the machine can overheat.

When checking belts, make sure you don't over-tighten them. This can cause bearing, pump and/or PTO failure. The PTO/clutch should be checked daily. It should take about 90 ft./lbs. of force to engage the clutch handle.

Don't turn blue—The major cause of PTO failure is "facing burn-out" from either incorrect use, incorrect adjustment or a combination. "It will turn blue and you'll fry it," says Such, who recently conducted a seminar on chipper use for the Ohio Chapter of the International Society of Arboriculture.

The engagement time for the PTO and the adjustments must meet the manufacturer's specs to avoid costly breakdowns.

Lubricate the bearing properly. One manufacturer reports that 95 percent of all bearing failures are caused by improper lubrication. Another big cause of bearing failure is operating when the grease is cold. This will ruin the shaft along with the bearing. Such says that it is absolutely crucial that the correct specified warm-up and idle periods be followed. Heed the manufacturer's specs and don't try for short cuts.

Do/don't

DO:

- Understand safety, maintenance materials
- Wear head, eye, hearing protection
- Be extra observant
- Set up far from road
- Use cones, signs and a flagger
- Feed from the right side or rear of hopper
- Check discharge chute direction
- Look in the hopper first
- Look for climbing ropes in branches
- Check governor belt often
- Specified daily, weekly, periodic inspections
- Keep radiator clean
- Check PTO
- Follow PTO specs
- Follow specified warm-up period
- Lubricate bearings correctly

DON'T:

- Wear clothes that are too loose
- Wear gloves that are too tight
- Set up under targeted tree
- Run toward road
- Let branches flip into road
- Stand in front of discharge chute
- Set non-brush items in hopper
- Let hands cross hopper plane
- Use hand, foot, rake, etc. to push brush in
- Force anything in
- Push in foreign items
- Use dull knives
- Ignore any part of the machine
- Over-tighten belts
- Try any short cuts

When an inspection timetable is presented, it's there for good reason. It does no harm to check each part—be it bolt, screw, filter, fluid—as often as possible.

"Common sense, reading all safety instructions and a good maintenance program are the keys to chipper safety and a trouble-free chipper," says Such.

—James E. Guyette is a freelance writer specializing in the green industry. He is based in South Euclid, Ohio.

Questions to ask *before* spraying

■ Dr. Stephen Pearson, technical services manager at Spraying Systems Co., Wheaton, Ill., encourages pesticide and fertilizer applicators to consider drift potential before spraying. Here are five questions you should ask yourself:

1) Are there sensitive plants nearby? Allot extra buffer zones on the border of the application zone.

2) What size spray tip is being used? Larger, heavier droplets from larger nozzles or special drift control spray tips minimize drift.

3) From what height is the product being applied? Higher booms mean droplets have more time to drift before hitting the target.

4) What is the wind velocity? Even a slight breeze of 6 mph can cause measurable drift.

5) What is the spray pressure? If an applicator reduced the pressure, drift is reduced through increased droplet size. But remember, decreasing the spray pressure too much can affect spray pattern and volume. Always re-calibrate sprayers after a significant change in pressure.