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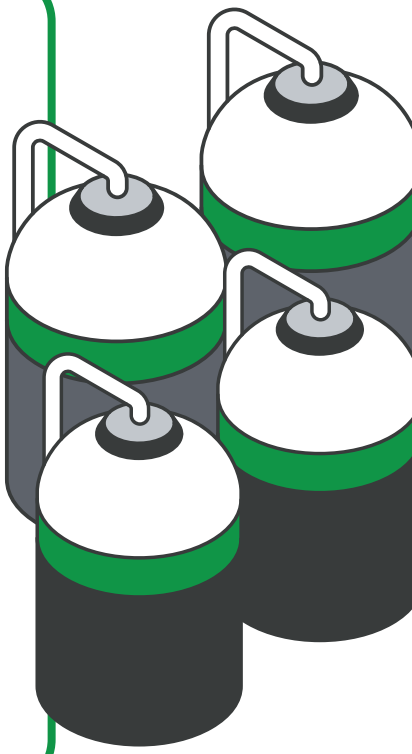
POWER, STRUCTURE, TECHNICAL SYSTEMS

LIQUID FUELS & LUBRICANTS

CONCEPT Liquid fuels and lubricants play a significant role in agriculture. Liquid fuels power farm equipment such as tractors, harvesters and irrigation pumps. Lubricants reduce friction between surfaces in mutual contact, ultimately reducing the heat generated when the surfaces move and extending the lifespan of equipment. They also transmit forces, transport foreign particles or heat or cool the surfaces. Advances in biofuels and synthetic lubricants are providing new opportunities to reduce the environmental impact of agriculture by lowering emissions and reducing waste.



BACKGROUND

As agriculture became increasingly mechanized, liquid fuels such as diesel and gasoline became essential production components. During World War II, the need for food production led to further advances in agricultural machinery and fuels as farmers worked to meet increased demand. In the latter half of the 20th century, concerns about energy security and environmental impacts led to the development of alternative fuels such as ethanol and biodiesel. Advances in synthetic lubricants have also improved equipment efficiency and reduced environmental impact.

REAL WORLD CONNECTIONS

Nebraska is one of the top ethanol-producing states in the US, with several ethanol plants. Ethanol is a biofuel made from corn, one of the primary crops grown in Nebraska. It is often blended with gasoline to produce fuel for small equipment and vehicles.

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