

the centralization of the operations at one point with the assurance of continuous production, whereas production of butadiene and styrene from an alcohol base would be contingent on a ready supply of tankers and tank cars.

By extending the cracking facilities of one of Canada's largest refineries, it was found possible to obtain the desired quantities of three gases for which a limited use had previously been found, namely, ethylene, isobutylene and butylene, on a relatively low cost basis. These gases are then transferred by pipeline to nearby styrene, Butyl and Buna-S copolymer plants, without costs, complications, difficulties and dangers which might be involved in their transportation by tank cars. The main raw material in the production of Butyl rubber is isobutylene, a basic gaseous hydrocarbon collected directly from the refinery-gas stream and polymerized directly into synthetic rubber. At the present time, Butyl rubber is not suitable for the outer casings of tires, since it does not withstand abrasion, but it is more suitable than Buna for certain other commercial uses. Practical applications of Butyl rubber have been comparatively few since there had never been a pound of Butyl made in Canada outside of laboratories and pilot plants before the fall of Singapore.

In the production of synthetic rubber from wheat the method most widely discussed was to produce alcohol and then to make butadiene from the alcohol. It has been estimated that the cost of production of industrial alcohol from grain at 80 cents a bushel would be from 50 cents to 60 cents a gallon, with the cost of conversion alone estimated as approximately 15 cents to 17 cents a gallon. When other costs are taken into account it would require that, as a practical proposition, grain be purchased at a price from 25 cents to 30 cents a bushel. The production of butadiene from a petroleum base does not, however, preclude the possibility of using an alcohol base at some future date should it be found economical and advisable to do so. It is estimated that a gallon of alcohol yields approximately 2.75 pounds of butadiene, and that the theoretical yields of butadiene from alcohol

Rubber  
and  
Wheat