

# Reduced tillage lowers fuel costs, land erosion

By J.T. SMITH

**D**URING 2009, many producers likely will turn every stone trying to save money in these tough times.

Conservation tillage is sure to get a closer look in both crop and forage production, too.

In North Texas, wheat often provides grazing for as many as 2 million cattle in a season.

John Sij, AgriLife Extension agronomist, Vernon, has been looking at nitrogen and forage response relating to tillage at the Smith-Walker research farm there. His work is done under commercial conditions.

"When talking about tillage, we have to look at environmental conditions," Sij says.

This includes frequent droughts, the traditional high winds, temperatures, highly erosive soils, low yields and production inputs, low returns, and occasional hard rains.

Conventional tillage can sometimes be excessive and cause moisture loss as well as lower organic matter, Sij notes. Extreme wind and severe erosion from water also can occur under conventional tillage, resulting in dust storms.

In the case of forage, producers actually can get grazing earlier under no-till farming some years, he says. In fact, some of the best wheat stands Sij observed in 2008 was in no-till fields that had tolerated dry conditions well.

"No-till conserved soil moisture," Sij reports.

Overall, he says the benefits

## Key Points

- Conservation tillage can reduce erosion by wind and water.
- No-till also works where wheat is grown for forage or grain.
- Strip tillage has the benefits of both conventional till and no-till.

of conservation tillage include reduced fuel and labor costs, improved rainfall capture, and better infiltration.

In dollars difference between conventional tillage and no-till farming in grain-only production systems, no-till still paid. The bottom line in the planned returns for 2007-08 was \$63.22 per acre under conventional tillage, compared with \$79.38 per acre under no-till.

"This represents a \$16 advantage for no-till," Sij says. That advantage could narrow if glyphosate prices increase in 2009.

Sij says whenever a prior crop year is a poor one, it's especially important to test for nitrate amounts in the upper 2 feet of the soil because it doesn't always get used.

## Strip tillage pays

On the Stiles Farm at Thrall, Texas, strip tillage is working.

Experts at the Stiles research farm found that during times of expensive diesel, high fertilizer, and drought, strip-tillage practices clearly can be beneficial to farmers.

"We've been using strip tillage primarily as a way to conserve moisture and con-

serve residue this year," says Archie Abrameit, Stiles Farm manager and Texas AgriLife Extension specialist. "I think it's paying off."

In a wet year, the benefits of strip tillage aren't so obvious. But when Abrameit and colleagues looked at five years of data, reflecting some dry seasons, strip tillage showed an advantage.

He says advantages of strip till as a conservation method, which tills the soil only in narrow strips for seed plantings, include fuel savings, and reduced trips and equipment use.

## Oklahoma finds benefits

Chad Godsey, oilseeds agronomist at Oklahoma State University, Stillwater, says producers throughout the Great Plains are reducing soil erosion and conserving soil moisture through conservation tillage.

"Conservation tillage maintains residue at the surface," Godsey notes. "Increased surface residue provides insulation, reduces average soil temperatures and prevents evaporative losses of soil moisture when compared to bare soils."

Strip-tillage, by only removing the mulch and residue in the seed row, encourages more rapid spring warming of the strip of bare soil. Godsey says strip-till machines today usually consist of a coulter followed by a knife-shank that penetrates 4 to 8 inches below the soil surface. Disks are set



**STRIP TILL AND PLANT:** Some producers are finding that strip tilling and planting in one field operation fits them best. The fieldwork can be done in one operation saving time, fuel and labor, while conserving limited moisture.

behind the knife-shank to close the gap left by the knife and also build a small berm.

"Some strip-till machines have roller baskets on the back to help level the tilled zone," he notes.

Godsey says strip till provides the benefits of both no-till and conventional tillage systems. "Maintaining inter-row residue will maintain no-tillage advantages — such as reduced evaporation of soil moisture — while increasing soil temperature in the seed row," he notes.

In parts of western Oklahoma, strip till in the fall may be beneficial in order to replenish soil moisture in the seeding zone, compared to strip till a few days prior to planting.

He says some may find strip till and planting in one operation to fit them best.

"The benefit of this is that all fieldwork can be done in one operation," says Godsey, who also works as OSU Extension cropping systems specialist.

Success of the system depends on the ability to plant directly on top of the narrow tilled strip where the fertilizer

was placed.

That means matching the rows to equipment and having a good tractor driver.

Although strip tillage can be achieved without GPS satellite technology, GPS guidance systems like real-time kinematic make it far easier — especially when returning to fall strips in the springtime when they may no longer be visible.

OSU work shows strip till can fit into many cropping systems throughout Oklahoma.

Strip-till farming is an excellent way of converting cropping systems from conventional till to no-till systems because strip till provides benefits of both.

## More information

Learn more at [www.okstate.edu](http://www.okstate.edu) or [www.tamu.edu](http://www.tamu.edu).

Meanwhile, a two-day No-Till Conference is Feb. 9-10 at the Oklahoma City Sheraton Hotel. Registration is \$120, and registration information is available online at [oces.okstate.edu/notill](http://oces.okstate.edu/notill). Registration does not cover lodging. For those wishing to stay at the Sheraton, call 800-325-3535.

# Drought-tolerant safflower appeals to Texas

By J.T. SMITH

**S**AFFLOWER may be inching its way into Texas as an alternative crop.

It has been grown commercially in California since 1949. The oilseed crop also is produced in North Dakota, South Dakota, Idaho, Montana and Colorado. It's an old crop that was found in Egyptian tombs more than 4,000 years ago. It's not bothered by many pests — mainly aphids and grasshoppers.

Calvin Trostle, Texas AgriLife Extension agronomist, Lubbock, says safflower is very drought-tolerant. It has a deep taproot some 5 to 15 feet long. It's a

## Key Points

- Safflower may be an emerging oilseed crop for the Southwest.
- Crop has deep taproot, giving it good drought tolerance.
- Safflower uses conventional planting, harvesting equipment.

member of the thistle family, so use your gloves, Trostle advises.

For those with irrigation, drag hoses would be a perfect fit, he notes. Winter safflower has indicated even better water efficiency than spring safflower. Irrigated yields vary at 2,000 to 4,000 pounds per acre.

Safflower produces a high-

quality oil — both oleic and linoleic. Oil content ranges from 25% to 43%. It also makes a high-protein feed. Certain varieties make great bird feed. Trostle suggests winter-hardy varieties.

Trostle planted safflower in May and June, but feels it can be planted much earlier, perhaps in late March and April. It uses both conventional planting and harvesting equipment.

Texas Tech University grew successful safflower in 40-inch rows. The seed is about the size of a wheat or barley seed.

Safflower has a relatively short growing period of 120 to 150 days, and needs only minimal herbicides such as Treflan,

Sonolan, and Trilin or "yellow herbicides." Other herbicides used with safflower include Dual, Poast, Goal, and Eptam, or EPTC, as preemergence selective herbicides, as well as Gramoxone and Roundup for fallow weed control.

## Marketing

Markets for safflower include California Oils Corp. in Richmond, Calif., and Dreamland Industries Inc. in Abilene, Texas.

The crop should be covered with insurance to meet 2008 Farm Bill guidelines. A Risk Management Agency for Actuarial Change information is under way to give to your

local crop insurance agents. It's expected to be about a one- to three-month process.

Some contract details to expect:

- typical dockage for trash (implies need for professional harvesters)

- dockage for moisture content above 8%

- bonuses for higher oil content

- bonuses for multiyear contracts

For more information, contact Shane Robertson, Dreamland marketing manager, at 325-513-3100 or e-mail him at [shane@the.trinityranch.com](mailto:shane@the.trinityranch.com). Or, send e-mail to [raytempleton@beltway.org](mailto:raytempleton@beltway.org) or call 325-513-4217.