failed to produce grain.

9. Alice Njoki, Ndaganu Village, Gatamaiyu Location; 1909M, S01.03464°, E036.78891°



Alice was on the verge of giving up on growing maize until Grace Wanjiku, her local VBA, introduced her to the new KH500-49A variety. She bought 2 kg of seed. In June, she sold some green maize cobs for KSh 1,800. She expects to harvest 7 bags of grain. She says that she will continue planting the new variety.

10. Mary Kung'u, Karweti Village, Kajai Location; 1780m, S01.06239°, E036.81940°



Images: Mary showing the difference between the local Gikuyu variety (left) and the KH500-49A variety (right)

Mary had always grown the traditional *Gikuyu* maize variety. However, in April, Cecilia Nduta. Her local VBA, convinced her to try the KH500-49A variety. She purchased 3 kg seed. While the local variety withered, the new variety grew well. She expects to harvest 12 bags of grain. She is planning to sell half of the harvest for KSh 21,000 which she will use to buy a cow.

11. Pauline Kagia, Ndaganu Village, Gatamaiyu Location; 1918m, S01.03964°, E036.78994°



In March, Pauline had planted 4 kg of the traditional maize variety prior to planting 400 g of the KH500-49A maize variety. The KH500-49A variety matured faster and by June, she was eating the green maize. She has harvested 1 bag of grain from the local variety but expects to harvest 2 bags of grain from the KH500-49A variety.

12. Ruth Gathoni, Karweti Village, Kariga Location; 1945m, S01.03305°, E036.79111°



Images: Ruth showing the difference between the local variety (left) and the KH500-49A variety (right)

In April, Ruth purchased 2 kg seed of the early maturing KH500-49A variety from Cecilia Nduta, her local VBA. She is expecting to harvest 8 bags of grain.

13. Richard Kariuki, Ndaganu Village, Gatamaiyu Location; 1921m, S01.04161°, E036.81096°



In April, Richard planted two different maize varieties on his farm: 4 kg of the traditional *Gikuyu* variety and 2 x 400 g packs of the new KH500-49A variety, that he bought from his local VBA, Grace Wanjiku. While the *Gikuyu* variety only yielded 1 bag, the KH500-49A variety yielded 3 bags of grain. He says that the harvest has enabled him to save KSh 180 per day that he had been spending on food for his family.

14. Simon Ng'ang'a, Kariga Village, Gatamaiyu Location; 1935m, S01.03190°, E036.78097°



Images: Simon showing the difference between the local variety (left) and the KH500-49A variety (right)

For as long as Simon can remember, he had always grown the local maize varieties. However, during the month of March, his VBA, Cecilia Nduta sold him a 2 kg pack of KH500-49A variety. He has already earned KSh 4,000 from the sale of the green maize and is expecting to harvest at least 6 bags of grain. In the coming season, he intends to plant the same variety on a larger piece of land.

15. Samuel Kariuki, Rui Village, Gatamaiyu Location; 1918m, S01.03479°, E037.78073°



In April, Samuel purchased a 2 kg pack of seed of the KH500-49A variety from Peter Mburu, his local VBA. He harvested 6 bags of grain. He sold 3 bags for KSh 11,400 and used the money to buy a water pump. In the coming season, he hopes to plant maize on a larger area and concentrate more on farming.

16. Mary Mumbi, Lower Kariga Village, Gatamaiyu Location; 1907m, S01.03462°, E036.78090°



Mary only knew about the traditional *Gikuyu* variety that she had always grown. However, it would either produce nothing at all or barely enough to feed her family. In April, Peter Mburu, her local VBA, sold her 1 kg of the improved KH500-49A maize variety. She harvested 3 bags of grain. The grain will enable her to feed her family for the next six months.

17. Beatrice Wanjira, Ndaganu Village, Gatamaiyu Location; 1893m, S01.03818°, E036.79125°



During the month of April, Beatrice bought 2 kg seed of the KH500-49A maize variety from her VBA, Grace Wanjiku. Despite having planted the crop for home consumption, in June she earned KSh 3,000 from selling some green maize. She harvested 6 bags of grain, sold 2 bags for KSh 7,600 and kept the rest for food for her family. Beatrice also benefited from the fodder that she uses to feed her cattle.

18. Mary Muthoni, Rui Village, Gatamaiyu Location; 1926m, S01.03881°, E037.78873°



Mary purchased 4 kg seed of the KH500-49A maize variety in April from Peter Mburu, her local VBA. She expects to harvest 14 bags of grain. She is planning to sell 5 bags for KSh 15,000 that she will use to buy a cow.

19. Loise Wanja, Rui Village, Gatamaiyu Location; 1942m, S01.04181°, E037.79169°



In the previous season, Loise had planted 4 kg grain of the traditional variety and she harvested 1 bag of grain. In April, Peter Mburu, her local VBA, sold her 3 kg seed of the KH500-49A maize variety. She is expecting to harvest 9 bags of grain. She will mill a part of the harvest into flour that she will use to prepare porridge and *ugali*. Her entire harvest will provide sufficient food for her family for 12 months.

20. Elizabeth Nyambura, Rui Village, Gatamaiyu Location; 1956m, S01.06189°, E037.89164°



Elizabeth was introduced to the KH500-49A maize variety by Peter Mburu, her local VBA. In April, she purchased a 400 g pack of seed. She started harvesting the green maize in mid-June. She expects to harvest 2 bags of grain later in the month. The farmer will also benefit from the fodder for food for her cows.

21. Lydia Nyokabi, Rui Village, Gatamaiyu Location; 1920m, S01.03542°, E036.78023°



Lydia had always grown the traditional *Gikuyu* maize variety. She used to plant 6 kg of seed and would at most harvest 2 bags of grain. In April, Peter Mburu, her local VBA, sold her 2 x 400 g packs of seed of the KH500-49A variety. She harvested 3 bags of grain which she has saved for food for her family.

22. Margaret Kahaki, Rui Village, Gatamaiyu Location; 1934m, S01.06438°, E036.79024°



In April, Margaret purchased 2 x 400 g packs of seed of the KH500-49A maize variety from Peter Mburu, her local VBA. In mid-June, she sold green maize for KSh 1,600 and is now expecting to harvest 2 bags of grain. Having planted the local variety before, she testifies that the new variety is earlier maturing, resistant to disease, and higher-yielding.

23. Michael Wanyoike, Miguta Village, Nyaga Location; 1782M, S01.07221°, E036.82531°



In April, Michael purchased 1 kg seed of the KH500-49A variety from Cecilia Nduta, his local VBA. He started harvesting green maize for food in mid-June. He has harvested 4 bags of grain that he says will last him and his family for the next 8 months.

24. Jane Wambui, Rui Village, Gatamaiyu Location; 1396m, S01.35198°, E036.78040°



Images: Jane showing the difference between the local variety (left) and the KH500-49A variety (right)

In April, Jane purchased 4 kg seed of the KH500-49A variety. She sold some green maize for KSh 4,000 and used the money to pay the bills. She then harvested 10 bags of maize all of which she has saved as food for her family. She expects to make a further KSh 7,000 from the sale of fodder. The previous season, Jane had planted 4 kg grain of the local variety but she only harvested 2 bags (180 kg) of grain.

25. Penninah Muthoge, Miguta Village, Nyaga Location; 1912m, S01.09134°, E036.96671°



In April, Penninah purchased a 400 g pack of seed of the KH500-49A variety from Cecilia Nduta, her local VBA. She sold green maize for KSh 800. She has just harvested 90 kg of grain which she has been using for food for her family.

26. Charity Wanjiku, Miguta Village, Nyaga Location; 1886m, S01.08241°, E036.84541°



Images: Charity showing the difference between the local Gikuyu variety (left) and the KH500-49A variety (right)

In April, Charity purchased 1 kg seed of the KH500-49A maize variety from Cecilia Nduta, her local VBA. She harvested 3 bags of grain. She sold some green maize for KSh 2,000. She also intends to sell fodder for KSh 2,500. This is the first time that she has got such a big harvest. The previous season, she had planted the traditional *Gikuyu* variety from which she harvested only ½ bag of grain.

27. Mary Njoroge, Muthandi Village, Ngewa Location; 1750m, S01.06947°, E036.82007°



Mary has always planted the local variety. However, in April, her local VBA, Cecilia Nduta, introduced her to the KH500-49A maize variety. She bought 1 kg seed. She sold some green maize for KSh 2,000 and re-invested it back to the farm. She has just harvested 2 bags of grain that she has been using for food.

28. Loise Wainaina, Kigio Village, Gatamaiyu Location; 1984m, S01.09882°, E036.99818°



Loise purchased a 400 g pack of seed of the KH500-49A variety from her local VBA, Cecilia Nduta. She is expecting to harvest 2 bags of grain later in the month.

29. Wawira Mungai, Muthandi Village, Ngewa Location; 1790m, S01.07143°, E036.84108°



In April, Wawira purchased 1 kg seed of the KH500-49A variety from Cecilia Nduta. She harvested 3 bags of grain. She has been using the grain for food for her family and her cows have also benefitted from the fodder.

30. David Murira, Muthandi Village, Ngewa Location; 1801m, S01.76141°, E036.841004°



David had always grown the traditional variety in his farm. In April, Cecilia Nduta, a VBA in the area, sold him 1 kg seed of the KH500-49A variety. In June, he started selling the green maize and earned KSh 2,000. He has also harvested 2 bags of grain that he has saved for his family. David will also benefit from the stover for food for his cows.

31. Loise Gitau, Muthandi Village, Ngewa Location; 1842m, S01.09146°, E036.86014°



In April, Loise bought 1 kg of seed of the KH500-49A variety from Cecilia Nduta. She hopes to harvest 2 bags (180 kg) of grain that she will keep for food for her family.

32. Joseph Maina, Muthandi Village, Ngewa Location; 1896m, S01.09448°, E036.98014°



In April, Cecilia Nduta, a local VBA in Ngewa Location sold a 2 kg pack of seed of the KH500-49A variety to Joseph. In June, he sold green maize worth KSh 2,600. He used the money to pay for his son's tuition. Joseph later harvested 3 bags of grain that he has kept for food for his family. This will enable him to save KSh 100 per day that he would otherwise have spent on buying food.

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33. Ben Wanjiru, Kigio Village, Gatamaiyu Location; 1812M, S01.06677°, E036.79513°



In early April, Ben purchased a 400g pack of seed of the KH500-49A variety from Cecilia Nduta. She started harvesting green maize in mid-June and now expects to harvest 1 bag (90 kg) of grain.

34. Rachael Mweru, Kigio Village, Gatamaiyu Location; 1846m, S01.09676°, E036.86614°



In April, Rachel purchased 1 kg seed of the KH500-49A variety from Cecilia Nduta. She sold green maize for KSh 1,200 and has just harvested 3 bags of maize which she will keep for food. Last season, she had planted 5 kg grain of the traditional variety from which she harvested nothing.

35. Purity Gitu, Kigio Village, Gatamaiyu Location; 1864m, S01.086176°, E036.84619°



Purity had always grown the traditional *Gikuyu* maize variety. The previous season, after planting 3 kg grain, she harvested only 40 kg grain. In April, she purchased 1 kg seed of the KH500-49A variety from Cecilia Nduta. She started eating green maize in mid-June. At the end of the month, she expects to harvest 2 bags of grain.

36. Christine Mwangi, Kigio Village, Gatamaiyu Location; 1878m, S01.09178°, E036.96108°



In April, Christine purchased 1kg seed of the KH500-49A maize variety from her local VBA, Cecilia Nduta. She expects to harvest 3 bags of grain.

37. John Ndung'u, Kimeria Village, Githunguri Location; 1780m, S01.06153°, E036.81805°



John purchased 2 kg of the KH500-49A variety from the County Coordinator, Peter Nyutu. He sold green maize for KSh 2,000 and intends to sell 3 bags of grain for KSh 11,500. He will save the remaining 2 bags for food for his family. John said he will also save about KSh. 4,000 that he would have spent on fodder for his cows. The previous season, he had planted 5 kg of the local variety from which he harvested only 1 bag (90 kg) of grain.

38. Philip Muchira, Muthandi Village, Ngewa Location; 1801m, S01.76141°, E036.841004°



In April, Philip bought 1 kg seed of the KH500-49A variety from Cecilia Nduta, his local VBA. He has harvested 2 bags of grain after selling green maize for KSh 2,000. He will save the harvest for food for his family. Philip had previously planted 4 kg grain of the traditional variety and harvested 2 bags (180 kg) of grain.

39. Lucy Njogu, Muthandi Village, Ngewa Location; 1785m, S01.07638°, E036.82438°



Lucy purchased 1 kg seed of the KH500-49A variety in April from Cecilia Nduta. She sold green maize for KSh 1,700 and used the money to pay for her grandchild's tuition. She expects to harvest 2 bags of grain later in the month.

40. Hannah Wangai, Miiri Village, Kanjai Location; 1902m, S01.05406°, E036.328°



Hannah couldn't hide her joy after being introduced to the KH500-49A variety by her local FIPS VBA, Naomi Wanjiru. She planted 2 x 400 g packs in April, she harvested 2 bags of grain (180 kg) in August. She shared part of her harvest with her neighbours who hadn't grown the variety, and saved the rest for food for her family.

41. Mary Njoki, Nyamuthaga Village, Kaburu Location; 1996m, S01.04687°, E036.96677°



Having grown the traditional variety for several seasons, Mary opted to try out the new variety being promoted by FIPS-Africa. In April, she purchased 2 x 400 g packs of the KH500-49A variety from Naomi Wanjiru, her area VBA. In July, she harvested 3 bags of grain. This has enabled her to save money that she had been using to buy flour from the local market. Additionally, she made an extra KSh 2,000 from selling the stover for animal feed.

42. David Nyoro, Ndite Village, Gatamaiyu Location; 1947m, S01.02989°, E036.77653°



In April, David purchased a 2 kg pack of seed of the KH500-49A variety from his local VBA, Naomi Wanjiru. He learnt that the variety is best suited for his area because it is earlier maturing and higher yielding than the local varieties. In July, he harvested 6 bags of grain. He sold 2 bags for KSh 6,000 (US \$ 67) which he invested in his wife's business. He saved the rest of the harvest for food for his family which he estimates will last for a year. Additionally, he benefited from the maize stalks that he has been using to feed his livestock.

43. Tabitha Njuguna, Nyamuthaga Village, Kaburu Location; 1902m, S01.09874°, E036.91878°



Tabitha had always grown maize, but she can hardly remember a time when she harvested enough to feed her family. The local varieties that she planted would either dry up before maturity or would yield just a little grain. In early April, she purchased the KH500-49A variety from Peter Nyutu, the County Coordinator. In June, she sold green maize for KSh 2,300 and used the money to pay for her daughter's school fees. Later in the month, she harvested 2 bags of grain that she has saved for food for her family.

44. Rose Wandika, Ndaganu Village, Gatamaiyu Location; 1921m



Putting food on the table for the family was becoming more of a burden than a responsibility for Rose. That was before she met Peter Nyutu, FIPS-Africa's County Coordinator. In April, she purchased 1 kg seed of the KH500-49A variety. In July she harvested 3 bags of grain. Rose, who is a single mother of three, no longer has to worry about providing food for her children for the next one year.

45. Joseph Maina, Ndaganu Village, Gatamaiyu Location; 1896m, S01.03919°, E036.81187°



In April, Joseph purchased 2 kg seed of the KH500-49A variety from Peter Nyutu. Unlike in the previous seasons where the local variety would take 6 months to mature, the KH500-49A variety took only 4 months. He harvested 5 bags of grain. He sold 1 bag for KSh 3,500 that he used to repay a loan. He saved the remaining 4 bags for food for his family.

46. Ann Cira, Kahuruko Village, Kanjai Location; 1974m, S01.02473°, E036.77363°



After many years of struggling to provide food for her family, Ann was frustrated with planting the local varieties. In April, she met Naomi Wanjiru, a FIPS-Africa VBA who sold her 1 kg seed of the KH500-49A variety. In July, she harvested 2 bags of grain (180 kg) despite having sold some green maize for KSh1,500 during the season. For the first time, Ann will have enough food in store for her family of 8 and also enough fodder for her cows.

47. Loise Chege, Kahuruko Village, Gatamaiyu Location; 1916m, S02.439°, E036.77365°



Image: Loise showing part of her maize produce that she just harvested



In April, Loise bought 4 kg seed of the KH500-49A variety from her local VBA, Naomi Wanjiru. She harvested 9 bags of grain (810 kg) in July. She sold 3 bags for KSh 11,400 (\$127) and used the money to pay for her daughter's college fees. She saved the remaining 6 bags of grain for her family which she estimates will last 18 months.



Summary

1. In this County, farmers have been growing the late-maturing local varieties (6 month) and 6-series highland varieties.
2. Increasingly unreliable rainfall, and late season drought, often results in maize crop failure.
3. There is increasing incidence of the maize streak virus (MSV) in the area which also reduces yields. The local and 6-series varieties are highly susceptible to MSV.
4. The KH500-49A variety, bred at KARI (Muguga), is both early-maturing (5 months) and resistant to MSV, and gives high yields of grain and fodder.
5. FIPS-Africa's innovative promotion methodology and close links with *Leldet Ltd.* have empowered several thousand farmers to benefit from this and other improved varieties as quickly and cost-effectively as possible.
6. FIPS-Africa's innovative methodology has also created 15 self-employment opportunities for both men and women, selling seeds to and advising their neighbouring farmers at the Village level.
7. Farmers are benefiting from improved food security, improved income generation from sales of green maize, and improved fodder production for dairy cows in the farming system.

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