Sent: Wednesday, April 17, 2002 10:17 AM
Subject: NEWS ON ATRAZINE--COMMON PESTICIDE

Dear Aquathin Dealer OnLine and Splash Member:

This most important news and quick read article discusses the mutating effects of atrazine, a common pesticide used for decades. The effects as you will note in bold below, are at 600 times reduced concentration than EPA regulations for humans. There are two major issues of concerns not discussed. ***(1) Mr. Hayes said humans are not in water all the time. He has not discerned if the mutating was from skin exposure or ingestion or both. We do know that ingestion presents immediate and profound results versus skin or inhalation exposure in most cases concerning toxic materials. (2) In earlier NewsBulletins we discussed that there are thousands of contaminates found in drinking waters. According to the AMA book entitled Drinking Water and Human Health (text used at Aquathin University), the effect of the chemical cocktail can be 1000 times more detrimental than the each individual contaminate.***

Atrazine, like the quick read yesterday on MTBE is most everywhere. Need another reason to say I love my Aquathin ?!?!?!?!?! Please print and copy for continued education of your staff.

Warmest regards to all,

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"Alfie"
Alfred J. Lipshultz, President

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U.S. National

Pesticide Blamed for Frog Mutations

Mon Apr 15, 5:17 PM ET

By RANDOLPH E. SCHMID, Associated Press Writer

WASHINGTON - Male frogs exposed to even very low doses of a common weed killer can develop mu
organs — sometimes both male and female — researchers in California have discovered.

"I was very much surprised," at the impact of atrazine on developing frogs, said Tyrone B. Hayes of the
of California at Berkeley.

Atrazine is the most commonly used weed killer in North America, he said, and can be found in rainwat
runoff and ground water.

"There is virtually no atrazine-free environment," Hayes said.

The Environmental Protection Agency (news - web sites) permits up to 3 parts per billion of atrazine in
water.

But Hayes' team found it affected frogs at doses as small as 0.1 part per billion. As the amount of atrazin
increased, as many as 20 percent of frogs exposed during their early development produced multiple sex
had both male and female organs. Many had small, feminized larnynxes.

Hayes' research team concluded that the effect on the frogs results from atrazine causing cells to produce
enzyme aromatase, which is present in vertebrates and converts the male hormone testosterone to the fe
hormone estrogen.

**The effects on frogs in Hayes' study occurred at exposure levels more than 600 times lower than th
has been seen to induce aromatase production in human cells.**

Their research is reported in Tuesday's issue of Proceedings of the National Academy of Science.

Asked if atrazine might also be a threat to people at low levels, Hayes said he did not know, adding that,
frogs, "we're not in the water all the time."

"I'm not saying it's safe for humans. I'm not saying its unsafe for humans. All I'm saying is it that it make
hermaphrodites of frogs," he said.

**Stanley I. Dodson of the University of Wisconsin at Madison called the work "the most important
environmental toxicology in decades.**

**"It shows the effect of the most commonly used herbicide on amphibians in environmentally relev
concentrations," he said.**

Asked if people should be worried, he also said: "We don't know."

"It's like a canary in the mine shaft sort of thing," Dodson said, referring to the former practice of miners
bringing canaries with them as warnings of dangerous gases. The birds are very sensitive to gases and w
before the concentration of the gas was enough to harm the miners.

Dodson said that in his research he had found that low exposures atrazine changes the ratio of males to f
among water fleas.

In addition to its effects on developing frogs, the Berkeley researchers found that male frogs exposed to
after reaching maturity had a decrease in testosterone to levels equivalent to that found in females.