

AGRICULTURAL GUIDE

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Conservation tillage

No-till checklist



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Field Conditions

- ✓ Choose well-drained fields, if planting early.
- ✓ Select fields where problem weeds can be controlled with available herbicides.
- ✓ Start with non-compacted soils.

Cover (residue) management

- ✓ You'll need 60 to 70 percent cover to substantially reduce erosion and to conserve moisture effectively.
- ✓ Create a good seedbed, but disturb as little residue as possible.
- ✓ Residue-clearing devices (V-set disks, "trash whippers," tines, or similar devices) may be necessary where residue has been chopped, wet, or lying loose.
- ✓ If you're planting in a cover crop or sod, kill early if the spring has been dry. Kill at planting time if soils have been wet.
- ✓ If you're double cropping, leave a 6 to 12-inch stubble, and spread the straw evenly.

Fertility

- ✓ Fertilize and lime soils well during conventional tillage (to a medium-to-high test level).
- ✓ Phosphate and potash may be surface applied before no-till planting, preferably in the fall.
- ✓ Row fertilization may be beneficial when planting early in cool soils or when small amounts are needed.
- ✓ Increase nitrogen rate on corn by 15 percent if you're using dry or liquid nitrogen on the surface.
- ✓ Anhydrous ammonia applicators are available with coulters and *wings* to apply nitrogen for no-till.
- ✓ Monitor soil pH in the upper 1 to 2 inches, and apply lime according to soil test recommendations.
- ✓ Plowing or chiseling every four to five years may improve nutrient distribution and break compacted zones.

Planting and machinery adjustment

- ✓ Don't plant if too wet to plant conventionally.
- ✓ Plant after soil temperatures at 4 inches deep reach 50 degrees F for corn, 55 degrees for soybeans, and 60 degrees for sorghum.
- ✓ Choose a coulters that works best in most field conditions. Narrow fluted (1 inch or less) or ripple coulters generally work best under variable conditions.
- ✓ Coulters should be close to seed openers for better tracking, particularly on sloping land.

- ✓ Set coulters to penetrate about ½ inch deeper than the desired seed depth. Check actual seed placement and soil contact. Then, make adjustments.
- ✓ Control the seed depth at 1½ inch for corn, and 1 inch for soybeans when planting early or in moist soils. (Some herbicides require deeper soybean placement.)
- ✓ A common problem is closing the seed slot. You can get good seed-to-soil contact by using press wheels that close the slot (or modify them to do so). Add weights (barrels of water, concrete blocks, or tractor weights, etc.) or increase down-pressure on springs spring size, if needed, to make the different planter unit parts function properly.
- ✓ Use high quality seed.
- ✓ Increase seeding rate by 10 percent unless conditions are ideal.
- ✓ Check actual seeding rate by uncovering seed.
- ✓ Planting speed in sod, moist soils, or under rough conditions should be no more than 3½ mph.

Insects, diseases, and rodent control

- ✓ Insect problems may increase under no-till; treat for insects that have consistently been a problem.
- ✓ Only certain insecticides and methods of application are cleared for no-till; check labels.
- ✓ If no treatment is applied at planting, check stands frequently, and use a rescue treatment if needed.
- ✓ Consider seed treatment to control early seed and seedling diseases.
- ✓ Rotating crops or tilling may aid pest control.
- ✓ Consider the use of a rodenticide when planting in heavy residue.

Weed control

- ✓ Burn down living vegetation with Paraquat or Roundup. The latter is preferred to control tall or perennial weeds. To control certain broadleaf weeds, 2,4-D or Banvel may be used before corn.
- ✓ Liquid nitrogen may aid in burn down, allowing use of moderate rates of a contact herbicide.
- ✓ Higher gallonage and/or pressure may be necessary for good herbicide coverage.
- ✓ Use only herbicides that are labeled for no-till.
Read the label. Follow instructions closely.
- ✓ When using soil herbicides on heavy residue, consider using the higher rate of the range for your soil.
- ✓ Be prepared to use postemergence herbicides.
- ✓ No-till cultivators are available, but they reduce cover.

For more information, see Guide 4080 "No-Till Planting Systems."

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