Cole – Notes from GRI meeting 10/13
Anything here of interest?

THE PCB PROBLEM-CURRENT STATUS

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The property which caused PCBs to be selected for many uses, high stability under a number of conditions, has led to its accumulation in the environment. Substantial quantities of PCBs find their way to the aquatic environment, ultimately residing in sediments and frequently in fish. Because PCBs concentrate in fish and this constitutes a way in which PCBs are consumed by humans, several studies have been done on the disposition of PCBs in fish. It was shown that about 70% of dietary Aroclor 1254 was taken up by rainbow trout and that subsequently this PCB body burden was not lost by the trout even during fasting. Another study in rainbow trout with a tetrachlorobiphenyl showed that this PCB was lost very slowly by the trout except during spawning when the PCB was transferred from fat depots to milt and eggs and was subsequently eliminated from the adult fish. Trout eggs and sac fry lost this tetrachlorobiphenyl only slowly, but following complete yolk sac disappearance, it was lost much more rapidly.

Data from mouse and human show little transfer of PCBs from mother to fetus, but substantial elimination of PCBs from the mothers via milk. In the study with mice the nursing young accumulated essentially all of the mothers body burden of a PCB in 3 weeks. In the human study a woman with known workplace exposure to PCBs did not nurse her child but secreted 200 mg of PCBs in breast milk during 18 months.

Data from the U.S. Department of the Interior and the Wisconsin and Michigan DNRs indicate that PCBs still are found in fish from most areas sampled in the U.S., but that levels in "hot spots" such as the Great Lakes are not as high as previously.

PCB Status

Aroclor: 1254, 1260 are the ones now found, is more cl, more stabl.
Fish don't readily metabolize higher cl cpds
Doesn't clear from fish body - even on fasting such that body wt ↓
  └ t½ to clear is 1.76 yr.
But egg laying does rid body - accumulating in eggs or in sperm
Some with mice - nearly all mothers PCB is transferred to litter via milk
Was also duplicated in human mother - substantial loss via milk
PCB level in freshwater fish - 1 ppm Avg 1974 - 1979 with no year by year change. Incidence is 93-98%
Lake trout, lake Mich. 16 - 20 ppm 1971-74 } clear, year by year decrease
  8 " 78-79
  2.6 " 1980
Bloaters, lake mich 6 ppm 1972 } steady decline year by year
  2.2 1980
Thinks hi PCB sediment is being covered in lakes
Limit in Canada is 2 ppm, U.S. 5 ppm for edible fish