

Farmers First

PHASE:	Research Station	<u>50 – 500 farmers</u>	1,000 – 20,000 farmers	Full Scale
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Introduction

Dairy cows are an iconic part of the Kenyan landscape. They are a symbol of wealth and status, improving soil fertility with their manure and providing households with a diversified income stream. One Acre Fund is offering a dairy cow care package to increase milk production. The package includes improved fodder crop seeds, cow health care products, trainings on proper animal management, and access to improved genetics through artificial insemination. By combining products that allow for farmers to raise healthier animals, One Acre Fund aims to have a long-term and diverse impact on household incomes.



Hailey Tucker/One Acre Fund

20%	Percent increase in tick treatment applications	No change	Total milk production*
45%	Percent increase in mineral supplements	No change	Incidents of cow illness*

*Measured differences were insignificant at the p=0.1 level. See Yield and Profit table below.

Context and Trial Rationale

- Local dairy cow breeds produce low quantities of milk relative to the potential production level of improved breeds. This production gap is in part due to poor nutrition, illness, and lower genetic potential.
- Improved genetics means cattle offspring have higher market value and higher milk production potential.
- Increasing cow health through better nutrition and disease control can allow the dairy production potential to be met.

Major Intervention Configurations

- **Fodder:** One Acre Fund provided farmers with improved pasture fodder crops as well as training on zero grazing, a technique that increases nutrient up-take by the cow and reduces soil erosion. Farmers received training on how to seed and harvest these fodder crops.
- **Health:** Farmers received deworming medication, tick control spray and applicator, vaccinations, a multivitamin injection, nutritional supplements minerals, and insurance for

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one cow. Farmers additionally received training on how to administer medication and pest control treatments.

- **Artificial Insemination (AI) Service:** Improved genetics increases the market value and production potential of calves. When farmers recognize their animal is in heat, they notify a One Acre Fund hotline that dispatches an artificial insemination service to their house. Farmers have the choice between three foreign cow breeds. Farmers receive training on how to identify heat and care for their animal at different stages of the breeding cycle.
- **Trial Configurations:**
 - 1) **Control:** Farmers caring for their cows without One Acre Fund-provided inputs or trainings.
 - 2) **Improved cow care:** Improved fodder seed, health control products, breeding services and trainings on grazing management and breeding care.

A. Yield and Profit: The below table summarizes agronomic results.

Trial	Configuration	Location/ Date	Total milk production (L)	Profit (USD/farmer)	Change in Profit /Acre vs. Control Farmer
1. Control: Farmers with cows without dairy cow care package	133 Farmers	Western Kenya Long rains, 2014; Short rains, 2014	468	On-going	N/A
2. Improved cow care: Farmers with cows that received dairy cow care package	108 Farmers	Western Kenya Long rains, 2014; Short rains, 2014	478	On-going*	On-going*

* The revenue and profit figures are not final. Our preliminary analysis indicates that treatment farmers are earning \$67 more than control farmers. However, we have not yet thoroughly vetted this number and understood the market or program mechanisms leading to that difference.

B. Farmer Adoption: *Medium Adoptability*

- **Purchase Behavior:**
One Acre Fund modified the dairy cow care package for 2015. This will allow farmers to purchase the services piecemeal under the assumption that farmers would be more inclined to adopt if they could select the products individually rather than buying the full bundle. As a result, an estimated 1,000 farmers opted to purchase at least one component of the dairy cow care bundle. While this figure is small as a percentage of total 2015 farmers, it represents a four-fold increase in farmers buying dairy cow care products.
- **New Product Expansion:**
The dairy cow care package is One Acre Fund's first venture into livestock care and improvement. Lessons from farmer feedback will be instrumental in shaping this program,

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as well as all future livestock-related interventions. The currently low rate of adoption is not a deterrent, but rather an impetus to further refine the products targeting livestock owners.

C. Operability at Scale: *Medium Operability*

One Acre Fund selected the dairy cow products in part because of their availability at scale and ease of distribution. Unfortunately, due to current small trial sizes, One Acre Fund has not been able to fully test potential challenges of larger-scale operations, such as coordinating artificial insemination appointments at scale during peak demand periods. However, the team is confident that this will not be an obstacle to offering the product at full scale.

Next Steps

In the future, One Acre Fund will:

- 1) Continue collecting data on cow milk production, earnings and cow health through March 2015 and conduct a final trial impact analysis to assess programmatic impact
- 2) Conduct a product study to assess the major drivers of farmer adoption of the dairy cow package in order to better tailor the offering to farmer demand.