No-till farming is revolutionizing farming worldwide. In a no-till system, a producer:

- Protects the soil year round with crop residue and cover crops; and
- Plants crops with minimal soil disturbance and without tillage.

In the United States, the number of farms adopting no-till continues to rise steadily. In 2002, more than 60 million acres, or 23 percent of the total, were no-till, compared to 7 million in 1990. In Pennsylvania, no-till farmers can be found in most counties.

Why should I consider no-till?
Adopting no-till can increase your operation’s efficiency and profitability, while also improving the soil and protecting water quality.

What are the economic benefits of no-till?
No-till increases operation efficiency and leads to higher profits in the following ways:

- Eliminating tillage saves time and labor, allowing farmers to manage more acres.
- Not using tillage equipment saves on fuel and equipment maintenance costs.
- When practicing continuous no-till, farmers can combine individual contour strips or other small fields, while controlling erosion and reducing yield losses from field edges.
- Over time, soil improves, increasing water filtration and drought tolerance.

What are the water quality benefits of no-till?
No-till is an environmental best management practice that reduces soil erosion and nutrient runoff.

Is my soil conducive to no-till farming?
Soil conditions throughout most of Pennsylvania are conducive to no-till farming with the right preparation and appropriate timing. Cold and wet soils present challenges for no-till production of corn, but these challenges can be overcome with the right strategies.

How does no-till improve the soil?
No-till increases the soil’s organic matter and biological activity. Soil structure and water infiltration improve, and compaction is minimized.

How does no-till help conserve soil moisture?
Many long-term, no-till farmers notice improvements in water infiltration or absorption in their fields due to the soil’s increased organic content. No-till soil holds more water which is particularly beneficial during drought. In addition, no-till farmers can take advantage of seasonal moisture and plant earlier. Runoff, created during heavy storms, is limited on no-till fields. As a result, more water is available for crop production.

Doesn’t no-till increase chemical use, which is bad for the environment?
Not really. No-till systems encourage the use of crop rotations and cover crops. These practices help to reduce pesticide use, overall. During the transition period, no-till systems may require increased pesticide use. After no-till systems are established, pesticide use often is reduced.
With till and no-till systems, herbicides may be applied after planting to control weeds. No-till uses a “burndown” herbicide to control weeds as a substitute for tillage. Also because runoff is reduced in no-till systems, the loss of pesticides and other pollutants from the field to any water body is reduced significantly.

**What type of operations should consider no-till?**
No-till is practiced by large and small operations of all kinds, including grain, dairy, hog, poultry and vegetable farmers.

**How do I begin the transition to no-till?**
Successful no-till takes time, so it is best to plan ahead, start small and transition slowly.

**What is the best way to approach no-till?**
No-till requires a “systems” approach, meaning it involves all aspects of your operation. Considerations include crop rotations, cover crops, soil management, climate evaluation, residue management, variety selection, pest management, fertilization and liming, and equipment.

**How long is it before I see the benefits of no-till?**
Time and labor savings are immediate. Soil quality benefits may take three or more years to appear.

**What should a crop rotation include for successful no-tilling?**
A crop rotation should include grasses which may include small grains and/or cover crops, high residue crops, forage crops, crops with different rooting systems, and mixes of grass and legume crops.

**What about manure concerns?**
Many people believe that all manure must be incorporated. However, if adequate surface residue exists and soil loss is minimized – both of which occur with no-till – incorporation is not always needed to control manure runoff. In fact, many producers have significantly improved their no-till system by using surface applied manure.

To address odor concerns, cultivate good relationships with your neighbors and use good judgment when applying manure close to another property.

**Who should I contact for help?**
Farmers throughout Pennsylvania practice no-till. So, talk to your neighbors. Information also is available from your county conservation district, local USDA-Natural Resource Conservation Service or Penn State Extension offices.