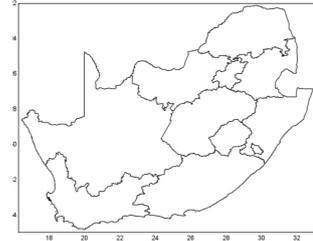


ARC-PPRI FACT SHEETS ON INVASIVE ALIEN PLANTS
AND THEIR CONTROL IN SOUTH AFRICA

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The grasshopper, *Cornops aquaticum* (Brüner), has recently been released as a biological control agent on water hyacinth (*Eichhornia crassipes*) infestations in South Africa. Although it's too early to tell whether the insect has established, the grasshopper is one of the most damaging insects on water hyacinth in its native range, and promises to have a significant impact on the density and expansion of infestations in South Africa.

DESCRIPTION

Adult grasshoppers are green, with a black stripe extending from eye to wing tip on each side of the body (i), and 23-29 mm long (females slightly larger than males). Nymphs are mottled blue-brown/red, and pass through 5-7 instars (growth stages) ranging in length from 6-30 mm (ii). Both nymphs and adults are highly mobile and can swim, the adults are strong fliers, and capable of dispersing to other water hyacinth infestations.



LIFE CYCLE

Females lay 30-70 eggs in batches which are normally inserted into the youngest petiole of the water hyacinth plant, just above the crown (iii). The oviposition hole is covered with a protective plug. The eggs hatch within 25-30 days, and the nymphs begin feeding on water hyacinth leaves immediately. The nymphal period lasts about 50 days, adults have a lifespan of 55-110 days and, in this time, females may produce up to 7 egg packets.



FEEDING DAMAGE

Both adults and nymphs defoliate the plant, causing severe damage. Adults and late instar nymphs defoliate plants by chewing large holes in the leaves, while early instar nymphs create scars by scraping tissue from the surface (iv).



IMPACT ON WATER HYACINTH

The water hyacinth grasshopper has a voracious appetite, and is capable of consuming large amounts of plant tissue. The subsequent loss of photosynthetic area severely hampers plant growth and slows vegetative reproduction. In addition to this, the females' method of oviposition also damages plants. Holes created for egg packets interfere with nutrient translocation through the leaves and expose petioles to waterlogging, causing them to break away from plants prematurely. Furthermore, laboratory studies have shown that the grasshopper's feeding will complement the damage caused by the two weevils already widely established on water hyacinth in the country, and that this will contribute to better control of the weed. The grasshopper, therefore, shows great potential to control water hyacinth infestations in South Africa.



environmental affairs

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