

# Sprayer Logbook Template

This logbook is a tool to track pesticide applications on your operation. There are many benefits to knowing a detailed history of specific field applications. Pesticide resistance is a growing concern and having history of specific applications is important to track patterns of use. A written history will also aid in knowing which cleanout method, if appropriate, for each herbicide used. Crop rotation planning for future years may also be impacted by herbicide choices in the present.

Furthermore, if any anomalies in the crop happen throughout the season, having a detailed record of sprayer activity helps narrow down causes very quickly as that is typically the first piece of information that's requested by an agronomist. Tracking environmental conditions during sprayer activity helps raise awareness of best application practices.

Owner name: \_\_\_\_\_

Sprayer logbook date range: \_\_\_\_\_ to \_\_\_\_\_

## Sprayer Information

Sprayer make and model: \_\_\_\_\_

Tank size: \_\_\_\_\_

## Nozzle Information

Set	Make	Model	PSI	Droplet Size	Screen Mesh Size	Strainer Size
1						
2						
3						
4						
5						
6						

## Spray Water Information

Water Source	Date Tested	Water Quality Concerns

## Mixing Pesticides

To avoid mixing that may result in incompatibilities, always consult the label of the products that are being used to learn the correct order. Remember to add all like components at the same stage of mixing. The list below is a general rule-of-thumb for mixing pesticides:

1. Fill the spray tank with  $\frac{1}{4}$  to  $\frac{3}{4}$  the amount of water required for the application and turn on the sprayer agitation. Check the products that are being used for the correct amount to add. Once agitation has begun, maintain until the tank is emptied.
2. Add any water conditioner (fertilizer or pH adjuster) additives to the tank.
3. Add any wettable powders, or water dispersible granules (DF, DG, or WDG). Add dry products slowly to prevent clogged return lines. Allow sprayer to agitate for a few minutes, allowing the product to become completely suspended in the tank, before adding the next component.
4. Shake any containers of liquid pesticide thoroughly before adding to ensure they are well mixed.
5. Add any oil dispersions (OD) or flowable liquid suspensions (F, SC) to the tank. Allow to mix.
6. Add emulsifiable concentrates (EC) or emulsions (ME, SE) to the tank and allow to mix.
7. Add any pesticides that are solutions (SN) (i.e. amines and salts)
8. Add any surfactants or other adjuvants.

Remember to always consult the label for compatible mixes and recommended mixing order. Many pesticides will break down if left in the tank for an extended period. Try not to mix any more than you can spray at one time. If you need to stop spraying for a short time, leave the sprayer agitation running to keep products from settling or separating in the tank.

For more information, please refer to [Saskatchewan's Guide to Crop Protection](#).

## Sprayer Cleaning

There are three basic types of rinse solution for cleaning sprayer tanks. Their recipes and basic procedures are outlined below:

- **The Ammonia Rinse** – Fill spray tank and add 1 L of household ammonia (three per cent) for every 100 L of clean water needed for the rinse and begin agitation. Allow solution to flush through the booms until the boom is completely filled with ammonia solution and top up the tank with water. Circulate the ammonia solution through the tank and pump system for 15 minutes. Flush hoses and booms with ammonia rinse solution again (minimum five minutes) before emptying. Remove nozzles and screens and scrub with 0.1 L household ammonia per 10 L clean water and an old toothbrush. Perform clean water rinse to remove ammonia solution prior to next spray load. Some herbicides recommend leaving the ammonia rinse in the tank over night to improve cleaning potential.
- **The Fresh Water Rinse** – The spray tank cleaning should begin and end with a fresh water rinse to remove the majority of potential contaminants prior to the cleansing process or prior to the next round of spraying. Drain the tank of its previous contents and fill the tank with clean water. Open nozzle valves and pump clean water through the booms and hoses. Top up the tank with more clean water and circulate/agitate for at least 10 minutes and empty the tank of waste water. If this is the first rinse after spraying, a high pressure hose could be used to clean residue from all surfaces in the tank. Do not enter the tank during the cleaning process.
- **The Detergent Rinse** – After rinsing with clean water, fill spray tank and add a heavy-duty detergent at 0.25 L per 100 L of water (some suggest a non-ionic surfactant such as Agral 90 or Agsurf at 0.6 L per 100 L of water). Circulate the mixture for a minimum of five minutes and spray out through sprayer nozzles. Nozzles and screens are removed and cleaned individually with the same detergent solution in a small container. Soaking in this solution for several hours also helps to loosen any deposits.

The above solutions are just components of the overall sprayer cleaning process. Typical rinse instructions will repeat a combination of one or two or all of these basic rinses. Below we will give some generic rinse instructions utilizing the basic rinses as components of the larger cleaning procedure. Never enter the tank during the cleaning process as some cleansers may release dangerous gases.

- Method A – Drain contents of tank – 1 to 2 x Water Rinse – 2 x Ammonia Rinse – 2 x Water Rinse (one just prior to the next spraying event)
- Method B – Drain contents of tank – 2 x Water Rinse – 2 x Detergent Rinse – 2 x Water Rinse
- Method C – Drain contents of tank – Several repetitions of the Water Rinse with nozzles and screens removed and checked for debris. Products: Adrenalin, Altitude, Amitrol 240, Ares.

Group 2 compounds are highly active on sensitive plants so even a small amount remaining in the sprayer can present a risk of injury. They can also occasionally be trapped on the tank walls and plumbing by petroleum-based formulations or adjuvants when tank mixed with other products, resulting in tank residues that may be tougher to remove. A way to reduce the chance of this occurring is to add detergent at 0.25 L per 100 L to the Ammonia Rinse portion to assist with the breakdown of the petroleum coating so that the ammonia may rid the tank of Group 2 product. It is very important to clean sprayers immediately after every use. With a more diverse rotation, the likelihood of damage from lack of care increases dramatically.

For more detailed instructions, please refer to [Saskatchewan's Guide to Crop Protection](#).

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Date: \_\_\_\_\_ Field Name: \_\_\_\_\_  
Operator: \_\_\_\_\_ Crop Owner: \_\_\_\_\_  
Land Location: \_\_\_\_\_ Start Time: \_\_\_\_\_ Finish Time: \_\_\_\_\_

#### CONDITIONS AT TIME BEGINNING SPRAYING

Wind Speed (km/hr): \_\_\_\_\_ Humidity: \_\_\_\_\_ %  
Wind Direction: \_\_\_\_\_ Temperature: \_\_\_\_\_ °C Sunny \_\_\_ Cloudy \_\_\_ Partly Cloudy \_\_\_  
Crop Stress Level: High \_\_\_ Moderate \_\_\_ Low \_\_\_ Dew: Heavy \_\_\_ Light \_\_\_ None \_\_\_

#### FIELD AND SPRAY INFORMATION

Crop Type: \_\_\_\_\_ Water Conditioner: \_\_\_\_\_  
Crop Variety: \_\_\_\_\_ Herbicide Groups: \_\_\_\_\_  
Crop Stage: \_\_\_\_\_ Water Volume: \_\_\_\_\_  
Target Pests: \_\_\_\_\_ Water Source: \_\_\_\_\_  
Nozzle Type: \_\_\_\_\_  
Pesticide \_\_\_\_\_ Rate \_\_\_\_\_ Spray Pressure: \_\_\_\_\_  
Pesticide \_\_\_\_\_ Rate \_\_\_\_\_ Ground Speed: \_\_\_\_\_  
Pesticide \_\_\_\_\_ Rate \_\_\_\_\_ Acres Sprayed: \_\_\_\_\_  
Pesticide \_\_\_\_\_ Rate \_\_\_\_\_ Post Spray Tank Cleanout: Yes \_\_\_ No \_\_\_  
Adjuvants: \_\_\_\_\_ Cleaner Used: \_\_\_\_\_

Comments: \_\_\_\_\_

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Date: \_\_\_\_\_  
Operator: \_\_\_\_\_  
Land Location: \_\_\_\_\_

Field Name: \_\_\_\_\_  
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Start Time: \_\_\_\_\_ Finish Time: \_\_\_\_\_

**CONDITIONS AT TIME BEGINNING SPRAYING**

Wind Speed (km/hr): \_\_\_\_\_  
Wind Direction: \_\_\_\_\_ Temperature: \_\_\_\_\_ °C  
Crop Stress Level: High \_\_\_\_\_ Moderate \_\_\_\_\_ Low \_\_\_\_\_

Humidity: \_\_\_\_\_ %  
Sunny \_\_\_\_\_ Cloudy \_\_\_\_\_ Partly Cloudy \_\_\_\_\_  
Dew: Heavy \_\_\_\_\_ Light \_\_\_\_\_ None \_\_\_\_\_

**FIELD AND SPRAY INFORMATION**

Crop Type: \_\_\_\_\_  
Crop Variety: \_\_\_\_\_  
Crop Stage: \_\_\_\_\_  
Target Pests: \_\_\_\_\_

Water Conditioner: \_\_\_\_\_  
Herbicide Groups: \_\_\_\_\_  
Water Volume: \_\_\_\_\_  
Water Source: \_\_\_\_\_

Pesticide \_\_\_\_\_ Rate \_\_\_\_\_  
Pesticide \_\_\_\_\_ Rate \_\_\_\_\_  
Pesticide \_\_\_\_\_ Rate \_\_\_\_\_  
Pesticide \_\_\_\_\_ Rate \_\_\_\_\_  
Adjuvants: \_\_\_\_\_

Nozzle Type: \_\_\_\_\_  
Spray Pressure: \_\_\_\_\_  
Ground Speed: \_\_\_\_\_  
Acres Sprayed: \_\_\_\_\_  
Post Spray Tank Cleanout: Yes \_\_\_\_\_ No \_\_\_\_\_  
Cleaner Used: \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_

Date: \_\_\_\_\_  
Operator: \_\_\_\_\_  
Land Location: \_\_\_\_\_

Field Name: \_\_\_\_\_  
Crop Owner: \_\_\_\_\_  
Start Time: \_\_\_\_\_ Finish Time: \_\_\_\_\_

**CONDITIONS AT TIME BEGINNING SPRAYING**

Wind Speed (km/hr): \_\_\_\_\_  
Wind Direction: \_\_\_\_\_ Temperature: \_\_\_\_\_ °C  
Crop Stress Level: High \_\_\_\_\_ Moderate \_\_\_\_\_ Low \_\_\_\_\_

Humidity: \_\_\_\_\_ %  
Sunny \_\_\_\_\_ Cloudy \_\_\_\_\_ Partly Cloudy \_\_\_\_\_  
Dew: Heavy \_\_\_\_\_ Light \_\_\_\_\_ None \_\_\_\_\_

**FIELD AND SPRAY INFORMATION**

Crop Type: \_\_\_\_\_  
Crop Variety: \_\_\_\_\_  
Crop Stage: \_\_\_\_\_  
Target Pests: \_\_\_\_\_

Water Conditioner: \_\_\_\_\_  
Herbicide Groups: \_\_\_\_\_  
Water Volume: \_\_\_\_\_  
Water Source: \_\_\_\_\_

Pesticide \_\_\_\_\_ Rate \_\_\_\_\_  
Pesticide \_\_\_\_\_ Rate \_\_\_\_\_  
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Pesticide \_\_\_\_\_ Rate \_\_\_\_\_  
Adjuvants: \_\_\_\_\_

Nozzle Type: \_\_\_\_\_  
Spray Pressure: \_\_\_\_\_  
Ground Speed: \_\_\_\_\_  
Acres Sprayed: \_\_\_\_\_  
Post Spray Tank Cleanout: Yes \_\_\_\_\_ No \_\_\_\_\_  
Cleaner Used: \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_