Antibiotics are a powerful germ-fighting tool when used carefully and safely. But up to one-half of all antibiotic use isn't necessary. Overuse has led to antibacterial resistance. Bacteria adapt over time and become "super bacteria" or "superbugs." They are changed so that antibiotics no longer work on them. They pose a big threat, because there aren't any medicines to kill them. This is called bacterial resistance or antibiotic resistance. Some bacteria are now resistant to even the most powerful antibiotics available. Antibiotic resistance is a growing problem. The Centers for Disease Control and Prevention (CDC) call it one of the world's most pressing public health problems especially a concern in low-income and developing countries.

The best way to help slow the spread of super bacteria is by being smart with antibiotics.

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GREEN FUEL

Green fuel also known as biofuel is a type of fuel distilled from plants and animal materials believed by some to be more environmentally friendly than the widely-used fossil fuels that power most of the world. In the desperate search for alternative energy sources green fuel has evolved as a possible fueling option as the world drains its fossil fuel resources. Detractors suggest that the term "green fuel" is a misnomer, as the processing of crops into biofuel actually creates a considerable amount of pollution that may be just as damaging to the environment as current practices.

In creating basic forms of biofuel, crops are broken down into two types: sugar producing and oil producing. Sugar and starch producing crops, such as sugar cane or corn, are put through a fermentation process to create ethanol. Oil producing plants, like those used in vegetable oils, can be used much like fossil sources of oil; they create diesel that can be burned by cars or further processed to become biodiesel.

Recent technological innovations have created the fields of advanced biofuels, which focus on non-food sources and waster renewal as energy. By converting landfill material, as well as wood and inedible plant parts, into green fuel, we not only cut down on the use of fossil fuels but also effectively recycle enormous amounts of waste. These biofuels help quell the debate on whether growing crops for fuel will result in fewer available food crops.

A new form of fuel can literally called *green*, as it derives from green algae. Algae, often seen growing on bodies of water, is a tiny plant with a rapid growth rate. Its usefulness as fuel derives from the fact that it has an extremely high oil content that can be processed like other oil-producing crops. Many countries are now doing extensive research on algae, which is easy to cultivate and grows extremely quickly. According to some estimates by start-up algae oil companies, one acre of algae can produce 200 times as much oil as one acre of corn.

Some detractors warn against the assumption that green fuel is free from pollution-causing attributes. The processing of sugar and starch plants into ethanol has come under heavy criticism in recent years; the fermentation process releases considerable pollution into the air. Moreover, green fuel doesn't necessarily burn clean, and may emit formaldehyde, ozone and other carcinogenic substances [1].

The following fuels can be produced using first, second, third or fourth-generation biofuel production procedures. Most of these can even be produced using two or three of the different biofuel generation procedures.

Biogas is methane produced by the process of anaerobic digestion of organic material by anaerobes. It can be produced either from biodegradable waste materials or by the use of energy crops fed into anaerobic digesters to supplement gas yields. The solid byproduct, digestate can be used as a biofuel or a fertilizer.

Biogas can be recovered from mechanical biological treatment waste processing systems. Landfill gas, a less clean form of biogas, is produced in landfills through naturally occurring anaerobic digestion. If it escapes into the atmosphere, it is a potential greenhouse gas. Farmers can produce biogas from manure from their cattle by using anaerobic digesters.

Syngas a mixture of carbon monoxide, hydrogen and other hydrocarbons is produced by partial combustion of biomass, that is, combustion with an amount of oxygen that is not sufficient to convert the biomass completely to carbon dioxide and water. Before partial combustion, the biomass is dried, and sometimes pyrolysed. The resulting gas mixture, syngas, is more efficient than direct combustion of the original biofuel and more of the energy contained in the fuel is extracted.

Syngas may be burned directly in internal combustion engines, turbines or high-temperature fuel cells. The wood gas generator, a wood-fueled gasification reactor, can be connected to an internal combustion engine.

Biologically produced alcohols, most commonly ethanol, and less commonly propanol and butanol, are produced by the action of microorgan-

isms and enzymes through the fermentation of sugars or starches (easiest), or cellulose (which is more difficult). Biobutanol (also called biogasoline) is often claimed to provide a direct replacement for gasoline, because it can be used directly in a gasoline engine.

Ethanol fuel is the most common biofuel worldwide, particularly in Brazil. Alcohol fuels are produced by fermentation of sugars derived from wheat, corn, sugar beets, sugar cane, molasses and any sugar or starch from which alcoholic beverages such as whiskey, can be made (such as potato and fruit waste, etc.). The ethanol production methods used are enzyme digestion (to release sugars from stored starches), fermentation of the sugars, distillation and drying. The distillation process requires significant energy input for heat (sometimes unsustainable natural gas fossil fuel, but cellulosic biomass such as bagasse, the waste left after sugar cane is pressed to extract its juice, is the most common fuel in Brazil, while pellets, wood chips and also waste heat are more common in Europe). Waste steam fuels ethanol factory – where waste heat from the factories also is used in the district heating grid.

Methanol is currently produced from natural gas, a non-renewable fossil fuel. In the future it is hoped to be produced from biomass as biomethanol. This is technically feasible, but the production is currently being postponed for concerns that the economic viability is still pending. The methanol economy is an alternative to the hydrogen economy, compared to today's hydrogen production from natural gas.

Butanol (C_4H_9OH) is formed by ABE fermentation (acetone, butanol, ethanol) and experimental modifications of the process show potentially high net energy gains with butanol as the only liquid product. Butanol will produce more energy and allegedly can be burned "straight" in existing gasoline engines (without modification to the engine or car), and is less corrosive and less water-soluble than ethanol, and could be distributed via existing infrastructures.

Biodiesel is the most common biofuel in Europe. It is produced from oils or fats using transesterification and is a liquid similar in composition to fossil/mineral diesel. Chemically, it consists mostly of fatty acid methyl (or ethyl) esters (FAMEs). Feedstocks for biodiesel include animal fats, vegetable oils, soy, rapeseed, jatropha, mahua, mustard, flax, sunflower, palm oil, hemp, field pennycress. Biodiesel can be used in any diesel engine when mixed with mineral diesel.

Since biodiesel is an effective solvent and cleans residues deposited by mineral diesel, engine filters may need to be replaced more often, as the biofuel dissolves old deposits in the fuel tank and pipes. It also effectively cleans

the engine combustion chamber of carbon deposits, helping to maintain efficiency. In many European countries a 5% biodiesel blend is widely used and is available at thousands of gas stations. Biodiesel is also an oxygenated fuel, meaning it contains a reduced amount of carbon and higher hydrogen and oxygen content than fossil diesel. This improves the combustion of biodiesel and reduces the particulate emissions from unburnt carbon. However, using pure biodiesel may increase NO_x-emissions.

Green diesel is produced through hydrocracking biological oil feedstocks, such as vegetable oils and animal fats. Hydrocracking is a refinery method that uses elevated temperatures and pressure in the presence of a catalyst to break down larger molecules, such as those found in vegetable oils, into shorter hydrocarbon chains used in diesel engines. It may also be called renewable diesel, hydrotreated vegetable oil (HVO fuel) or hydrogen-derived renewable diesel. Unlike biodiesel green diesel has exactly the same chemical properties as petroleum-based diesel. It does not require new engines, pipelines or infrastructure to distribute and use, but has not been produced at a cost that is competitive with petroleum.

Vegetable oil can be used in many older diesel engines that don't use common rail or unit injection electronic diesel injection systems. Due to the design of the combustion chambers in indirect injection engines, these are the best engines for use with vegetable oil. This system allows the relatively larger oil molecules more time to burn. Hydrogenated oils can be blended with diesel in all proportions. They have several advantages over biodiesel, including good performance at low temperatures, no storage stability problems and no susceptibility to microbial attack.

Bioethers (also referred to as fuel ethers or oxygenated fuels) are cost-effective compounds that act as octane rating enhancers. Bioethers are created from wheat or sugar beets. They also enhance engine performance, while significantly reducing engine wear and toxic exhaust emissions.

When it comes to transportation fuel there are six ether additives: dimethyl ether (DME), diethyl ether (DEE), methyl *tret*-butyl ether (MTBE), ethyl *tret*-butyl ether (ETBE), *tret*-amyl methyl ether (TAME), and *tret*-amyl ethyl ether (TAEE).

The European Fuel Oxygenates Association (EFOA) identifies methyl *tret*-butyl ether (MTBE) and ethyl *tret*-butyl ether (ETBE) as the most commonly used ethers in fuel to replace lead. Although Europeans still use bioether additives, the US no longer has an oxygenate requirement therefore bioethers are no longer used as the main fuel additive [2].

It is not yet clear whether the green fuel currently available is the wave of the future or merely an interim step on the journey away from fossil fuel use. Governments around the world are devoting enormous resources to the research of clean, sustainable fuels to replace the pollutant and quickly disappearing oil reserves used today. Green fuel may not be a perfect solution to the problems of oil need and global protection, but it remains an important innovation that may pave the way to a better future.

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DIE KOMMERZIALISIERUNG DER MEME

Jeden Tag lachen wir über Bilder aus dem Internet, und im Gespräch antworten wir mit einer Replik aus der Meme-Realität. Es ist höchste Zeit zu verstehen, wer und wie Meme schafft und dadurch in den heutigen Realien verdient.

Accounts mit Memen – eines der am schnellsten wachsenden Segmente in Instagram, dem beliebtesten Jugendsozialnetzwerk. Meme sind ein mächtiges Instrument, um Generation Z und Millennials darüber zu erzählen, was Ihre Marke ist und was Sie den Menschen und Ihrem Lebensstil geben können.

Die Vertreter der Generation Z sind jetzt zwischen 7 und 22 Jahre alt. Sie bilden die größte Verbrauchergruppe der Welt, deren Kaufkraft allein in den USA 143 Milliarden Dollar übersteigt.

Im Gegensatz zu den «geschliffenen» Posts sprechen die Meme mit den Jugendlichen in einer zwanglosen Sprache. Außerdem wird ein Mem im Web eher viral. Wenn man Werbung in Accounts mit Memen platziert, bekommt man 30% Antworten, während normale Accounts nur 1-15% bringen. Außerdem ist ein Mem etwa 60% billiger als, z. B., ein Werbungpost von einem beliebten Blogger.