

The evaluation of the different bait attractants against giant African snail (*Achatina fulica*)

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Abstract

The experiment regarding the evaluation of different bait attractant was carried out against the giant African snail using eight different treatments to know the efficacy of the baits. Results of the bait attractant experiment indicated that the highest per cent of snails were attracted to the Soybean Waste + Jaggery (17.50 %) which was found significantly superior to all the bait materials in attracting snails. This was followed by the Rice Bran + Jaggery (14.72 %) and Soaked Wheat Flour + Jaggery (14.17 %). Giant African snails attract more towards the cereals and jaggery water was obtained in the experiment.

Keywords: Giant African snail, cereal baits, bait attractants, rice bran

Introduction

Giant African snail is belonging to the phylum molluska and Achatinidae family, one of the largest and most damaging land species. The Giant African snail is native to coastal East Africa but it is now widespread to all continents except Antarctica. The global invasive species database has included this among the 100 world's worst invaders. Giant African snail pills at least 500 different types of the plants including all type of the fruit and vegetables and also the field crops. It is highly adaptive to a wide range of environmental conditions and is capable of modifying its life cycle to suit local conditions. Giant African snail is a threat to the sustainability of crop systems and native ecosystems, has a negative impact on native fauna, and act as a vector of human disease. Giant African snail has damaged or to ornamental plants and vegetables in Bangalore (Veeresh *et al.*, 1979 ^[6] bracket). Damage infestation of spinach, amaranthus, sarpgandha, Marigold by snails (Puttaswamy *et al.*, 1981) ^[4]. 100% damage of seedlings of forest nurseries teak, silver oak, neem, tamarind, moringa, cashew, Siso, Jamun, almond, banyan, peepal, citrus, papaya by the Giant african snail in khanapur taluka of belagavi district. (Mallapa, 2014) ^[2].

To control the population of giant African snail it is essential to attract the snails and this experiment was carried out for know which used bait attract more to the snails.

Materials and method

The choice test or cafeteria test was carried out on adults of giant African snail by placing different baits. The bait materials placed equidistantly in plastic trays of 30 cm diameter fixed at the ground level at 1.5 m apart and each bait was separated by bamboo sticks with 2 m distance from source. At the centre in plastic tray 45 snails were released at 7.00 pm. The entire experimental area was covered with

nylon net to prevent the migration of snails out of experimental site. the experiment was replicated thrice with 8 treatments. The number of snails attracted to each bait was recorded at 12 hr (at 7 am morning) after release. finally, per cent snails attracted to each bait material was worked out and data subjected to statistical analysis. (Mallapa, 2014)

Treatment details

Tr. No	Treatment details	Quantity
T1	Moist Gunny Bag +Jaggery	1N
T2	Soybean Waste + Jaggery	50g
T3	Mulberry Leaves + Jaggery	50g
T4	Rice Bran +Jaggery	50g
T5	Soaked Wheat Flour + Jaggery	50g
T6	Cucumber Slices	50g
T7	Tomato Fruit Slices	50g
T8	Water Soaked Sorghum	50g

* jaggery represents jaggery water sprinkled over treatment

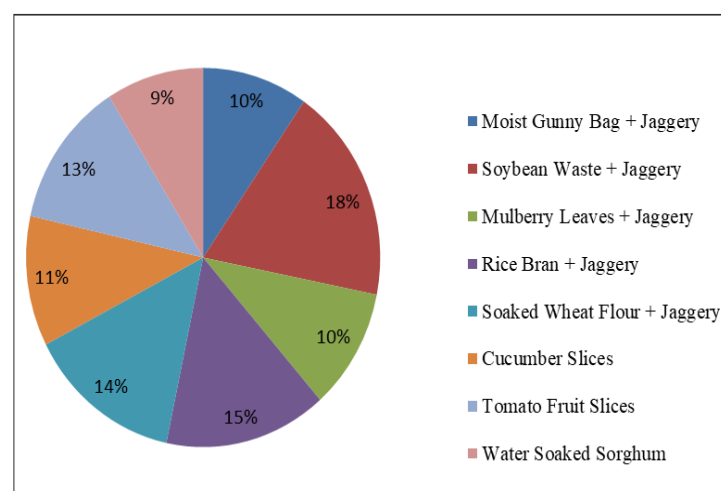


Fig: Cafeteria test of bait attractants against giant African snail

Result and Discussion

Table 1: Performance of different bait attractants against giant African snail

Tr. No.	Treatment details	Quantity	No of snails released	No. of snails attracted to each bait	Percentage of GAS attracted to each bait material after 12 hrs
T ₁	Moist Gunny Bag + Jaggery	1N	120	10.67 (3.41) *	8.89 (17.32) **
T ₂	Soybean Waste + Jaggery	50g		21.00 (4.68)	17.50 (24.71)
T ₃	Mulberry Leaves + Jaggery	50g		13.33 (3.77)	11.11 (19.45)
T ₄	Rice Bran + Jaggery	50g		17.67 (4.31)	14.72 (21.72)
T ₅	Soaked Wheat Flour + Jaggery	50g		17.00 (4.23)	14.17 (22.09)
T ₆	Cucumber Slices	50g		13.67 (3.82)	11.39 (19.71)
T ₇	Tomato Fruit Slices	50g		16.67 (4.20)	13.89 (21.86)
T ₈	Water Soaked Sorghum	50g		10.00 (3.30)	8.33 (16.75)
	SE(m) ±			0.152	0.50
	C.D. (5%)			0.467	1.54
	C.V. (%)			6.652	4.27

The different bait materials as listed in the Table 4.11., were subjected to cafeteria test. Total 120 snails were released in the treatment and per cent snails attracted to each bait material varied from range of 8.33 per cent (Water Soaked Sorghum) to 17.50 per cent (Soybean Waste + Jaggery) per night. Highest per cent of snails are attracted to the Soybean Waste + Jaggery (17.50 %) which was found significantly superior to all the bait materials in attracting snails. This was followed by the Rice Bran + Jaggery and Soaked Wheat Flour + Jaggery 14.72 and 14.17 per cent respectively. Tomato fruit slices, cucumber slices and Mulberry leaves + Jaggery baits attracted 13.89, 11.39 and 11.11 per cent respectively. Moist Gunny Bag + Jaggery attracted 8.89 per cent snails. Lowest attraction was shown by the Water Soaked Sorghum which was 8.33 per cent.

Gowda (2015) ^[1] also found the rice bran + jaggery as effective attractant against giant African snails. Shevale and Bedse, (2009) ^[5] reported that Metaldehyde 2.5% pellets (25 kg/ha) along with methomyl 40SP@10g/Kg of fermented food bait (50 kg wheat bran+5 kg Jaggery + yeast 30 g/ha) gave 70% control. Paul *et al.*, (2016) used 60 kg of rice bran, 12 kg of jaggery and 24 liters of water for preparation of poison bait against giant African snail. Present results are in confirmation with the above workers.

Conclusions

From the experiment giant African snails attract more towards the cereal baits can be concluded. In the snail bait attractants, Soybean Waste + Jaggery** attracted the highest percentage of snails (18.51%), significantly outperforming other bait materials such as Rice Bran + Jaggery (14.51%) and Soaked Wheat Flour + Jaggery (14.07%).

References

1. Gowda M. Management of giant African snail, *Achatina fulica* Ferussac in soybean (Master's thesis). University of Agricultural Sciences, Dharwad, 2015.
2. Mallappa C. Integrated management of giant African snail, *Achatina fulica* Ferussae in agriculture and

horticulture ecosystem. Ph.D. Thesis, University of Agricultural Sciences, Dharwad, 2014:1–279.

3. Pinku P, Rafee CM, Balikai RA. Management of giant African snail, *Achatina fulica* Ferussa under protected cultivation of capsicum. Journal of Experimental Zoology, India, 2016;19(2):1181–1184.
4. Puttaswamy, Reddy DNR, Krishna Naik L. Occurrence of *Cryptozona semirugata* on cultivated plants. Current Research, 1981;10:1–62.
5. Shevale BS, Bedse VL. Evaluation of different poison baits for the management of giant African snail, *Achatina fulica* Bowdich. Pest Management in Horticultural Ecosystems, 2009;15(2):147–149.
6. Veeresh GK, Rajagopal D, Puttarudraiah M. First record of African giant snail, *Achatina fulica* Bowdich (Mollusca: Gastropoda) as a serious pest of ornamental crops in Bangalore. Current Research, 1979;8:202–204.