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PP# OF2277. Naphthaleneacetic Acid in apples, pears, and olives

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THRU:Richard D. Schmitt, Acting Chief, RCB, HED (TS-769)

The Toxicology Branch has deferred to RCB on the need for showing that α -naphthaleneacetic acid (NAA) is primarily formed from the ethyl ester of NAA in plants and animals. The question is addressed below.

No studies are submitted which show whether NAA is primarily formed from the ethyl ester of NAA in plants and animals. However, studies are available which show that the closely related methyl ester of NAA is converted to NAA [J. Ag. & Fd. Chem., 10, 199 (1962)]. Potatoes were treated with the methyl ester of NAA and stored for periods of 0-90 days. Analyses of the potatoes showed the presence of NAA as well as the methyl ester. The study indicates that NAA is formed from the methyl ester through hydrolysis.

In view of the showing that the methyl ester is converted to the free acid, NAA, it is reasonable to conclude that the closely related ethyl ester of NAA is also converted in plants to the acid, NAA. It is further reasonable to conclude that animals could also hydrolyze the esters of NAA to the acid form, NAA.

The residue method determines both NAA and its ethyl ester as separate components.

The questions raised by TOX were not pursued in our initial review (memorandum 1/8/80, A. Smith) since no real residues of NAA or its ethyl ester were expected in the subject crops or the feed item, apple pomace. (The proposed use entails treatments which are not likely to result in residues in the subject crops.)

We believe that the foregoing adequately responds to TOX's deferral and resolves the questions raised.

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