

Three Newly Recorded Natural Hosts of *Aeginetia pedunculata* (Roxb.) Wall. (Orobanchaceae)

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Root holoparasitic angiosperm *Aeginetia pedunculata* (Roxb.) Wall. (Orobanchaceae) was first reported on sugarcane (*Saccharum officinarum* L.) in India around a sugar factory area at Plassey in West Bengal (Ray and Dasgupta 2003; Ray and Dasgupta 2006a). It causes serious crop loss by reducing sucrose content in cane juice and by causing premature drying of sugarcane clumps. In a sugarcane (cv BO 91) field with 31% of *A. pedunculata* infected clumps, the loss of sucrose in individual cane was estimated at 59%. The overall loss of commercial cane sugar (CCS) was 37% amounting to 1.89 t/ha (Ray and Dasgupta 2006b). Survey and investigation conducted in and around the infected sugarcane plots in six farms of the Plassey sugar factory during 2001-2002 revealed that *A. pedunculata* also occurred on four other plant species, all of which are included in the grass family (Poaceae). These are *Cynodon dactylon* (L.) Pers., *Saccharum spontaneum*

L., *Sorghum bicolor* (L.) Moench and *Vetiveria zizanoides* (L.) Nash. Among these four species, however, *C. dactylon*, *S. spontaneum* and *S. bicolor* are new host records. *C. dactylon* is a poor host (Table 1).

All these are natural collateral hosts may help in the survival of *A. pedunculata*. Further, as the seeds of the parasite are water-borne and may be wind borne, these hosts, especially *C. dactylon* may have an important role in long distance dispersal. Significant variations were observed in respect of growth and reproductive behaviour of *A. pedunculata* according to hosts (Table 2). We have rated favourability of the hosts according to their reproductive factors rather than growth factors. All the new host specimens were deposited with Botanical Survey of India, Kolkata.

Table 1. Previously recorded host species (all in Poaceae) of *Aeginetia pedunculata* from India

Species	Locality	Reference
<i>Andropogon muricatus</i> Retz. [Now <i>Vetiveria zizanoides</i> (L.) Nash.]	Botanical Garden, Howrah	Roxburgh 1814
<i>Chrysopogon hackelii</i> (Hook. F.) Fischer	Chikkamagalur, Karnataka	Shivamurthy and Rajanna 1994
<i>Hemarthria compressa</i> (L.f.) R. Br.	Katihar, Bihar	Varma and Kumar 1999
<i>Saccharum officinarum</i> L.	Plassey, West Bengal	Ray and Dasgupta 2003
<i>Saccharum sinense</i> (Roxb.) Jesw.	Botanical Garden, Howrah	Roxburgh 1814
<i>Sehima nervosum</i> (Rottler) Stapf.	Western Ghats, Maharashtra	Santapau 1960
<i>Themeda</i> sp.	Western Ghats, Maharashtra	Santapau 1948
<i>Themeda triandra</i> Forsk.	Chikkamagalur, Karnataka	Shivamurthy and Rajanna 1994
<i>Vetiveria zizanoides</i> (L.) Nash.	Bhagawangola, West Bengal	GuhaBakshi 1984

Table 2. Effect of host species on growth and reproduction of *A. pedunculata*

Host	Plant/m ²	Capsule/ plant	Seed/ capsule	Seed/ plant	Seed/m ²
Good hosts					
<i>Saccharum officinarum</i>	3.25	6.50	9176	61866	215536
<i>Saccharum spontaneum</i>	2.28	1.55	3589	5552	12275
<i>Vetiveria zizanoides</i>	0.20	1.03	1510	1397	234
<i>Sorghum bicolor</i>	0.68	1.16	1058	164	99
Poor host					
<i>Cynodon dactylon</i>	0.11	0.05	614	29	2.9
CD ($P=0.05$)	0.61	1.22	1864	19888	101764
CV (%)	34.7	58.4	37.9	93.4	144.6

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Figure 1. Natural hosts of *A. pedunculata*. a = *A. pedunculata* on *Cynodon dactylon* (L.) Pers.; b = root association between *A. pedunculata* and *C. dactylon*; c = *A. pedunculata* on sugarcane *Saccharum officinarum* L.; d = *A. pedunculata* on *S. spontaneum* L.; e = *A. pedunculata* on *Sorghum bicolor* (L.) Moench.; f = *A. pedunculata* on *Vetiveria zizanoides* (L.) Nash