

# CONVERSION OF TODD INSECTICIDE FOG APPLICATOR FROM GASOLINE TO PROPANE AS FUEL

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The problems facing any mosquito control district attempting a program of adult mosquito abatement by chemical methods are many and varied.

Wind velocity and direction are problems. Temperature, humidity and things such as adequate access roads for ground equipment all tend to confuse the issue. However, these are things over which we have no control. One problem that has always faced our District is the failure of mechanical equipment to function properly when it is needed.

Surely, many a director of a mosquito control program has added grey hairs when, after promising numerous residents of an infested area that their area would be worked that night, he learns that the machine used for the work operated some 30 or 40 minutes, then suddenly required

two or three hours of field maintenance—and this just at the time when the work should have been in full swing.

Every mosquito control district which attempts an adulticiding program must encounter a problem of this nature, regardless of the type of equipment used.

The Lee County (Florida) Mosquito Control District operates nine Todd Insecticidal Fog Applicators (TIFAS) in a program designed to provide adult mosquito abatement throughout the major populated areas of the district.

These machines function admirably when they are kept in operation constantly—say 3 to 5 nights a week. But when they are reactivated after a period of inactivity, the trouble begins. Operating smoothly during stationary trials in the yard, the machines emit great clouds of fog. Move them, and what happens?

The gas jet in the combustion chamber becomes clogged. Well, you say, it takes only 10 minutes or so to clean it. But suppose the loss of heat is caused by a pump that refuses to prime itself; or, when primed, refuses to pump not more than 10 or 15 pounds of pressure; or, even worse, refuses to produce any pressure.

Or, suppose the gasoline pressure regulator valve stops up or sticks, extinguishing the fire in the combustion chamber, or worse, the fire still burns, but the Briggs stops, out of gas. Sometimes the float in the Briggs carburetor sticks and gasoline dribbles out over everything.

Another problem in connection with gasoline leaks is the gasoline running near the hot distributor head from a leaky tank, necessitating a change of gasoline tank. One does not always have the time to change tanks.

If you have had some of these problems with your equipment, you are not alone. We in Lee County have had them all, and others, many, many times.

At this time, however, we have found one of the answers to a number of problems inherent in the equipment we operate, the TIFA.

Although we have modified this machine several times, the best of these changes has been to convert the machine to propane operation. It is impossible for me to give sufficient emphasis to that statement. It sounds simple and it is. But the rewards are many.

We entered this field blindly, without any knowledge of what we would accomplish, with a goal no higher than that of cutting fuel costs. In our State of Florida the mosquito control districts are subject to 7¢ a gallon state tax on gasoline. This is true in every case, since the State gasoline tax is specifically on the manufacturer and not on the consumer. At this time propane gases are not subject to this tax. Although a tax on LP gas used as fuel in motor vehicles is applied and reported to the State quarterly on a miles traveled basis, fuel used in stationary engines such as the TIFA is not taxed at all.

Our original intention was, thus, to save 7¢ a gallon State tax. Actually, we have not entirely accomplished that purpose. Our price for regular grade gasoline this year is 12.31¢ a gallon, plus 7¢ State tax, or a total of 19.31¢ a gallon. At this time, our cost for LP fuel is 16¢ a gallon without any tax. Therefore, we save 3.31¢ a gallon instead of the intended 7¢, but this amount represents a substantial saving in fuel costs when operating nine machines.

So we accomplished our original aim—to cut fuel costs.

But, in the course of our work (some eight months having passed since the machine was first successfully operated on propane in the field), we have found that the benefits derived from this conversion were far greater than we had ever anticipated. When the conversion was complete something else had evolved. The machine worked, and it worked well when we wanted it to work. There were no strainers to stop up, no gas pump to fail, no gas pressure regulator valve to give trouble and no carburetor float to stick.

Every major problem inherent in the gasoline system of the TIFA had been eliminated.

The District has now converted six of these machines to LP gas operation at a cost of approximately \$100 a machine, not including the cost of the fuel storage tank. We expect to complete the same modification of the remainder of our units within the next 30 days.

Our experience with this propane operated machine has left us enthusiastic. We believe it to be the most reliable machine available for adult mosquito control. The truck operators find it a real pleasure to operate this equipment after their experiences in previous years; and, I can assure you, the director is the man who really benefits. That peace of mind at the dinner table, knowing that the units assigned to fog several hours each that night will accomplish what they set out to do, makes this modification well worthwhile.