

LAW OFFICES
PACKARD BUILDING, PHILADELPHIA

L. STAUFFER OLIVER
ISADORE STERN
RAYMOND DE S. SHRYOCK
SAMUEL A. ARMSTRONG

WASHINGTON OFFICE
815-15TH STREET, N.W.
IN ASSOCIATION WITH
PALMER, STELLWAGEN & SCOTT

May 16, 1933

Hon. Wm. H. Woodin,
Secretary of Treasury,
Washington, D. C.

Dear Sir:

The Farm Products Chemical Company of America, proposes to manufacture alcohol for motor fuel purposes from domestic farm products under the Amylo process as perfected by Dr. Henry Arnstein of Philadelphia, recovering all by-products. We wish to submit the following statement showing the value of alcohol in motor fuel as a direct method of farm relief, the value of alcohol in improving the qualities of gasoline and the ability of manufacturers to produce alcohol at a price low enough to enable it to compete with gasoline, thereby giving the motorist a better fuel at no increase in cost and at the same time relieving our farm situation.

There is no solution for the American farm problem but to develop an increased domestic use of our farm products.

The best and by far the simplest plan offered in this Country for immediate and permanent relief of our farm situation is the proposal to require the use in motor fuels of a certain percentage of alcohol, made from American grown farm products. Note that this is the only proposal for farm relief which actually CONSUMES, in contradistinction to proposals which curtail production. It not only can take care of normal production in the future, but can attack immediately the huge existing surpluses. This plan is successfully being used in many foreign countries.

Experiments conducted by United States Government Bureaus, University Research Departments, industrial groups and other research organizations show that 199 proof anhydrous alcohol made from farm products, when blended with gasoline in proportions up to 20% of alcohol, adds very materially to the quality of the motor fuel. The experiments, conducted over a period of years, establish the following advantages for the blended fuel as compared with high grade gasoline:

Alcohol is an excellent anti-knock agent, even better than benzol, and its addition to motor fuel results in greatly improved anti-knock qualities. The engine starts more readily at all temperatures on an alcohol blended fuel than on gasoline. The motor operates more smoothly, due to the fact that the alcohol causes a more prolonged and less violent explosion. The alcohol blended fuel has more power and pick-up. Alcohol in the fuel serves as a carbon remover and less-

ens the deposit of gum which is always present in gasoline. Engines operated on alcohol blends show lower temperatures at the cylinder head and at the exhaust valves, resulting in a saving in the use of motor oil. No changes in the engine and no adjustments of the carburetor are necessary. Pure alcohol will not separate from the gasoline and is beneficial rather than harmful to the motor. Parties interested in further details can obtain instructive and illuminating pamphlets issued by the Research Division of the Keystone Steel & Wire Company of Peoria, Illinois.

Tests, conducted by the Illinois Agricultural Association, show that a car operated on a 10% alcohol-gasoline blend, costing 18.6¢ per gallon, average 12.5 miles per gallon, at a per mile cost of 1.48¢. The same car operated on the same road trip on regular gasoline, costing 14.6¢ per gallon, averaged only 9.5 miles per gallon, at a per mile cost of 1.53¢. The same car operated on ethyl gasoline, costing 18¢ per gallon, averaged 11.2 miles per gallon, at a per mile cost of 1.60¢. This simple test showed that, even at a 4¢ premium, the alcohol blended fuel had a lower actual per mile cost in addition to its many other advantages.

However, the alcohol blended fuel can readily be made to sell at no increase in cost over gasoline.

The price of gasoline is low because the oil companies recover from their raw materials fuel oils, motor oils, lubricants and many other products in addition to gasoline. In fact, gasoline was originally a waste product and the oil companies had tremendous difficulties getting rid of it. The automobile furnished a new and unexpected market for this waste material. Virtually every other large industry today operates on a basis of recovering many by-products, all of which reduce the price of the main commodity. There is no reason why alcohol should not be produced upon this same basis. The principal by-products, in a properly and efficiently conducted alcohol plant, should be fusel oil, cattle feed, corn oil, yeast, carbonic acid and dry ice. Under an efficient operating management, these commodities would have such value that the alcohol could readily be produced and sold at prices to compete with gasoline.

From a bushel of corn, by the relatively inefficient methods of manufacture now in use, two and one-half gallons of alcohol can be produced. Corn has been selling this year at 12¢ to 15¢ per bushel. Even if this price were stepped up to 25¢ per bushel, the cost of alcohol, ignoring by-products, would be only 16¢ per gallon - 10¢ for the raw material and 6¢ for all other charges, including interest, depreciation, amortization, labor and management. Along with each gallon of alcohol, however, the producer would recover by-products worth very substantially more than the 16¢ cost involved. Even allowing for a sale of only a portion of these by-products, alcohol of the highest grade can be made and sold at a price as low as high grade gasoline.

Therefore the proposed bills to encourage the use of alcohol

as a gasoline blend for motor fuel purposes, by encouraging the erection and operation of efficient alcohol plants, will actually give the American motorists a fuel at least equal to the anti-knock fuels now being sold at a 3¢ premium and with no extra cost over and above the price of ordinary high grade gasoline. The statements issued by the oil company interests, giving fantastic figures of extra cost, are not accurate.

Approximately 17,000,000,000 gallons of motor fuel are sold annually in the United States. A 10% blend would require the use of 1,700,000,000 gallons of alcohol, which in turn would require 680,000,000 bushels of corn, or an equivalent amount of other farm produce, equal to more than 25% of the ordinary output of corn grown in the whole of the United States.

If a 10% blend is encouraged, it is estimated that the price of corn will be raised to a cent a pound, or 56¢ a bushel. The direct benefit to the farmers would be approximately \$380,800,000. The indirect benefit, by the increase in the value of other farm products, would be immensely greater. All of this benefit would react to the welfare of all our people. The motorist would have a far better fuel, giving greater mileage, free from carbon and with high anti-knock rating and, like every one else, he would benefit by the return of prosperity to the farm.

If it be pointed out that the price of 56¢ per bushel would add to the cost of the raw materials used for the manufacture of alcohol, the answer is clear. At the same time the cost of these raw materials increases, so also would the value of all of the by-products recovered during the process of manufacture, so also would the price of gasoline. No one can possibly imagine that gasoline is going to be sold to a prosperous country at the price the oil companies are now offering it. These things all figure out in substantially the same relation, so that no matter how the price of corn increases, we still maintain that alcohol can be made by proper manufacture to compete on even terms with gasoline, giving the motorist an infinitely superior fuel and at no additional cost.

Regarding the quality of the fuel, anyone can make a simple test. Take two white saucers. Put gasoline in one and alcohol in the other. Set each on fire. The gasoline burns with a yellow smoky flame. When the process is completed the saucer will be heavily coated with black soot. On the other hand, the alcohol will burn cleanly with no smoke. At the end of the process that saucer will be as clean as before the experiment was made. This is why gasoline causes carbon and alcohol tends to remove it.

At present only 3.75% of alcohol made in the United States is made from grain. The balance of our alcohol output is made chiefly from imported molasses. None of these companies recovers all of the by-products. Many recover none at all. The pressure of competition has not required the installation of the most highly efficient plants and methods. If, however, the proposed legislation is adopted, the

alcohol to be used will have to be made from farm products, grown within the United States, and a premium will immediately be placed upon the erection of efficient plants, equipped to recover all by-products. An immense amount of work will immediately be given to equipment manufacturers, builders and transportation companies and many thousands of workmen. Farm prices will immediately increase, as will prices in other industries, and the whole country will feel an immediate and substantial benefit. Furthermore, a permanent domestic outlet for surplus farm products will have been created to the lasting economic benefit of the entire nation.

There are other important phases of this matter. We are now in the early stages of a great era of chemical discovery and advancement. The past fifty years have been the age, first of machinery, and then electricity, but the present and the coming years are the age of chemistry. Important discoveries are being made and will be made, having an immense beneficial effect upon our whole standard of living, and welfare. Pure alcohol is the basic raw material of the chemical industry and an adequate supply is essential for the period we are now entering.

Furthermore the use of alcohol in motor fuels is an important step in making our country economically self-sufficient. Our oil supplies, great as they may seem, cannot possibly be inexhaustible. In fact, the fifth report published in October, 1932, by the Federal Oil Conservation Board states that, at the current rate of production, the equivalent of all our present known oil resources will have been withdrawn from their underground reservoirs in ten to twelve years. The oil companies are already importing from abroad both crude oil and gasoline. We have in this country only a small percentage of the world's petroleum stores, but we are extravagantly producing 70% of the world's petroleum output. Oil conservation is therefore an important item for consideration.

Bills now before the Congress impose an additional tax of only 1 cent per gallon on motor fuel which, prior to January 1, 1934, does not contain 1% of domestic alcohol and which, during the year 1934, does not contain 2% of such alcohol. After January 1, 1935, the additional tax is increased to 2 cents and the alcoholic content is raised to 5% per gallon. The motor fuel producers need not put alcohol in every gallon. They may, for example, put 10% in one-tenth of their output and none in the balance. Thus the proposed law is mild and it is flexible. In fact, it is so mild that it fails to accomplish the maximum amount of good. It should provide for a larger content of alcohol.

The motorist would be protected, because the maximum additional tax would not exceed 2 cents and he would have a superior fuel which, even at 2 cents additional cost per gallon, would cost him less per mile and would effect savings on lubricating oil and removal of carbon.

Even with a 10% requirement, the motor fuel producers would

be permitted to concentrate their alcohol in a portion of their output, giving it, for example, a 20% blend, which produces the very finest motor fuel, superior to the no-knock fuels for which many motorists now willingly pay a 3 cent premium.

But again, we repeat, alcohol when properly made, as it will be when this new demand has been opened up, can be made so cheaply no increase in price will be necessary, - in no event should it exceed 1 cent per gallon for a 10% blend.

Therefore, in this time of great national need, this thing should be done properly. The Congress should not be swayed by unsound arguments or propaganda. No other project offered this nation will accomplish so much at such slight cost. If the alcoholic content is stepped up to 1% until January 1, 1934, 5% thereafter until July 1, 1934 and 10% thereafter, such action would be eminently fair to everyone and would be certain and marvellously beneficial in its results.

Respectfully submitted,

FARM PRODUCTS CHEMICAL COMPANY OF AMERICA

By

J. Henry Crestler

President

L. Stanley Oliver

Mitchell Palmer

Counsel

Eno

Center for
Transportation