

Tractor Spark Plugs Wear May Mean Poor Firing

Ever wonder why you're supposed to change the spark plugs in your tractor after every 250 hours of operation? Why not leave them in for 300—500—even 1,000 hours as long as they look okay when you take them out?

There's a good reason, according to the technical services department of a national spark plug company. Engineers there advise that their 250 hour change recommendation is not actually based on the fact that spark plugs are "worn out" in the strictest sense after 250 hrs. of service. This figure, selected after extensive spark plug life tests—merely represents a safety factor beyond which plugs may misfire under an extremely heavy load. It also represents the point at which gas economy and horse power begin to drop.

The engineers consider a spark plug worn out when it reaches the point where it is likely to misfire—regardless of its appearance. And, contrary to popular opinion, misfiring doesn't necessarily mean the plug didn't create a spark. It means simply that the plug failed to ignite the gasoline properly—whether a spark was produced or not!

How can a spark be produced and the plug still misfire? Because "spark tracking" (or high-tension current leakage) through carbon deposits on the spark plug's firing end can result in a weak spark, which in turn causes incomplete burning of the fuel mixture, and results in a loss of both power and economy.

High resistance which develops as the spark plug electrodes become rough and uneven and the gap between the electrodes increases, also can result in the spark being too weak. Here too the gasoline isn't ignited properly and incomplete burning of the fuel charge can result.

A new spark plug with the correct gap setting needs about 5000 volts to fire. However, as the plug remains in service, constant heat and chemical attack plus electrical erosion cause the gap to become wider, thus increasing the amount of voltage needed to fire the plug.

Most spark plug engineers agree that a safety factor is needed in the spark plug to ensure proper plug performance under every possible operating condition. Consequently, they try to keep the amount of voltage necessary to spark the plugs well below the amount of voltage that the coil is capable of producing. . . and keep in mind, this safety factor must take into consideration the fact that as the ignition system becomes older, its potential high voltage output drops off. A new ignition system, for example, may be able to produce over 20,000 volts of electric city. The same system after 1100 or 1200 hours without replacing any of the parts may only be able to produce 14 to 15,000 volts.

By extensive testing programs, Champion engineers have determined that the maximum useful life of a tractor spark plug is about 250 hours—if the safety factor is to be kept in mind. Plugs used beyond this limit generally will not be able to spark under all operating conditions.

Remember, as plugs remain in service, more voltage is needed to make them spark. As the ignition system ages, its ability to produce high voltage lessens. If the point is reached where the spark plugs require more voltage to spark than the system can produce, the spark plugs misfire.

Changing spark plugs at

250-hour intervals prevents this from happening.

● Corn Growing (From page 1)

loose soil might not cause a picking problem in a wet fall. He said, "I am tempted to try it (wheeltrack planting) on a piece of alfalfa that didn't do too well this spring. I need some more

corn for refilling the silo; so I might just try it." Kreider also said he didn't think the rough ground would present any more problem at picking some than the high ridges some farmers throw up around their corn rows.

The looseness of the soil came in for its fair share of the discussion. In the adjoining field, worked in the conventional manner, puddles of water from the recent rain storms stood in several places, while the farmers could walk through the wheeltrack plots without feeling the slippery mud beneath their feet.

Fredd pointed out the water absorbing ability of the loose soil and explained that the water would be retained better as well. Since the soil has not been compacted and will not be stirred, no crust forms on the surface and water does not rise to the surface to evaporate.

While the wheeltrack plots showed considerable unevenness in heights of the corn, most growers felt the crop would become more uniform later in the season. The corn seed appears to germinate at a more uneven rate when the soil has not been worked fine and packed firm. For this

same reason, weeds germinate later and are shaded by the crop.

Hess says he is well pleased with the trials but adds "we didn't do as good a job of controlling grass as we would like to see."

At the discussion period after inspection of the field, Richard Maule of Quarryville R2 summed up the feelings of many in attendance when he said, "We resist change, but I appreciate the opportunity to come to this meeting and I'm glad Mr. Hess is still young enough to try some new methods."

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							Eggs per Bird	% Feed DO				Feed/Decas	Feed	Labor	Dep.	Total					
1	28	10-25-8	6397	8	18	6410	7	26.1	27.6	46955	3913	49812	12.7	7	26.1	4.24	0.936	0.085	0.172	0.793	
2	28	11-22-8	6343	15	39	6378	17	40.1	34.2	107336	8945	91101	6.6	17	59.6	4.17	0.284	0.057	0.074	0.395	
3	28	12-20-8	6278	10	55	6311	24	44.2	32.3	148899	12408	57146	4.6	25	82.7	4.18	0.192	0.026	0.054	0.272	
4	28	1-17-9	6254	4	40	6254	23	41.3	34.4	142560	11880	60414	5.1	22	79.2	4.25	0.218	0.028	0.056	0.300	
5	28	2-14-9	6187	2	45	6211	22	78.5	33.8	136485	11390	58930	5.2	21	76.0	4.25	0.218	0.029	0.059	0.308	
6	28	3-14-9	6110	17	40	77	6149	21	74.0	30.9	127544	10629	53325	5.0	20	70.9	4.23	0.211	0.031	0.064	0.304
7	28	4-11-9	6037	8	65	73	6074	20	77.3	32.3	123048	10254	55032	5.4	19	66.4	4.26	0.229	0.032	0.065	0.324



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