

**Corn Talk News**  
**RESEARCH**  
**UPDATE**

---

**CORN TALK NEWS**  
PENNSYLVANIA MASTER CORN GROWERS ASSOC., INC.

**ENVIRONMENT-  
 ENHANCING  
 LEGUME  
 LIVING MULCHES  
 FOR CORN**

**Dr. Nathan Hartwig**  
 Department of  
 Agronomy  
 Penn State

The use of a permanent living ground cover into which corn, soybeans, small grains and forages can be planted using minimum or no-tillage cropping practices is possible.

Research on the use of crownvetch as a living mulch has been going on at Penn State since 1975 and its use as a living mulch is the ultimate soil conservation practice. Since crownvetch is so slow in establishing, birdsfoot trefoil and annual medics can be mixed with crownvetch to provide quick cover but will be gradual-

ly crowded out over a period of years by the crownvetch.

These cover crops prevent surface water runoff from ever getting started, virtually eliminating soil erosion and nutrient and pesticide runoff from even the steepest slopes, provide up to 40 pounds of nitrogen per acre, and still give the farmer the freedom to grow the crops he wants in the amount he wants with equipment designed for large fields.

Soil loss in Pennsylvania is 9 to 13 tons per acre each year from tilled and cultivated cropland. Because soil is produced from parent material at the rate of only 4 to 5 tons annually, the annual net loss is 5 to 8 tons.

Soil erosion is a natural process which is greatly accelerated by human activity, specifically when vegetation is destroyed or crop residues buried through tillage. Conservation plans are currently



**Fayette County Extension Agent Don Fretts examines one of the birdsfoot trefoil/crown vetch living mulches established this year in a Fayette County cornfield.**

required by all producers tilling the soil according to the Pennsylvania Clean Streams Law.

Producers receiving USDA benefits are also required to have a conservation compliance plan which should have been fully implemented by 1995. The intent of these plans is not only to reduce soil erosion and protect water quality, but to retain long term soil productivity.

**Benefits Of  
 Cover Crops**

- Erosion control. Farmland

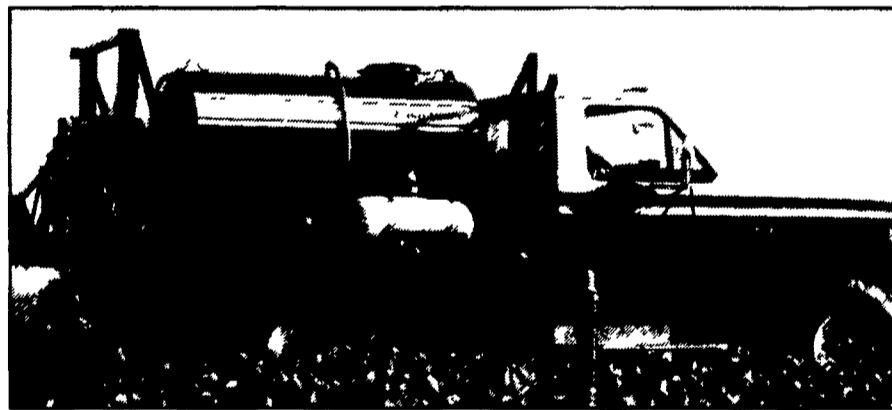
is most susceptible to erosion when there is no vegetative ground cover or plant residue on the soil surface. A cover crop provides a vegetative cover during those periods when a crop is not present to cushion the force of falling raindrops, which would otherwise detach soil particles and make them prone to erosion. It also slows the rate of runoff, thus improving moisture infiltration into the soil. The goal is to reduce soil erosion to something less than 4 to 5 tons per acre per year. In a study conducted in

1977, the soil loss during the growing season was 14 tons/acre on a plowed field, about 1/2 ton/acre in a no-till corn field, and only 40 to 50 pounds/acre where birdsfoot trefoil and crownvetch were present as living mulches.

- Reduce surface water pollution. Due to the almost total elimination of surface water runoff from the continuous presence of groundcovers, the loss of nutrients and pesticides by this route are almost eliminated. This practice would vir-

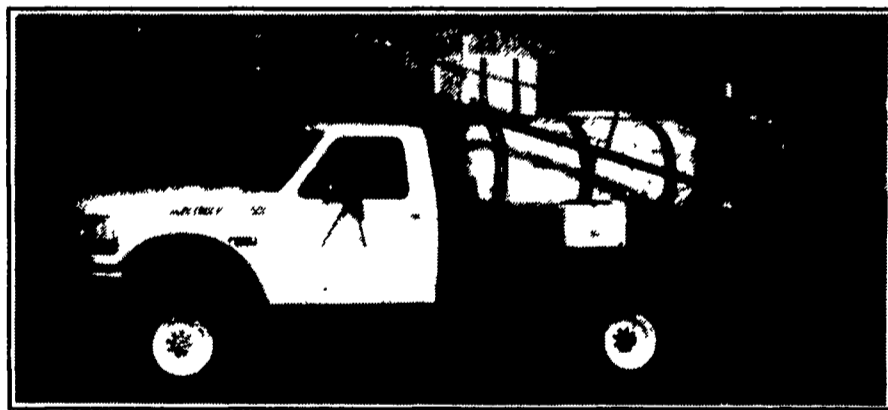
(Turn to Page 21)

**The Lor★AL FS500™  
 is the First Compact Sprayer  
 Truly Built for the Custom Applicator**



- F-350 Ford 4WD-XLT package
- 7.3 diesel IHC engine - 210 HP
- 5-speed manual transmission
- 45' or 55' center pivot fully hydraulic no-bounce Benson boom
- PTO mounted direct drive hydraulic system
- 500-gallon stainless steel tank

**The Agri-Truck 500™ from Ag-Chem is a  
 year-round, multi-purpose vehicle.  
 Use it for spraying, hauling, and towing.**



- F-350 Ford 4WD-XLT package
- 7.3 diesel IHC engine - 210 HP
- Manual or automatic transmission
- Heavy duty flatbed
- Recessed fifth wheel
- 500-gallon poly elliptical tank
- 45' or 60' hydraulic boom
- Quick mount spray system

*And Many Other Standard & Optional Features Available For Both Units.*

**Serving the Farming Industry for over 30 Years**  
**1188 Enterprise Rd., East Petersburg, PA 17520**

**CALL TOLL FREE: 1-800-760-8800**



**FOR MORE INFORMATION & A NEW 1996 PARTS CATALOG**