



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

MAY 13 1998

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: Isoxaflutole: Aquatic Plant Risk Assessment

FROM: Michael Davy, Agronomist
Environmental Fate and Effects Branch (7505C)

Thru: Elizabeth M. Leovey, Chief
Environmental Risk Branch II
Environmental Fate and Effects Branch (7505C)

TO: Joanne Miller, PM-23
Registration Division (H7506)

Lemna gibba, a duckweed, is a very primitive vascular plant and the only aquatic vascular plant species tested under guideline 123-2. It is the key species to assess risk to non-target aquatic vascular plants. Most of the vascular aquatic plants (submerged, emerged and rooted) used as habitats by aquatic animals have a higher (non-primitive) type of vascular system. To have duckweeds represent higher vascular plants creates uncertainty in our risk assessment. Therefore, EFED's certainty for risk to vascular aquatic plants using *Lemna gibba* as a surrogate is low in light of using this one species to represent thousands of others.

On table 31 on page 37 of the science chapter, a decimal place error was recently discovered for determining aquatic plants RQ. The exposure from parent isoxaflutole was incorrectly recorded as 39 ppb when it should be 0.39 ppb. In addition, after recent submission of plant and fate studies, EFED has recalculated the exposure. Since the parent degrades rapidly to the intermediate degradate, RPA 202248, EFED's main concern is with the phytotoxic intermediate degradate. The peak exposure (PRZM-EXAMS) for aquatic plants is 2 ppb for the intermediate degradate. The *Lemna gibba* EC₅₀ = 4.9 ppb. The RQ is calculated as 0.4, which is below our Level of Concern for aquatic non-target plants.

The risk quotient (0.4) alone may say there is minimal risk to non-target aquatic vascular plants. However, EFED cannot rule out risk to submerged and emerged aquatic vascular plants (that may be rooted in sediments). Additional non-guideline testing using these submerged and emerged aquatic vascular plants could help reduce the level of uncertainty regarding sensitivity of aquatic plants and the potential impact that isoxaflutole may have on aquatic ecosystem.