hepatoma induced a change in the fatty acid composition of several lipid classes. These studies demonstrate the changes that occur in plasma and liver lipids of hepatoma-bearing animals as functions of time. The data indicate that the hepatoma affects the lipid metabolism of the host animal well in advance of visual signs of tumor growth.

High Performance Liquid Chromatography of Glycolipids from Wheat Flour Polar Lipid Fractions: Determination and Physico-Chemical Characterization. **T.N. Tweeten, D.L. Wetzel,** and **O.K. Chung,** Kansas State University, Manhattan, KS.

A high performance liquid chromatographic method for analysis of digalactosyl diglycerides (DGDG) in wheat flour polar lipids has been developed. Mass spectrometry, chromatographic analysis, and wet chemical methods were used to elucidate the chemical composition of fractions collected from the chromatogrphic separation. Thin layer chromatography gave only one spot for digalactosyl diglycerides. The separation on nonpolar, bonded phase columns has permitted the analyst to differentiate components within a specific lipid class based on fatty acid composition and stereospecific structure. High performance liquid chromatography was selected for analysis of wheat glycolipids, as it requires no sample preparation beyond solvent extraction and fractionation. The nonpolar bonded phase column (octadecyl silane) with a methanol/water elution system showed the greatest promise. The detection limits of the refractive index detector with interferometric optics compared well to the variable wavelength detector at 200 nm. Analytical and semipreparative high performance liquid chromatography was used to subfractionate the polar lipids. The glycolipids were collected for functional group characterization. Approximately 35% of each DGDG subfraction was accounted for as carbohydrate. Absence of phosphorus precluded phospholipids. Gas chromatographic analysis showed that the fatty acid composition of the first DGDG peak was linoleic acid, while the second DGDG peak was mainly linoleic and palmitic acid. Mass spectrometric analysis of the first DGDG peak showed that the linoleic acid was on both the SN-1 and 2 positions. In the second DGDG peak, mass spectrometric analysis revealed that the palmitic acid is preferentially located on the SN-1 position and linoleic acid on the SN-2 position. ●

New palm oil R&D unit formed

The Malaysian government has formed a new Palm Oil Research and Development Authority, identified by the Acronym PORIM, to direct all aspects of palm oil research and marketing.

The association specifically is directed "to conduct and promote research into production, extraction, processing, storage, transportation, marketing, consumption and uses of palm oil and oil palm products," and "to coordinate activities within and outside the Federation (of Malaysia) relating to research, development, publicity and other matters affecting the oil palm and palm oil industries."

Address for the new unit is: Palm Oil Research and Development Authority, 18th Floor, Bangunan Angkasa Raya, Jalan Ampan, Kuala Lumpur, Malaysia. ●

One billion bushel soybean crush

Soybean crushing in the United States for the 1978/79 crop year should reach a record one billion bushels, the U.S. Department of Agriculture forecasts.

The record crush reflects strong demand for soybean meal, as livestock numbers on feed have been higher this year as well as the unavailability of Brazilian soybeans and soybean products during the first half of the marketing year (October-September). Crushing margins in the final quarter of calendar 1978 were averaging 44 cents a bushel compared to 27 cents a bushel a year earlier, the USDA said.

Meanwhile, apparent consumption of fats and oils in the United States apparently reached 57 pounds per person for the 1977-78 marketing year, up three pounds from 1976/77 and a pound above the previous record high in 1975/76. Consumption for 1978/79 was forecast to be around 57 pounds per capita.

USDA statistics for 1978/1979 forecast sharp rises in domestic disappearance of edible tallow and sunflower oil. Edible tallow disappearence, for example, is forecast at 800 million pounds, compared to 769 million pounds in 1977 and 534 million pounds in 1976. The National Renderers Association's Jack Crouse says the increase is attributable not only to rising production of edible tallow, but also to improved reporting methods by the government, which is receiving reports from more producers than it was a few years ago. The sunflower oil consumption for 1978/79 is forecast at 250 million pounds, compared to 120 million pounds in 1977/78 and 26 million pounds in 1976/77.

Total usage of the 1978 U.S. soybean crop of 1.843 billion bushels was estimated by USDA to use up all but 160 million bushels before the 1979 fall harvest. That would be about the same amount of soybeans left in the U.S. when the 1978 harvest had begun.

The next question is how big the U.S. 1979 soybean crop will be. In January, U.S. farmers indicated they would plant 66 million acres of soybeans, about 4% more than in 1978; corn acreage intentions were pegged at about 80 million acres. In early March, Secretary of Agriculture Bob Bergland said that farmers might plant more soybeans than indicated in the January report. He said farmers might plant about 70 million acres of soybeans and that soybean acreage would surpass corn acreage.

TABLE I
Selected Crude Vegetable Oil Production
(Millions of Pounds)[a]

	1977	1978
Soybean	8,836.5	10,520.3
Cottonseed	1,254.5	1,416.9
Peanuts	253.5	148.7
Corn	671.9	718.8

[a]Source: U.S. Department of Commerce (figures not seasonally adjusted).

TABLE II
Fats and Oils Consumption
(Millions of Pounds)[a]

	1977	1978
Edible oils (total)	10,659.9	11,373.8
In baking or frying fats	3,854.5	4,063.9
In salad or cooking oils	4,358.3	4,862.6
In margarine	2,025.8	1,993.9
In other edible products	421.2	453.4
Inedible oils (total)	5,694.8	5,896.1

[a]Source: U.S. Department of Commerce (figures not seasonally adjusted). ●