



EDIBLE OILS—A Venezuelan weighs oil-rich palm nuts collected by the FAO mission to Venezuela.

AGRICULTURE

Amazon Rich in Food Oils

➤ VAST untapped sources of oils for margarine, cooking fats and soaps lie in the wild forests of the jungles of Venezuela, a mission of the Food and Agriculture Organization of the United Nations discovered in a survey made at the request of the government of the South American country.

FAO scientists estimate that if all the edible oil in the Amazon region could be harvested, it would suffice to supply the entire world.

Instead edible oils are one of the crucial shortages in the world's food supply. Even Venezuela, rich in palms, coconuts and other sources of edible oils, imports much of its requirements.

That country already cultivates oil palms, but the wild regions are rich in unharvested nuts. Part of the FAO mission's job was to advise on better methods of growing the cultivated palms and extracting the oils.

The people are quite enterprising in cultivating the plants. They are growing coconuts and African palms and are beginning to cultivate sesame, sunflowers, peanuts, castor beans and others. The mission made a special study of cultivation of the African palm. Another species is the American oil palm, close cousin to the African palm, which grows

wild in large numbers from Brazil to Central America. One of the special features of the American oil palm is that the oil extracted from the fruit-pulp is very rich in vitamin A.

The jungles of the tropics were surveyed from the air. Aerial photographs of specific areas were taken, from which the palms could be recognized and accurately counted.

The mission made expeditions into the jungle by boat and jeep to identify the species and to gather sample nuts. From these specimens, scientists could estimate the annual production of the fruit per palm, the weight of the fruit, the percentage of oil in each fruit and the exact chemical content of oil in the nut. With these figures, estimates can be made on just how much oil lies in the tropical palm groves.

If the Venezuelans go ahead and tap these large resources, they must solve many problems. These include labor supply, health conditions and transportation. Machines will be needed to crack the hard shell surrounding the oil-bearing pulp. New methods of extracting the oil are being investigated.

New supplies of edible oils for a hungry world may come from today's wild jungles.

Science News Letter, June 12, 1948

AERONAUTICS-ENGINEERING

New Airplane Ice Detector Gives Pilot Danger Signal

➤ GREATER safety for private airplanes is promised in a new carburetor ice detector revealed by the Lindberg Instrument Company, Berkeley, Calif. When dangerous ice begins to form in the engine fuel induction system, a neon light flashes on the instrument board.

This gives the pilot ample warning in time to turn on his preheater, and thus avoid the danger of engine choking and a crash landing. The ice-choking of engines in flight is not a rare occurrence. Over one-fourth the engine failure accidents in planes during 1946 were due to icing conditions, according to the U. S. Civil Aeronautics Board. These occurred principally in the light plane field, and might have been avoided if the new device, which costs less than fifty dollars, had been available.

This Lindberg ice detector uses a so-called pick-up probe properly placed in the fuel induction system where the dangerous types of ice form. The energy required to power the ice detector is secured by electrical action from one of the spark plug leads, captured by slipping a piece of metal braid over the lead.

This energy is fed to a radio-frequency transformer which selects only the very high frequencies in the spark current and couples this energy to a balanced bridge circuit containing two condensers. One of these is a neutralizer, the other the ice probe itself. When ice forms on the pick-up probe, the circuit becomes unbalanced, and the warning flash results.

Carburetor ice can form at temperatures as high as 85 degrees Fahrenheit in clear weather, according to John Lindberg, Jr., one of the inventors of this device, and also the inventor of a well-known engine analyzer for multi-engine aircraft. The outside air temperature and moisture content are important factors, but when fuel is introduced into the airstream of aircraft induction systems, the vaporization of the fuel and other actions may cause as much as a 55 degree temperature drop.

This new ice detector has been subjected to laboratory and flight tests. Present models have been developed to use with Continental engines, widely used in private aircraft, but other models will be available soon for other engines.

Science News Letter, June 12, 1948