Water Hyacinth and Its Uses

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Fern Yocum with the Mennonite Central Committee (MCC) in Bangladesh asked about using water hyacinth as ruminant feed at the small farm level. MCC uses water hyacinth stems to make handmade paper in rural women's job creation programs. Fern asked about nutritional content of the leaves.

The following is taken from the book Water Hyacinth (1987), by Brij Gopal at the School of Environmental Studies, Jawaharlal Nehru University, New Mehrauli Road, New Delhi 110067, India; Elsevier Publs., Science and Tech. Division, PO Box 330, 1000 AH Amsterdam, NETHERLANDS. 471 pp. This excellent resource covers every imaginable issue or idea related to this plant!

A few thoughts collected from this book and others: cattle and water buffalo will browse water hyacinth leaves when other feeds are not available. Some countries even cultivate water hyacinth for its feed uses. It seems to be comparable to other forage plants in many nutrients. It is high in iron and sodium. However, it is up to 95% water fresh weight, has low digestible protein, rapid spoilage, and is costly to dry.

Because of the high water content, animals may actually lose weight eating it, so it is often mixed with paddy straw and linseed or mustard cake. Major costs are related to drying/chopping/processing, which are best done at the site of growth. Making silage of water hyacinth has been tried, but with little success (low palatability and expensive above-ground silos).

Feeding results from many countries have shown everything from moderate to very low palatability. Some milk yields were increased but the butter was not usable (poor flavor and consistency). Most animals just maintained or lost weight on a water hyacinth diet. There are few reports of toxicity, despite the high content of anti-nutrients. Nearly every successful study used dried material (chopped, pressed, sun-dried). It may be an acceptable feed for pigs and rabbits but is not suitable for poultry.

Using water hyacinth for compost or fresh as a soil amendment is also discussed in the book. Positive reports on composting water hyacinth are provided from several countries, however, some cases showed reduced crop yields, perhaps due to high KCl content of the compost. One study cautioned against using water hyacinth compost, as its carbon to nitrogen ratio may be as high as 35:1. While the nutrient composition of water hyacinth compost is quite variable, often imbalanced, it probably merits small-scale trials.

[Note: I have seen massive-scale vermicomposting of water weeds in northern Ecuador. Plants were collected from a lake approximately 2700 m in elevation which catches all the runoff from excessively-fertilized mountainsides in the area. I'm not sure which species were growing, but it is clear that through them farmers were harvesting some of the wasted fertilizer. The vermicomposting process allowed them to produce high-quality fertilizer, some of which was even exported to Colombia for the cut-flower industry, requiring only about 2-3 months in a cold climate. Excellent drainage systems would be needed in using any water weed; I believe the drainage water from these compost bins was used to irrigate vegetable beds.]

For those of you living in areas where water hyacinth is plentiful, I highly recommend studying this book before experimenting with uses for the plant. It has valuable information and is by far the most comprehensive review I have seen on the topic.

 http://edn.link/n9zrp6