Community trapping and slash Trials for *Simulium damnosum s.l.* control in northern Uganda


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Introduction

- Vector control has been used as a main strategy for oncho control before the advent of ivermectin.
- It registered successes in a number of countries: e.g. West Africa, Kenya, Uganda etc.
- However, vector control has shortcomings which include insecticide resistance and need for technical staff.
- This stimulated development of other new innovations in vector control.
- Recent development of Esparanza Window Trap (EWT) demonstrated potential to replace HLC; it was evaluated in Mexico, Burkina Faso, Nigeria and Ethiopia.
- The slash and clear brings an additional vector control strategy for black fly control.
- The need to supplement ivermectin MDA in the era of oncho elimination is critical in achieving 2020 goal.
- Involvement of community has been minimal in vector control, yet sustainability of most programs rely on community participation.
- We report on the community trials of EWT and slash/clear strategies in Madi mid-north focus in northern Uganda.
Objective/research questions

Objective

☑ To test the hypothesis that community based vector control measures based upon larval habitat removal and optimized traps will result in long term reductions in vector biting rate.

Research questions

☑ Can Community run EWT traps effectively?

☑ Is the removal of aquatic vegetation that represent the primary black fly larvae attachment point an effective community- based tool to supplement ivermectin distribution?
Study Area
Methodology- (1) Esparanza Window Traps

• Community trained field staff deployed traps in two gardens in each of the two study villages in northern Uganda.
• Five traps were set from 8:00 am - 5:00 pm at the edges or middle of the garden at 30 metres away from each other.
• Flies in all the traps were removed, counted and preserved in alcohol.
• Traps were alternated on weekly basis in the two gardens.
• Catching sites were established in each garden at least 100 metres away from the traps-HLC.
• Deployment of traps was done for 20 weeks.
• Data on fly collections were converted in log mean of total number of flies caught then compared: HLC alone, and HLC vs. EWT.
Methodology- (2) slash and clear technique

- Villages were selected along River Unyama, one randomly assigned to intervention and control.
- Base line collections using HLC to establish the biting rate at each village was conducted for 7 days.
- Young men (16-22 yrs) from the village were recruited and trained how to slash trailing vegetation in the river and throw out along the bank.
- Landing collections were conducted for 30 days, 140 days and for 12 months.
- The number of flies collected in the intervention and control villages were compared.
- The data were analyzed using a basic linear model that treated the river as a blocking effect and treatment type as the variable of interest.
Garden deployment of EWT
Results: EWT garden deployment

![Diagram A](image)

- trap
- HLC with trap
- HLC alone

![Diagram B](image)

- HLC with trap
- HLC alone

Week

[0 5 10 15 20]

Mean catch

[0 100 200 300 400 500 600 700 800 900]

[0 5 10 15 20]
Slash activities along R. Unyama
Results- 30 days monitoring
Results: 140 days monitoring

**A**

- LUKAYI (INT)
- ONGAYI (CONT)

**B**

- BARAMINYI (INT)
- AGUCURA (CONT)
Results -12 months monitoring

Benjamin et.al. Plos Neg. Trop. Dis. 12(8), 2018 :e0006702
Conclusion

- Garden deployment of traps demonstrated the ability of EWT to get more flies than HLC and averting fly bites to garden workers.
- Removal of vegetation (slash) results in dramatic reduction of black fly population with a slow population recovery.
- Community when empowered can effectively maintain black fly traps and remove vegetation from black fly breeding habitats.
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