

## Effect of feed and health packages on the performance of small ruminants in northern Ghana



Photo: [USAID](#)

### Introduction

The extensive small ruminant production system is characterized by disease outbreaks, shortage of feed and limited availability of water. Secondly, the crop and livestock systems are not effectively integrated to promote efficient use of nutrients. The study therefore aimed at improving crop-livestock intensification and integration through the introduction of improved feeding and health interventions into small ruminant production systems in Africa RISING project communities in northern Ghana.

### Methods

The experiment ran from November 2013 to October 2014 in 6 Africa RISING intervention communities in northern Ghana. Ten farmers were selected per community with five on treatment (feed and health treatment) and five control (farmer's practice). A daily amount of 200g of concentrate feed, which cost 31 US cents/kg, was given to treatment animals. The health treatment consisted of antibiotic injection, treatment against endo- and ecto-parasites, multivitamin injection every quarter plus one time Peste des Petits Ruminants (PPR) vaccination. Cost-benefit analysis was undertaken.

### Results

Growth rate of treatment animals was higher than that of control animals ( $P < 0.05$ ) (Table 1). Lambs grew about twice as fast as kids ( $P < 0.05$ ) (Figs. 1a & 1b). Lower mortality rate was observed in treatment animals compared to control ( $P < 0.05$ ) partly contributing to higher birth rate observed in treatment animals ( $P < 0.0001$ ) (Table 1). A net gain of US\$5.65 was observed for each treatment animal compared to US\$8.58/control animal ( $P < 0.05$ ) however there was interaction between net gain and farmer's management practice ( $P < 0.05$ ).

**Table 1:** Performance of treatment and control flocks of animals

Parameter	Treatment	Control
Body weight gain/ animal (kg)	1.10	-0.39
Growth rate (g/d)	49.00 <sup>a</sup>	39.42 <sup>b</sup>
Survival rate (%)	89.82 <sup>a</sup>	83.33 <sup>b</sup>
Birth rate (%)	186.74 <sup>a</sup>	97.17 <sup>b</sup>
Offtake rate (%)	24.49	20.20

Figure 1a: Cumulative growth trend of lambs aged zero to 12 months

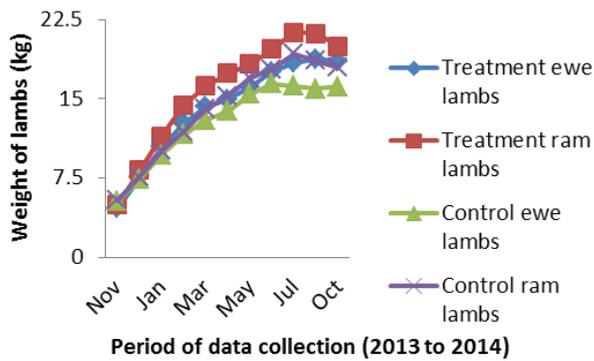
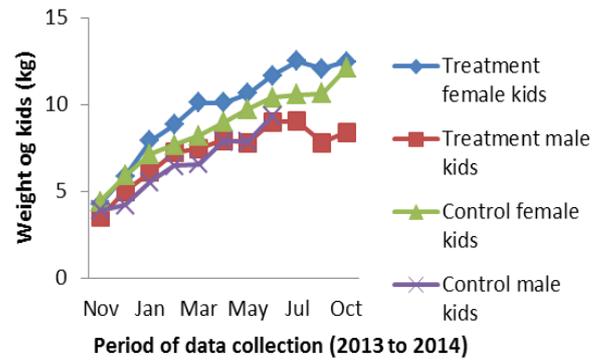


Figure 1b: Cumulative growth trend of kids aged zero to 12 months



## Conclusions

The treatment resulted in significant reduction in mortality and increased growth and birth rates. The concentrate feed in particular could be used selectively for pregnant and lactating females as well as for fattening males under the intensive system. The study confirms the positive effects of feed and health interventions on improved animal productivity and flock growth, and the potential for better integration of crop and livestock production systems. However, the net returns from such interventions should be considered in view of the relatively high cost of concentrate feed and the use of locally available feed resources to replace concentrate feed is recommended to ensure profitability and sustainability.



The Africa Research In Sustainable Intensification for the Next Generation (Africa RISING) program comprises three research-for-development projects supported by the United States Agency for International Development as part of the U.S. government's Feed the Future initiative.

Through action research and development partnerships, Africa RISING will create opportunities for smallholder farm households to move out of hunger and poverty through sustainably intensified farming systems that improve food, nutrition, and income security, particularly for women and children, and conserve or enhance the natural resource base.

The three projects are led by the International Institute of Tropical Agriculture (in West Africa and East and Southern Africa) and the International Livestock Research Institute (in the Ethiopian Highlands). The International Food Policy Research Institute leads an associated project on monitoring, evaluation and impact assessment.

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