Spring Hay Machinery Maintenance

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Late winter to early spring is a great time to maintain hay tools. Having equipment in good working order makes harvest easier and allows for optimal timing for high-quality hay production. Proper machine adjustment minimizes field losses and maintains hay quality. Although your operator's manual is the definitive maintenance guide, some general guidelines will be covered here.

A good maintenance program starts with cleaning in the fall or spring, allowing you to see components better to ensure functionality. It is difficult to identify a problem when it is covered in dirt. In addition to washing, ensure rotating shafts are clear of hay, twine, or other debris. Build-up of foreign material on rotating parts can generate excessive heat, contributing to future problems.

Once cleaned, inspection follows. General guidelines include inspection of safety shielding, fasteners, tires, gearboxes, hydraulic components, power take-off (PTO) components, and bearings[2].

Safety shielding may not seem important to machine performance, but harvest down-time due to injury can be significant. Ensure shielding properly covers rotating components and is not rubbing. If dented or not properly functioning, consider repairing or replacing it.

Checking fasteners for proper tightness or excessive wear can help diagnose other problems not readily apparent. Check the operator's manual for torque specifications. When replacing a fastener, make certain you use the same grade fastener.

Gearboxes are essential. Check to ensure oil level in the gearbox is correct and no noticeable wear or damage has occurred to any gears or housing. Regularly changing oil will increase the longevity of the component and allow for visual inspection of the gears.

Check hydraulic lines for dry-rot and damage, ensuring all connections are tight. If searching for pin-hole leaks in hydraulic hoses, wear gloves and protective eyewear. Pin-hole leaks under high pressure will cut the skin and have great potential to cause serious infection.

Tire inflation is critical. Ensure tires are not dry-rotted and inspect valve stems for leaks. A slow leak in a tire may not be readily apparent, but can impede field operations when the tire goes flat. A solution of dish soap and water sprayed around the bead of the rim and on the valve stem will noticeably bubble when a leak is present. This is a quick and easy check.

Most hay equipment is operated with PTO shafts. First, ensure PTO shield is functioning properly, reducing the chance of clothing or human contact with the rotating shaft and minimizing hay wrapping itself around the shaft. PTO yokes are also another common failure point. If a yoke has any play (i.e., linear travel) between bearing caps, it should be replaced. This is much easier to do at a work bench with a vise and the proper tools rather than in the field.

Finally, check and grease bearings. Movement is an indication of impending failure and is due to wear or lack of lubrication. Ensure seals are in working order and replace if necessary. Check operator's manual for greasing locations and lubrication intervals.

Machine specific recommendations:

- Mower Conditioners: Ensure cutting knives are not broken, bent, and are attached tightly. Replace questionable knives immediately.
- Rakes and Tedders: Properly working tines are key to functionality. Replace any bent or broken tines immediately.
- Balers: Belt tension is important to proper functionality. Ensure belts are not excessively worn and are tensioned properly. For square balers, ensure knotter and twine cutters are in working order. Ensure the knife is sharp, but be careful checking this component[1].

Spending some time with your hay equipment before harvest will help ensure productive and safe equipment operation. Checks on the above components could identify larger problems contributing to significant down-time and sub-optimal hay quality in later months.

1. Freese, B. (2017). John Deere Maintenance Monday: Square baler maintenance. Living the Country Life Magazine. Accessed on 6 February, 2017. http://www.livingthecountrylife.com/machinery/maintenance-monday/john-deere-maintenance-monday-square-baler-maintenance
2. Miesen. (2014). Mechanics Corner: Tedder and rotary rake pre-season maintenance. Progressive Forage. Accessed on 6 February, 2017. http://www.progressiveforage.com/forage-production/equipment/mechanics-corner-tedder-and-rotary-rake-pre-season-maintenance