Tips For Noxious Weed Control

- Always follow the label instructions included with the herbicide.
- Always use a surfactant with your herbicide when spraying noxious weeds. The herbicide will perform better, and you won't need to use so much herbicide.
- Look at the label on the herbicide container. Some herbicides already have a surfactant added to the mixture.
- Target the surfactant to the weed. Dalmatian Toadflax needs a surfactant that can burn through its waxy surface.
- Don't make the mistake this couple made in Porcupine Bay. They bought two ounces of Telar to control their Dalmatian Toadflax, but the retailer had run out of surfactant. So they sprayed the Toadflax only with Telar. After some 10 days, there was no indication that the Telar had done anything on the weed. So they were told to spray again, but this time to include a good surfactant. Within three days of spraying the second time, the Dalmatian Toadflax appeared wilted and dying.
- Develop a plan of action to control your noxious weeds. Confer with the staff at the weed board for their recommendations on how best to tackle this problem.

A good surfactant will burn through the waxy surface of Dalmatian Toadflax and allow the herbicide to penetrate into the weed. Try using an MSO or silicone surfactant like Hasten®, SYL-TAC®, FastStrike® or Dyne-Amic®, so the herbicide can get inside the noxious weed for an effective kill.

Hairy plants like Common Mullein or Houndstongue also need a good surfactant, or the herbicide will just bead up on the plant hairs without penetration into the weed.

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Herbicides for noxious weeds work much better blended with **surfactants.** The price of any surfactant is well worth the cost since it makes the herbicide much more potent and effective, better able to kill noxious weeds.

What About Surfactants?

Two Leaves: the **top leaf**, sprayed with herbicide **without surfactants,** beads up on the leaf surface without penetration. The **bottom leaf** was sprayed **with herbicide and surfactant** allowing the mixture to spread, stick and penetrate into the weed, thus killing it.

Surfactants work with herbicides allowing the mixture to:

- **Stick.**
- **Spread.**
- **Penetrate.**
- **Get into the weed before rain.**
- **Kill the noxious weed and**
- **Avoid vaporization and drift.**

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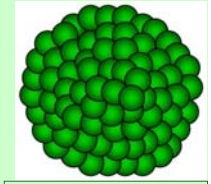
What is a Surfactant ???

Definition

The term "**surfactant"** is a contraction of "**Surf**ace **act**ive **a**g**ent**". **Surfactants** are organic compounds, soluble in water or chemical solutions, that allow mixtures to blend, adhere and work better.



Surfactant molecules in soap surround soil particles, break them up and suspend soil particles in the wash water.

When used with **herbicides** for noxious weeds, **surfactants** are chemical compounds that **promote the movement of the active herbicide ingredient into the plant.**

Surfactants In Everyday Life

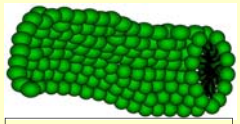
Dishwasher soap and **detergent** would just be a glob of jelly with no cleaning properties without surfactants.

The surfactant in detergent improves the wetting ability of water; loosens and removes soil with the aid of wash action; and emulsifies or suspends soils in the wash solution. The surfactant molecules surround the soil particles, break them up and force them away from the surface of the fabric; then suspend the soil particles in the wash water. Thus, you get clean clothes!

Surfactants- What to Consider

- **Always use a surfactant with your herbicide when spraying noxious weeds. The herbicide will perform better, and you won't need to use so much herbicide.**

- **Look at the label on the herbicide container.** Some herbicides already have a **surfactant added** in the mixture. **Some herbicides work better with one surfactant than another. Check the herbicide label for its recommendations on surfactants.**
- **Target the surfactant to the weed.** Some noxious weeds need **a harsher surfactant. Dalmatian Toadflax** has a waxy surface and needs an **oil or silicone surfactant** to burn through its waxy leaf.



The surfactant allows the herbicide mixture to spread around the plant stems and leaf allowing it to penetrate into the plant.

- **Are there social or political concerns with spraying herbicides?** Some surfactants might mask the herbicide's smell or lessen its stink.

- **Consider the leaf structure of the targeted weed.** The hairs on **Common Bugloss, Common Mullein** and **Houndstongue** will hold the pesticide mixture on the surface without penetration. A good surfactant is needed to penetrate into the weed, or the mixture will just bead up. **In contrast, the leaf structure of grass needs a milder surfactant.**
- **Consider the pH level (alkalinity or acidity) and the hardness of your water. Surfactants can modify the pH of water for a more effective herbicide.**
- **Are there nearby plants that might be adversely affected by a harsher surfactant?** Spraying **field bindweed** in a wheat field might require a milder surfactant.
- **Are there weather factors to consider? Do you need to get the herbicide into the weed quickly?** A good surfactant will allow the plant to absorb the herbicide **faster.** Do you expect **rain** in a couple of hours? **Are you spraying in the morning?** The stomates or small openings on the leaves of the plant will close up and prevent absorption of the herbicide later in the day, in hot and dry weather.

In the first mixture, no surfactant was added, and the two ingredients never blended. Surfactants were added to the second mixture allowing it to blend much quicker.

- **Adding a surfactant might help prevent vaporization and drift of the herbicide fumes to nearby favorable plants.** As an **adjuvant,** the surfactant will facilitate mixing, application and pesticide efficacy. The **adjuvant** enables an applicator to customize a formulation to be most effective in a particular situation.
- **Adjuvants** include **surfactants, stickers, extenders, activators, compatibility agents, buffers and acidifiers, deposition aids, de-foaming agents, thickeners and dyes.**
- **The surfactant may change the resistance of a weed to a particular herbicide.**
- **Proper use of a surfactant promotes plant and crop safety. Less herbicide is needed when the proper surfactant is used.**

Some Surfactants Found Locally

♦ SYL-TAC®

A modified **seed oil** and **silicone-surfactant** blend. Its primary use is in vegetation management. It is used for better herbicide leaf penetration with weeds with **waxy surfaces.** It is recommended for **Dalmatian Toadflax.** It also increases herbicide uptake in **hot, dry conditions. Do not apply to tree fruit, lawn turf, golf greens or sensitive crops.**

SYL-TAC® is available from **Edwall Chemical (509-796-3301)** on **Highway 2** in **Reardan, for about $16.92/quart**; and from **Wilbur-Ellis (509-928-4512**) at **12001 E. Empire Way** in **Spokane Valley,** for about **13.60/quart.**

♦ HASTEN®

A spray adjuvant developed as a **penetrating-surfactant concentrate** with **excellent wetting and penetrating** characteristics. It is designed to be tank mixed with **desiccants**.

HASTEN® is available from **Edwall Chemical (509-796-3301),** for about **$21.53** for **2-1/2 gallons**; and from **Wilbur-Ellis (509-928-4512)** for about **$32.50** for **2-1/2-gallons.**

♦ Dyne-Amic®

A spray adjuvant of highly-refined, modified **vegetable oil** and **non-ionic organo-silcone**.

Dyne-Amic® is manufactured by **Helena Chemical Co.** and can be ordered at **Davenport Building Supply (DBS) (509-725-7131), 801 Morgan** in **Davenport; McGregor's** in **Davenport (509-725-4769);** or **Edwall Chemical (509-796-3301),** for about **$61.30/gallon.**

♦ Induce®

A **non-ionic, low-foam wetter/spreader adjuvant.** The formulation is diluted for consumers, and you may need twice as much for your mixture as the other surfactants listed.

Induce® is the only surfactant available on-shelf from **Davenport Building Supply (509-725-7131),** for about **$12.50/quart** or **$26.50/gallon.**