BALSAM PEAR
MOMORDICA CHARANTIA

Sugar Research Australia

INTRODUCTION
Balsam pear is a native of Asia and is widely grown in tropical and subtropical areas for both food and medicinal purposes. It is widespread in northern Queensland and vigorously competes with crops and native plants on the fringes of rainforests.

DESCRIPTION
This slender-stemmed, twining–climbing annual vine with tendrils lives about three months and has a strong, unpleasant smell.
Its soft, mid-green leaves are stalked and deeply divided into 5–7 shallowly scalloped lobes, up to 15 cm across. Yellow flowers with five petals, about 2 cm across, develop in leaf axils, each with a small, green, leaf-like bract on the flower stalk. Fruit is orange-yellow when ripe, 10–20 cm long, ridged and covered with blunt warts. Once mature, it bursts lengthwise and curls back to expose the edible scarlet flesh around its many black seeds.

DISTRIBUTION
Balsam pear is a native to tropical and subtropical Africa and Asia. It is widespread in northern Queensland where it interferes with the growth of crops and native plants on the fringe of rainforests.
In sugarcane crop balsam pear can smother the crop's growth. Towards harvest it will pull the cane down, making it more susceptible to rat damage and hindering harvesting operations. Yield reduction in balsam pear patches is estimated to be more than 70%.

CHEMICAL CONTROL
There is only one herbicide, flumioxazin (Valor®) currently registered for control of balsam pear in commercial and industrial areas. However, several herbicides registered in sugarcane to control other weeds have been found effective against balsam pear in pot trials. Table 1 displays herbicides that were highly efficient to control balsam pear when applied as pre-emergent treatments.

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Table 1. Pre-emergent herbicide treatments effective in controlling balsam pear in pot trials.

ACTIVE INGREDIENT	COMMERCIAL NAME	EFFICACY
amicarbazone	1kg/ha Amitron®	100%
isoxaflutole	0.2kg/ha Balance®	99%
diuron + hexazinone	4kg/ha Barrage®	97%
metribuzin	2kg/ha Mentor®	97%
imazapic + hexazinone	0.63kg/ha Bobcat® i-MAXX SG	96%
amicarbazone + metribuzin	0.5kg/ha Amitron® + 1kg/ha Mentor®	96%
ametryn	2.8kg/ha Ametrex®	93%
atrazine	3.3kg/ha Gesaprim®	92%

Table 2 displays herbicide combinations that were highly efficient to control balsam pear when applied post-emergence.

Table 2. Post-emergent herbicide treatments effective in controlling balsam pear in pot trials.

TREATMENT	1ST PRODUCT	2ND PRODUCT	3RD PRODUCT	EFFICIENT
Mix 1	0.65L/ha fluroxypyr 400 (e.g. Fireball 400®)	0.56L/ha dicamba 500 (e.g. Dicamba 500®)	0.47L/ha picloram 240 (e.g.Picoflex®)	100%
Mix 2	0.65L/ ha fluroxypyr 400 (e.g. Fireball 400®)	0.56L/ha dicamba 500 (e.g. Dicamba 500®)		83%
Mix 3	1L/ha 2,4-D 500 (e.g. Drop-zone®)	0.65L/ha fluroxypyr 400 (e.g. Fireball 400®)		83%
Mix 4	0.715L/ha 2,4-D 700 (e.g. Amicide Advance 700®)	0.65L/ha fluroxypyr 400 (e.g. Comet 400®)	1.5L/ha 2,4-D + picloram (e.g. Commander 75-D®)	72%

The three-way mixture of fluroxypyr, dicamba and picloram was the most effective post-emergent treatment for controlling balsam pear in pot trials. However, to meet picloram's label requirements 2,4-D must be added to the mixture, and sicklepod plants must be present in the cane block.
When spraying 2,4-D, buffer zones restrictions apply. Refer to the product label.

REFERENCES
Balsam pear (*Momordica charantia*) fact sheet - Invasive plants (weeds) - Publications | Queensland Government