**Developing Countries Farm Radio Network**

Pack 13, Item 6

Type: Script

Date

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**Water hyacinth, good low-cost animal feed**

Information on this subject area was requested by DCFRN Participants in Argentina, Belize, Bolivia, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, Guatemala, Guyana,India, Liberia, Nigeria, Palau, Papua New Guinea, Paraguay, Philippines, Tanzania, and Zimbabwe.

Presenter: George Atkins

Interviewee: Den Sang Hua, a farmer, Fujian Province, People's Republic of China

Interpreter: Lei Qi Shi, Chinese People's Association for Friendship with Foreign Countries (CPAFFC), Fuzhou, Fujian Province, People's Republic of China

**Special notes**

1. Water hyacinth, the weed discussed in this item, may be known to the farmers you serve by a different name. For your information, the scientific name is *Eichhornia crassipes*.

2. VERY IMPORTANT: Water hyacinth is a very bad water weed. People have found it impossible to control; so no one should ever start growing it in a new location. The information in this item should only be passed on to farmers in areas where this bad weed is already established.

3. Before using the information in this item, please read the Notes 1 and 2 at the end.

**Suggested introduction**

We at this radio station are part of a worldwide information network that gathers farming information from developing countries all over the world. It's the Developing Countries Farm Radio Network, sponsored by the Canadian International Development Agency, Massey Ferguson, and the University of Guelph.

Through this Network, we bring you information on ways to increase food supplies for your family, or to sell—ways that other farmers have used successfully.

Today we'll hear about a kind of livestock feed that you don't have to plant or cultivate. Here's George Atkins.

**ATKINS:** The livestock feed I'm going to talk about today will cost you no money because it just grows by itself!

Now if you live near a lake, a pond, a river or stream where the water weed called "water hyacinth" grows, that's something you could harvest and use for animal feed.

There are farmers in Africa, Asia, and Central and South America who feed water hyacinth to their animals every day of the year. Then there are some who use it this way only in very dry weather, when they haven't much feed of other kinds for their animals. Some people make silage out of it as part of what they feed their cattle every day, some people dry it in the sun before feeding, and others feed it in various other ways. They use it to feed not only to cattle but to pigs, ducks and other poultry, and even to fish. The kind of animal that likes it best and that can eat the most water hyacinth is the water buffalo. So if you keep a water buffalo,remember that.

Bashir Hossain, a farmer in Bangladesh, tells me that in his country when there's not enough fodder such as hay and straw for the cattle, his neighbours cut off the upper leafy part of the plants and use that for feed.

Now the leafy part of the water hyacinth has a lot of water in it—so much, in fact, that if you could squeeze all the water out of 100 kg (or 100 lbs) of water hyacinth, you'd have only 5 kg (or 5 lbs) left of green fodder. What's left would, however, have some   
very good protein in it and protein is a special kind of food that all animals need to stay strong and healthy.

Now Bashir says that his neighbours who feed water hyacinth to their cattle don't try to dry it or squeeze out the water before they feed it, but they do something else to it. He says they cut it into pieces 3 to 5 centimetres (1 to 2 inches) long with a sickle or knife. They then mix this cut-up water hyacinth with dry rice (paddy) straw; —and that's very important when you feed thiswater weed to cattle. You must mix something with it so the feed won't be so wet, and dry straw is good to use. The reason you have to do this is because cattle can get sick if they eat too much feed that has a lot of water in it.

There's one more thing that Bashir's neighbours mix with water hyacinth and dry straw—that's a small amount of oilcake. Oilcake, of course, is a manufactured feed that they buy.

Now I'll tell you the proportions of those three feeds that they mix together to make up the ration or mixture of different kinds of feed for their cattle for one day:

\* 25 kilograms (or 25 pounds) of cut up water hyacinth

\* 5 kilograms (or 5 pounds) of dry rice (paddy) straw and

\* 1 kilogram (or 1 pound) of oilcake or similar protein concentrate feed

If you decide to try feeding this ration to your cattle, you should know that you must not mix more feed at one time than they can eat at that feeding. If you mix up more than you need, the feed could go bad.

Once again, I must mention that Bashir Hossain says that the kind of feed I've been talking about can be fed to cattle during the dry season when supplies of other forage are scarce. He also reminds us that water hyacinth is a feed for cattle that costs you nothing. So by feeding it as part of your cattle ration, you can save money.

Now I mentioned earlier that some farmers feed water hyacinth to their pigs. Not long ago when I was in China, I talked with a farmer, Den Sang Hua, of the Wu Village Commune in Ninghua County of Fujian Province. With the help of my interpreter, Lei Qi Shi, Ifound out exactly how Den and his wife gather and prepare water hyacinth for their two pigs that were about six months old when I saw them.

First I must tell you that Den and his family live beside a lake. Just by the shore, floating on the water, they have a square frame made of sturdy bamboo poles. It's about 3-1/2 metres (12 feet) square. Their water hyacinth is only allowed to grow inside that frame. They've made it just the right size to grow the amount they need for the two pigs they keep. Their water hyacinth is all quite young so they don't just cut off the top growth like farmers do for cattle in Bangladesh. Den uses the whole plant.

Well, Mrs. Den and I went over to the shore and we just dipped our hands into the water and scooped up four big double handfuls of water hyacinth into a bucket. We had another bucket of fresh water and we used it to wash any dirt, sand, or other material out of theforage we had collected. We then took this back to the house to chop it up for feeding to the pigs.

*In the house, I recorded this:*

We're now in Den's kitchen and he has his chopping block. The chopping block is actually a section of the end of a log. It's about 8 centimetres (3 inches) thick. And now Mrs. Den is chopping it up. She has a big knife and she's chopping it.

SOUND OF CHOPPING

She's just cutting the whole water hyacinth into pieces, including the roots, the finer the better. We usually cut it into pieces about 1 square centimetre (1/2 an inch) in size.

**ATKINS:** All right, now that it's all chopped up, what is the nextstep?

**LEI:** Now they put it into an iron pot in which there is boiledwater and rice.

**ATKINS:** Now that's important—but they do it three times aday—morning, noon, and night—and each time, before chopping up a new lot of water hyacinth, they boil up rice in a big iron pot.

Here are the amounts for one feeding for two pigs.

One double handful of rice—that's about half a kilogram (1 pound) of rice. It's boiled in water in a big iron pot for half an hour. Then into the boiled rice in boiling water, they put four double handfuls of chopped-up fresh water hyacinth. They then boil this mixture for five minutes.

*Field recording begins*

See right now, it's in the big pot, it's been mixed up, it's been boiled, it's very hot, how do they take it out of there and feed it to the pigs? He's lifting it out with a big metal dipper, and then he puts it into a wooden bucket.

**LEI:** And then we put some cold water into the bucket so thetemperature will go down to 30 degrees (centigrade) (75 degrees Fahrenheit).

**ATKINS:** So you can put your hand in it and it's not too hot forthe pig. All right, now, we're here in the pig pen, looking at the pigs and they're putting the chopped-up water hyacinth pig feed inside the pen for the two pigs. So do the pigs eat it out of the bucket or a trough?

**LEI:** A wooden trough.

*Field recording ends*

**ATKINS:** Now it so happens that in this part of China, waterhyacinth doesn't grow in the winter time. But in spite of that, this water weed, that is hated by people all over the world, provides well over one-third of this farmer's pig feed.

*Field recording begins*

**LEI:** Water hyacinth accounts for 40% yearly.

**ATKINS:** It just shows, then, the value that water hyacinth can befor a farmer here in China.

I want to thank you very much, Mr. Den Sang Hua, here at the Wu Village Commune in Ninghua County—also our interpreter, Mr. Lei Qi Shi, here in the People's Republic of China.

Serving Agriculture, the Basic Industry, this is George Atkins.

**Notes**

1. In this item, protein and its importance in nutrition is mentioned. If the farmers you serve are unlikely to know about protein, we recommend that before using this item you repeat tothem the information in another DCFRN Item. It is:

Protein, a Basic Food and Where It Comes From - DCFRN Package 5, Item 2.

2. This item could be split into two separate shorter items:

The use of water hyacinth for cattle feed.

The use of water hyacinth for pig feed.

In addition to the information on feeding water hyacinth to pigs that was provided by the interviewee in China, other information came from the following DCFRN participants:

Bashir Hossain, Bangladesh

Rathindranath Roy, India

Jaime Alip, Philippines

Fumio Kitsuki, Japan

Inocencio Obrero, Philippines

Paulino Onal, Philippines

Thor Orig, Philippines

Ramon Salire, Philippines

C. Sriskandaraja, Sri Lanka

D.A. Mawazo, Tanzania

We are aware that there are other good uses for this water weed that is such a pestilence in the waters of many of the warm countries of the world. We are now planning a future DCFRN item on the use of water hyacinth as a fertilizer, mulch, soil conditioner, etc. We will welcome practical detailed information on these and other uses.

**Information sources**

1. Making Aquatic Weeds Useful: Some Perspectives for Developing Countries, (1976, 175 pages), published by National Academy of Sciences, Washington, D.C., U.S.A. Downloadable at: https://www.nap.edu/catalog/19948/making-aquatic-weeds-useful-some-perspectives-for-developing-countries