

MINIMUM TILLAGE - ONE COUNTY AGENT'S VIEWPOINT

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Each year in Levy County, numerous acres planted to corn and other crops are damaged or destroyed by high winds and blowing soil traveling across young stands of agronomic and vegetable crops. In some years, soil erosion due to wind not only damages crops by "sand blasting" but at times even reduces herbicidal activity by disturbing treated pre-emergence areas.

Our deep sandy soils also lend themselves to leaching of nutrients as well as compaction problems which potentially restrict root growth. Continuous tillage of row crop land by discing, harrowing and plowing have created serious compaction problems in some of our deep sandy soils at depths of six to twelve inches. Evidence of this has been demonstrated by subsoiling two to three inches below this compacted zone and comparing plant growth and yield to conventionally tilled land.

In essence, as a County Agricultural Agent, it is important to keep abreast of the latest technology and innovations in cropping systems and tillage equipment. Inflationary times and increasing fuel costs have increased the unit cost of production. Methods are needed to reduce unit costs while maintaining or increasing current production to make row crop production economical. Over production may create marketing problems by reducing prices paid to growers, but it will be up to producers to limit or restrict the acreage planted in order to influence supply and demand. Economical and efficient production practices are needed to maintain an economically sound agriculture for Florida.

To utilize minimum tillage, a producer must evaluate his own set of conditions on his farm. Soil types, crop rotations, managerial abilities and other resources must all be evaluated.

The major advantages of minimum or reduced tillage have been demonstrated to be; reduction of soil erosion, energy conservation, less soil compaction, improved timing of crop establishment and planting and in some instances, reduced machinery investment.

Some major disadvantages have also been observed. When corn is planted in February or possibly Early March, soil temperatures may remain lower during extended periods when a mulch system of minimum tillage is used. Cold, wet soils may inhibit germination or early season root growth. Insects, particularly soil insects such as cutworms, may be more prevalent when heavy mulches of winter cover crops are used. Also, producers will need to put their best managerial ability together because there is less room for error under minimum tillage systems, particularly under mulch systems of minimum tillage. More reliance is

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needed on herbicides for weed control programs. Proper liming of soils for optimum herbicide activity, timing of spray applications, proper **calibration** of equipment and the potential use of directed sprays need to **be included in the management plan.**

Producers should be cautioned to start on a small scale until sufficient experience is gained. They should also attend shortcourses, seminars, demonstrations and field days to see and learn of multi-cropping, minimum tillage systems.

It is a package approach. We do not want to plant into a weed field. Plan through your County Extension Agent before implementing minimum tillage practices. A management plan to fit your particular farm and resources will be needed. Planning before implementation of new farming methods reduces chances of failure and insures proper scheduling of production activities. Calling your County Agent when problems occur because of poor planning often results in no recourse for a solution. The cropping system and method of tillage should be well planned and fit to the individual farm and management regime. The planting and management of the succeeding or previous crop may be just as much or more important than the current crop being grown under minimum tillage methods. Subsoiling may not be needed in all instances, and fields should be inspected as to need for subsoiling prior to planting. The subsoiling will require more fuel and horsepower than doing strictly no-till plantings. Proper weed identification and mapping of fields are extremely important in the selection of proper herbicides for a given situation. A working knowledge of minimum tillage practices is needed by County Agents. It is essential that the agent make available to the producer the most current information on minimum tillage.

Weather conditions affect our yields regardless of the cropping system being used. The weather causes our greatest risk in row-cropping today. We cannot control weather patterns but the use of minimum tillage in many situations may help insure better growing conditions and reduce adverse effects such as soil erosion, leaching of nutrients, inadequate moisture at planting time, drought stress of crops, labor problems and time.

As multiple cropping systems are put into practice by producers, more intense use of available land will occur. As energy costs increase, minimum tillage systems will fit more and more into the picture of modern day agriculture.

Minimum Tillage acreage has increased since 1978, in Levy County. Corn, Soybeans and Grain Sorghum have been planted following winter rye and the prior years' crop residues by minimum tillage methods. Several thousand acres of pines have been clear cut in the past three years. This will increase the potential of crop damage by wind erosion. Also, energy costs are affecting our ability to irrigate economically. Minimum tillage practices should help to reduce both wind erosion and soil moisture losses. Again, we must learn to fit this system of cropping to our land and management, keep current on production practices, and remember that a total management plan is needed to insure the best use of capital and other resources.