

numerous problems with using them. Using alcohols of higher molecular weights improves the cold flow properties of the resulting ester, at the cost of a less efficient transesterification reaction. When made from methanol the ester is called methyl ester, and when made from ethanol it's called ethyl ester.

Because of the large price difference between ethanol and methanol, biodiesel is usually made from the latter, which in turn is most commonly made from natural gas but can also be made from renewable resources such as municipal solid waste and biomass crops. Of course, this would be a preferred method of producing methanol, as it then would be considered a renewable alcohol. Since ethanol is already a renewable resource, it may become the alcohol of choice for making biodiesel if the price drops enough to become economically feasible.

HOW BIODIESEL IS MADE

The high-quality diesel fuel known as biodiesel is made through a chemical process called *transesterification*. Don't let the big word scare you, because the process is relatively simple to perform—when you're given the proper guidance, equipment, and experience (about which this book will inform you). Transesterification is essentially the process of breaking down the oil molecule to replace one form of alcohol (glycerine) with another (methanol).

