

## *Imperata cylindrica*

Im-per-AY-tuh sil-IN-dree-kuh

Named in honour of Ferante Imperato (1550-1625) of Naples, an apothecary and author of natural history



When new exotic species of plants are introduced 'to enhance' the environment, the consequences for the future of that specific ecosystem are seldom considered. Decades later the legacy of that poor judgement and management has to be dealt with in order to prevent the total degradation of the ecosystem.

Today we have a tremendous problem with Imperata Cylindrica (Cogon grass, Cotton Grass, Japanese Blood grass). Worldwide it is regarded as a very serious weed in tropical countries. It has also been identified as one of the ten worst weeds by the U.S. Department of Agriculture. It spreads by scaly rhizomes and can invade and over-run any disturbed ecosystem, including cultivated fields. It can also spread further a field by its wind-dispersed seeds.

The effect of cogon grass foliage and root residue extracts on germination and growth of a variety of plants were investigated in laboratory experiments. It was found that foliage and root residue extract reduced germination of various grasses and other seedling growth by as much as 96%. The results indicate that these extracts may

contain allelochemicals that may contribute to its invasiveness and extreme competitiveness.

Cogon grass was possibly first introduced to Steenbok Nature Park for land reclamation or to combat soil erosion. It has spread extensively over large parts of the Park and the danger exists that it will become the dominant species on the Northern Shores of the Island. A small area near the Indigenous garden was cleared and 'treated' a few months ago and rehabilitated with endemic species, to form an extension of the indigenous garden on the other side of the path.

It is obvious that similar intense rehabilitation can't be done on the rest of the Park as the areas are too vast. We have obtained preliminary advice from Mark H van Niekerk, Stewardship Extension Officer of Garden Route Initiative and, with his consent, abstracts from his report are printed below.

Further advice will be sought from Mark, and if necessary others, in formulating a focused management plan.

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## **MANAGEMENT OPTIONS**

*With thanks to Mark H van Niekerk, Stewardship Extension Officer of Garden Route Initiative*

An integrated approach to cogon grass management, including chemical, mechanical and cultural methods, is necessary to achieve successful, long lasting control. Effective management of cogon grass has been achieved by the following combined mechanical-chemical protocol. First, the infested area is mowed in late spring to remove last year's growth and the accumulated thatch layer. About six to eight weeks later, when about eighty percent of the cogon grass has re-sprouted to a height of 6-12 inches, the site needs to be disced as deeply as possible. [Discing may not be possible in all areas, due to the sensitive nature of some ecosystems]. When adequate re-growth of the cogon grass has occurred, systemic herbicides (chemicals are carried through the plant tissues to the roots) are applied.

The best time to apply herbicides is in the early fall before first frost. A 2% solution of glyphosate (e.g., Roundup®) is recommended in areas that will be immediately re-vegetated, because glyphosate has no residual soil activity. Re-vegetation may be necessary following herbicide treatment, to prevent soil erosion and to help reduce re-infestation by cogon grass. For roadside areas, re-vegetation with bahia grass and bermuda grass have been used successfully for these purposes. In natural areas, the choice of which species to use for re-vegetation becomes more difficult. For some areas, assisting the process of natural re-vegetation succession may be the best choice. Once decisions are made regarding the ultimate goal of the restoration project, re-vegetation plans should be made accordingly. Regardless of the goal, the area should be re-vegetated quickly to allow a stable plant community to be established. Lastly, it is important to exercise diligence, as it will be necessary to scout areas that have been

treated for cogon grass and spot treat new plants with herbicides. It may not be possible to use all of the methods prescribed above in every situation, but most effective control will be gained by using as many of the steps outlined above as possible. In areas where burning, mowing, or discing, are not possible, spot treatment with herbicides will help to control cogon grass. Revisit treated areas frequently and retreat with herbicides as necessary. The best time to begin a control program is late spring to mid-summer when cogon grass is experiencing peak growth. Some control measures, such as mowing and spot spraying with herbicides, can be implemented year round.

Burning has also been used successfully in controlling cogon grass. As with mowing, burning stimulates the growth and spread of cogon grass, making follow-up control a necessity. If you are interested in attempting this technique, contact management specialists for more specific information. Also, be sure to obtain all required permits before attempting a burn even on small infestations (<http://www.nps.gov/plants/alien/fact/>).