с.) была достигнута, когда работу двигателя снизили до частоты вращения 1900 об/мин. Пусковой момент, составляющий 116 %, совместно с 38 % запаса крутящего момента и 25 % полной мощности, позволяет двигателю получить хорошие рабочие характеристики.

Обеспечивая снижение расхода топлива до 249 г/кВт•ч на номинальной частоте вращения и даже обеспечивая ни много ни мало 231 г/кВт•ч при максимальной мощности на ВОМ, этот двигатель, очевидно, лучший в своем классе мощностей. Все это говорит о том, что трактор имеет достаточно широкое применение. На работах, требующих большого расхода , 5М будет потреблять топливо в объемах, иногда существенно превышающих среднее значение, для сравнения, на тяжелых тяговых работах и работах с ВОМ потребление топлива всегда ниже, чем среднее значение, полученное при замере мощности на сцепном устройстве: 273 г/кВт•ч при номинальной частоте вращения и всего 258 г/кВт•ч при максимальной мощности на сцепном устройстве величиной 60,3 кВт (80,8 л. с.) Это показатель высокой экономичности, который подчеркивает эффективность простой трансмиссии.

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STRATEGIES FOR EXTENDING MACHINERY LIFE

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Abstract. This article deals with five strategies to achieve maximum life from farm machinery. These practices include machinery maintenance, oil analysis, machinery storage, engine tune-ups, and avoiding modifying tractor engines. No single item will have a large effect, but a combination of practices can have a large impact on costs, improve machine reliability for many years to come, and improve profit margins.

Keywords: strategies, machinery maintenance, oil analysis, machinery storage, engine tune-ups, avoiding modification of tractor engines.

Machinery ownership and operation is a major crop and livestock production cost. Several strategies when combined can significantly affect costs, improve machine reliability, and improve profit margins.

This article discusses five strategies to achieve maximum farm machinery life. These strategies are: machinery maintenance, oil analysis, machinery storage, engine tune-ups, and avoiding modification of tractor engines [1].

Timely preventative maintenance and inspection will not only help reduce major problems and downtime, it will also help identify problems when they can be corrected with relatively minor repairs.

Equipment repaired during the winter can save money on service at mechanics' shops. An effective machinery service program requires good record keeping. The maintenance program must be based on fact as determined by an accurate service record for each piece of equipment as recommended by the operator's manual and adjusted to individual conditions.

If extending economic machinery life is the objective, timing of proper maintenance, as recommended by the manufacturer, is the best way.

A detailed look at a sample of engine, transmission or hydraulic oil is a valuable preventative maintenance tool. In many cases, it enables identification of a potential problem before a major repair is necessary and downtime during critical operations can be avoided. Oil analysis is a means of monitoring wear and oil contamination. When conducted on a regular basis, it establishes a baseline of normal wear and can indicate when abnormal wear or contamination occurs. It is important to get an oil sample that is representative of all of the oil in the machine. Cost of oil analysis will vary according to the laboratory and extent of the analysis [2].

The farmer who keeps the most valuable and vulnerable machinery out of the weather can save a lot of money. Equipment stored inside has a significantly higher trade-in value compared to the same equipment stored outside. Machines, including tractors, combines, planters, drills, forage choppers and trucks should be kept inside. Parts such as belts, tires and hoses deteriorate rapidly when unprotected. Places where water can collect and freeze are problem areas. To determine the value of stored machinery, add the increase in trade-in value and value of fewer repair costs and subtract the downtime.

Tillage implements should be the last to be placed inside. They take up a lot of space and decline in value only slightly faster when left outside. After five years, tillage equipment kept inside is worth only about 5 percent more than if left outside. Usually, the deterioration that occurs to the tires and bearings is less than the cost of providing building space.

Diesel and gas engines require periodic tune-ups. As engines operate, they lose power and fuel efficiency. To obtain the optimum performance from an engine, the power produced and the fuel consumed should be checked. The next step is to test the tractor. The tractor should be tested on a certified PTO (power take-off shaft) dynamometer found at most equipment dealers. A tune-up may in-

clude changing air and fuel filters, cleaning and adjusting injector nozzles, and adjusting engine timing. Another important part of tractor operation is checking fuel efficiency. This can be done at the time the tractor is operating on the PTO dynamometer. Fuel efficiency will give an idea of the engine's condition.

A tractor engine may be «modified» to get more power. Frequent claims about pulling bigger loads, getting new «life» from older models, and more power from new models are true. Engine modification can be done by several means. The most common is overfueling, while others include adding alcohol or LP gas (liquefied petroleum gas) injection, and turbo-charging naturally aspirated engines. The first problem is warranty. Most manufacturers do not allow any changes from standard specifications without voiding the warranty. The second problem with engine modifications is an almost sure reduction in service life. Tractors are designed to operate at different travel speeds, but the final drives are not designed for all possible torques theoretically available. Speed also has an effect on service life.

If more power is needed, it is better, financially, to trade for a bigger tractor. Larger tractors are built for higher power from the radiator to the wheels and should give good service. Trying to get more power by modifying a tractor may prove to be extremely expensive.

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FEASIBILITY STUDY OF AGRICULTURAL MACHINERY AND EQUIPMENT UTILIZATION EFFICIENCY

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Abstract. This article deals with importance of mechanization and good maintenance practices for efficient operation of all types of machinery agricul-