

Crop Protection with SO-IL Service Landoil

Landoil is a combination of pure food grade soybean oil with emulsifiers and stabilizers. This combination is blended to serve as a carrier, drift reduction agent, surfactant, penetrant and spreader/sticker. **Landoil** is a "Homegrown Product" and is gentle to the crop. **Landoil** should be used as a substitute for an MSO, crop oil or any other petroleum based oil product when applied through conventional sprayers.

CARRIER

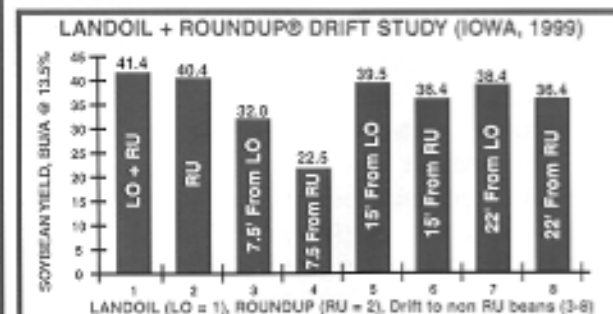
Landoil has the unique advantage of serving as a pesticide carrier when mixed with your spray tank water or liquid fertilizer before adding each pesticide. After mixing, each oil droplet will contain some of the active ingredient of the pesticide.

SPREADER/STICKER

The properties of **Landoil** enable pesticides to adhere to the leaf surface and resist washoff; pesticides can be rainfast in 20 minutes.

DRIFT REDUCTION

The addition of **Landoil** to the spray program reduces the number of smaller droplets when spraying and reduces the amount of pesticide drift.



Dr. Bertel Schow, Study Director

Location: Cedar Falls, IA, 1999 Trials

Replicated plots show the positive differences in yields when Roundup Ultra® is used with **Landoil** to reduce drift. Non Roundup Ready® soybeans were planted adjacent to Roundup Ready soybeans treated with Roundup Ultra (RU). Measurements were taken in 3 compass directions from the treatment. The data are averages of the yields taken at 7.5, 15 and 22 feet from the treated areas in the non-Roundup Ready soybeans.

SURFACTANT

As a surfactant, **Landoil** improves the performance of pesticides on the target crop. When used at recommended rates, coverage improves and the pesticide can be rainfast in 20 minutes. As a substitute for crop oil concentrate (COC), **Landoil** improves control from postemergence herbicides (e.g. Poast® and Fusilade®) with no reported crop injury.

PENETRANT

As a penetrant, **Landoil** enhances the ability of herbicides to move into the plant through the surface of the leaf. This penetrating property of **Landoil** also improves insecticide and fungicide control.



Highest Quality Soybean Oil Available

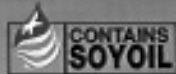


DISTRIBUTOR:

SO-IL Service, Inc.

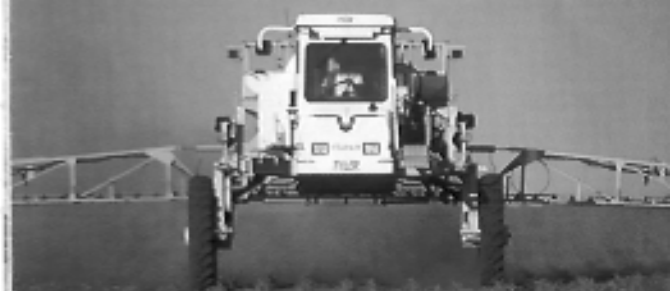
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• **Farm Profitably with an Environmentally Friendly Product**

• **Reduce Pesticide Costs 30% to 60%**



Environmentally Safe

Why Should I Use SO-IL Service Landoil?

SO-IL Service Landoil is a food grade soybean oil carefully blended with emulsifiers and stabilizers that offer superior features and benefits when used in the application of pesticides.

- **Reduced Alkaline Hydrolysis—Landoil** slows the effect that hard water has on the performance of pesticides. The effects of alkaline hydrolysis on many crop protection chemicals is well documented. Because most chemicals are acid and most water is alkaline, decomposition begins when the two are mixed.
- **Environmentally Friendly—Landoil** is completely biodegradable. Unlike some crop oil concentrates or other petroleum adjuvants, **Landoil** leaves no residues in your soil profile. Leaching of soluble pesticides is minimized, which helps keep chemicals out of water supplies.
- **Reduced Volatility—Landoil** significantly reduces the volatility associated with some pesticides. Potential herbicide off-target injury is reduced and improved product performance occurs. **Landoil** lengthens insecticide spray intervals for some insecticides when volatility is a concern.
- **Reduced Particle Drift—Landoil** can help maintain larger droplet sizes and reduce drift from applications through conventional sprayers. Sprayers produce a wide range of droplet sizes—from very small to very large. Those drops smaller than 100 microns move much further than large droplets (350 to 500 microns), especially in windy conditions or temperature inversions. Herbicide drift can injure plants that are sensitive to herbicides; drift from insecticides may cause contamination to unregistered crops. The use of drift reducing nozzles, proper spray pressures and **Landoil** all help to keep drift from being a concern.
- **Reduced Degradation—**The addition of **Landoil** reduces oxidation and photodecomposition (degradation by sunlight). All chemicals vary in their sensitivity to sunlight and in their rate of oxidation. When chemicals are used with **Landoil**, the effect of these factors is greatly reduced.
- **Washoff Protection—**Pesticides used with **Landoil** are rainfast on leaf surfaces in 20 minutes. Tests show that after **Landoil** has dried, a rain will not wash it off. Pesticides should always be sprayed on dry leaf surfaces.
- **Crop Tolerance—**Crops have shown a remarkable tolerance for **Landoil**. No significant burn from postemergence applications has been reported.
- **Spreader—Landoil** has a "spread factor" that is three to four times that of water. When used in a postemergence application, **Landoil's** spread factor increases tenfold on leaf surface which greatly improves insect, weed and disease control.
- **Improved Penetration—Landoil** is a nonionic surfactant (NIS) and improves the penetration of herbicide into the waxy covering on broadleaf and grass weeds. Improved activity of insecticides with **Landoil** is also shown to help penetrate the protective coverings of insects.
- **No Additives Needed—Landoil** does not need additional surfactants, stickers, spreaders or penetrants. One to two quarts of ammonium sulfate (AMS) solution per acre (1 to 2 pounds of dry product per acre) may be helpful when spraying hard to control broadleaf weeds, such as velvetleaf. Hard water and/or high pH water should be buffered with **SO-IL Boost pH Equalizer**.

Application Instructions

Herbicides, Insecticides, Fungicides

Preemergence and preplant incorporated applications: Mix a minimum of one quart **Landoil** per acre with the water in your spray tank. Only use 8 to 12 gallons of total spray per acre.

Postemergence applications: Mix a minimum of one pint **Landoil** per acre with the water on your spray tank. If your chemical rates exceed these minimums, increase the rate of **Landoil** to at least equal the chemical rate. Read and follow all label directions of the pesticides used.

Mixing Directions for Weed, Insect and Disease Control

1. Liquid pesticides:

Mix **Landoil** with your spray water of liquid fertilizer right in the sprayer. Each pesticide must then be poured or pumped into the sprayer. Add each pesticide separately.

2. All other formulations:

When using dry flowables (DF), water dispersible granules (WDG), wettable powders (WP), gel packs or water soluble bags (WSB), first make a slurry of water and the pesticide. Then add the slurry to the spray tank water or liquid fertilizer containing **Landoil**. Add each pesticide separately to the spray tank.

3. Agitation in the spray tank is needed to ensure good mixing. While agitating, add the amount of water or liquid fertilizer needed to complete the spray batch.

4. When using two or more pesticides add each pesticide separately into the sprayer which already has an equal or greater rate of **Landoil** mixed in the water or liquid fertilizer.



Available in 1 and 2½ gal. jugs;
5 gal. pails; 30 and 55 gal. drums;
275 gal. mini bulk and bulk.