

**Standard Operating Procedures
For Field Based Research and Crop Production
University of Idaho
Plant, Soil & Entomological Sciences Department**

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Overview

Purpose:

These operation procedures have been implemented to reduce, and hopefully eliminate, the spread of weeds during our day to day activities associated with field based research and general crop production. In particular, jointed goatgrass has the potential to eliminate the production of limit generation seed wheat in this region if it's spread is not controlled. In addition we want to do everything possible to avoid spreading weeds of any kind from one location to another regardless of whose land it may be.

Equipment operation has also been included to provide everyone general guidelines on the use of equipment. The intent is to create an environment which helps maintain a reliable fleet of equipment and promote cooperation and understanding among users.

Who do these standard Operating Procedures apply to?

The following procedures apply to anyone that utilizes University of Idaho, Department of Plant, Soil, and Entomological Sciences equipment and/or uses land that is under management jurisdiction of the Department. This also includes faculty, staff, and students that or members of other Departments at the University of Idaho and agencies outside the University of Idaho that conduct research of any type or produce a crop on land that is managed by the Department.

Equipment Operating SOP

General:

- Use the sign-out board to indicate when you expect to use a piece of equipment.
- Avoid signing out equipment more than 1 week in advance of the anticipated use time. Equipment should only be signed out for a reasonable period of time.
- Contact the other project staff to coordinate use of a piece of equipment if overlapping needs occur.
- Return all equipment so that it is clean and ready by the next person.
- If the equipment needs repairs and is not usable, try to inform the next user. Immediately let the farm staff now about needed repairs

All equipment:

- Check for loose, worn, broken and missing parts. Report any needed repairs.
- Check engine oil level, coolant level, and fuel level if applicable.
- Any person using a piece of equipment **MUST** be knowledgeable in its correct operation. It is the responsibility of the user to secure necessary training from the farm staff before using a piece of equipment.

Tractors/planters:

- Make sure planter (or other 3-point equipment) is attached properly and the correct pins are used.
- Use the correct third link. Pin size and length are specific to each tractor.
- Don't get the funnel and lever for the planter.

Combines:

- The farm charges a fee for combine use, so please record tachometer hours.
- Write down starting engine hours. Record the time in hours and tenths of an hour, i.e. 629.4. One tenth of an hour = 6 min. The numbers on the display roll up.
- Check for correct sieve on the Hege combines, or correct concave and shaker on the Wintersteiger combines.
- Take appropriate accessories.

Trailers:

- Make sure hitch is latched correctly and safety chains are connected.
- Check lights.
- Check tire pressure.
- Make sure load is secured and balanced.
- The farm assesses fees for trailer use; please record trip mileage.

Tillage, Planting, Field Maintenance SOP

Noxious Weed Spread Prevention (jointed goatgrass): These steps are intended to prevent the spread of jointed goatgrass and other weeds.

Field work procedures: Tillage, planting, and general field work

- These procedures apply to on station and off station locations.
- Find it/report it: If you find jointed goatgrass, pull the plants, place the plants in a bag, seal the bag, and dispose in the dumpster. Mark the location in the field with a wire flag or tall stake and immediately report it to the farm manager for mapping and monitoring of the location. Off station location must be monitored by the person(s) using that location.
- Start with clean equipment, this includes vehicles and trailers.
- Use clean seed. Research seed often comes from a number of sources. Take the time necessary to inspect the seed before planting.
- Avoid driving equipment (including university and private vehicles) across adjacent fields. Access your plots from the nearest established road way.
- Inspect and clean vehicle (university and private) under carriage after each off station field visit.
- Don't move weeds from one field to the next. When performing the same task in more than one location on the same farm, clean equipment before proceeding to the next location.
- When you are finished with an operation, and before you leave the field, remove all soil and debris from the equipment. In particular, pay attention to equipment parts that have been moving through the soil. Also check places that loose debris can adhere, such as radiator screens and flat surfaces.
- Mowers and Rotary Tillers: These types of equipment will often require more time to clean. Remove as much soil and debris as possible in the field where the work was done

and finish cleaning with high pressure air and or water in a location where the debris can be collected. Place debris in a plastic garbage bag, seal, and put the bag in a dumpster.

Pre Harvest SOP

Noxious Weed Spread Prevention (jointed goatgrass): These steps are intended to prevent the spread of jointed goatgrass and other weeds.

Before Harvest:

- You must complete jointed goatgrass identification training that will be provided by Departmental faculty and staff.
- All harvest sites must be inspected for jointed goatgrass prior to harvest. This includes the entryway to the field and a minimum 30 foot area adjacent to the plot area. Make this a normal part of your routine whenever you are in a field.
- If jointed goatgrass is found it should be pulled, bagged and the location marked for later re-inspection. Bags should be tied shut and placed in a dumpster.
- Once jointed goatgrass is found, the entire location is to be considered contaminated and the appropriate combining procedures will be followed (see section on combining procedures).



Left - wheat, Center - jointed goatgrass, Right - hybrid

For more photographs of jointed goatgrass see:
<http://www.jointedgoatgrass.org/gallery/gallery.htm>

Combine, SOP

Noxious Weed Spread Prevention (jointed goatgrass): These steps are intended to prevent the spread of Jointed Goat Grass and other weeds.

Combining Harvest Sites That Free of Jointed Goatgrass:

- You must complete the combine user training program offered by the farm staff.
- Start with a clean combine at each location.
- Avoid pulling tow vehicles and trailer into vegetated areas if possible
- When you've finished:
 1. Blow all loose debris from the combine at or near the harvest site.
 2. Look for and remove seed and debris that was not removed by blowing.
 3. Load the combine, pull to a clear area and inspect trailer and tow vehicle for debris, i.e. undercarriage, floor boards, etc.

Contaminated Sites:

- Never move from a jointed goatgrass contaminated site to a clean site before doing the following:
- Follow the steps listed above, then:
 1. The combine should be thoroughly cleaned. This will require some disassembly of the combine and will require that the combine be brought back to the farm.
 2. Cleaning should be done on a hard surface to allow for removal of debris when you are finished.
 3. Disassemble as required
 4. Clean and inspect
 5. Reassemble and run combine. No discharge of chaff or seed should be noted
 6. Move the combine and clean up the area. Bag all debris from the cleanup area and place in dumpster.

Note: if for any reason you can not complete the cleaning process after using the combine, you **MUST** place a “do not use” tag on the combine’s steering wheel so others will not use it until you have finished the cleaning procedure. You should make an effort to arrive early the next day to finish the cleaning procedure so other users will not be waiting for you to finish.

Combine Cleaning SOP:

In field: Blow off with leaf blower.

- Cutting: Blow off header paying close attention to sickle, belt rollers, reel tines, plot dividers and Wintersteiger feeder drum.
- Separating: Cylinder/concave and beater area. Open all access covers and blow out.
- Cleaning: Remove all material from straw walker (upper sieve). Remove sieve to clean sieve and sieve case. Blow off top of fan housing. *On Hege’s, open the door on the bottom of the cleaning fan and clean out hollow space in the center.
- Bagging: On the older Hege combines remove the bagger to clean. On Hege 140-2 and the Wintersteigers the cyclone system is not easily removed. Blow in cyclone fan, venturi and check hose joints.

- Chassis: Check axles, between frame, springs on lift cylinders, hydraulic tank and lines, brake lines, under engine, radiator screen, and other places where material may hang.
- Vehicles and Trailer: Inspect and remove any debris. Remember to pay close attention to the undercarriage of both trailer and vehicle.

Note: Air will only remove loose debris. Always visually inspect and remove wedged material by hand.

Thorough Cleaning: Clean with a high pressure air hose after harvesting sites which may have jointed goatgrass or before harvesting on UI farms.

- Remove all shields. Remove straw walker. Remove sieve.
- On Wintersteiger combines remove concave. Seek help if needed, these are expensive pieces of equipment.
- BLOW BLOW BLOW

Final Inspection:

- Visually inspect the combine one more time. Reassemble the combine and run for a couple of minutes while watch for any discharge of material. Hopefully there won't be any. If there is, you need to find the source and clean it out.
- You can have Brad, David or Roy help with the final inspection.

Seed and Residue Processing SOP:

- The important things to remember in this step are containment and disposal.
- Any samples transported from the field to a processing location should be contained in such a way that will prevent spills or blowing of seed and/or debris out of a vehicle.
- Contain samples while they are being stored. Do not allow seed or residue to be spread by rodents, spills or wind.
- Maintain a clean work environment. Leave enough time at the end of each day to clean up. All debris that is collected should be bagged, sealed, and placed in a dumpster.
- Any seed or residue samples that will not be kept should be disposed of in one of the following ways:
 1. Small quantities of seed can be bagged and placed in the dumpster
 2. Large quantities of seed can be placed in the appropriately labeled seed box.
 3. Small quantities of residue samples that may have jointed goatgrass should be bagged and placed in a dumpster.
 4. Large quantities of residue will be handled in various ways on a case by case evaluation. Contact the farm manager for to determine the appropriate procedure.