

# Agronomy Notes

Capital Region Extension Agronomy Team

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## Wheel Traffic Affects Alfalfa

In January, a conference was held in Camp Hill dealing with silage for dairy farms. One presenter was Dr. Dan Undersander, from the University of Wisconsin, who spoke on "Minimizing Wheel Track Effects on Forages".

Investigations by agricultural engineers have shown that during one forage cutting, using a 12 foot mower and traditional hay harvesting equipment, that 50% of the field is traveled over. Unfortunately, this wheel traffic can result in physical damage to the soil (compaction) and the plant. Soil compaction is related to soil type, soil moisture condition, axle weight, tire design and inflation pressures. Plant injury is to crowns and physical breaking of new shoots when delayed harvest injures new regrowth.

Forage harvest is a challenge under ideal conditions, think of irrigated fields in Idaho or California. In the east, harvest must occur during narrow windows of satisfactory weather. How frequently do producers get on fields that are too wet, immediately after a rain front comes through? Traffic on these wet soils can result in significant soil compaction. How often is harvest delayed by unexpected rain or poor drying conditions? After 5 days, most alfalfas will have initiated new shoots. These can easily be broken off by the slightest wheel traffic.

## The Investigation

Work on studying this affect was begun in 2000 in Wisconsin. In 2001, a similar study was begun in Iowa, Wisconsin, Minnesota, New York, Oklahoma and South Dakota. In these studies, wheel traffic was applied to alfalfa stands 2 and 5 days after harvest. Wheel traffic was applied to the plots using a 100 HP tractor driven across the entire plot area. A plot without any wheel traffic following harvest was used as a comparison. These treatments were applied to alfalfa variety plots to determine if there were any alfalfa varieties that tolerated traffic better.

## What did they find?

In all cases, wheel traffic did cause a reduction in average yields. There was wide variation among alfalfa varieties, with some varieties having only a 1% loss to others that had 20% yield reductions (up to 1 ton/acre/year reduction). In all cases, the wheel traffic at 2 days post harvest had significantly less yield reduction than wheel traffic at 5 days. This indicated to the investigators that while some of the yield reduction due to wheel traffic is likely due to soil compaction, a significant portion of the yield reduction is due to plant factors. Harvesting as soon after cutting will reduce this yield loss due to wheel traffic.

## Recommendations

1. Investigate alfalfa varieties for traffic tolerance - Wisconsin web site <[www.uwex.edu/ces/forage](http://www.uwex.edu/ces/forage)> lists trial results.
2. Use smallest and lightest tractors possible on established stands.
3. Avoid unnecessary trips across the field. Get to field lanes as soon as possible to transport wagons.
4. Avoid tractors with dual wheels.
5. Consider using larger harvesting equipment. But does larger equipment have less traffic area but heavier weight?
6. Drive on fields as soon after cutting as possible, make haylage, use a wide swath for faster drying, and apply manures immediately.

**Paul H. Craig, CCA**  
**Forages**

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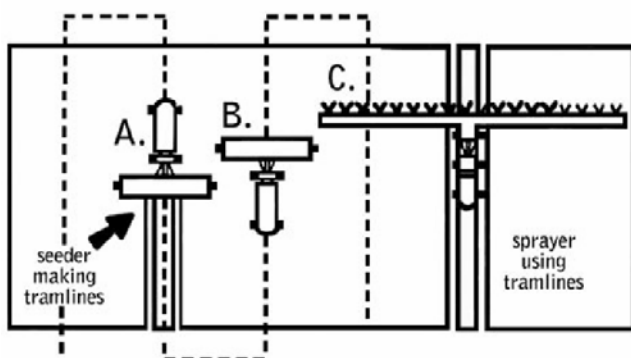
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## Is It Time to Start Trimming Soybeans?

*Adapted from an article written by David L. Holshouser –Extension Soybean Specialist, Virginia Agricultural Experiment Station*

The word tramlines would raise an eyebrow in Pennsylvania but they are nothing new for many Virginia producers. For those of you that aren't familiar with tramlines, they are basically traffic lanes placed in a field at planting. These traffic lanes match the width of the sprayer tires and are spaced to match the width of the spray boom. Tramlines have always been advocated for intensively managed soft red winter wheat production. It's never been a major issue for soybeans until the threat of soybean aphids and soybean rust.

Tramlines have several advantages. One is uniform application of sprays, with no skips or overlaps and act as a guide for repeated applications. Tramlines are easier to follow than foam markers. And, tramlines offer a means to control traffic and reduce compaction. Of course today's technology (i.e., light bars, auto-steer tractors, etc.) will accomplish the same results. But, there are more advantages. Tramlines may actually help with spraying in wet fields because the unplanted strips become somewhat compacted. There is less likelihood that the sprayer will be stuck in the field. Soybean rust will not wait for the fields to dry.



But, probably the most important advantage of installing tramlines in soybeans is higher yields from not running over 2-3 feet tall soybeans. Of course if you're in wide rows you won't need tramlines. But, most of our soybeans are planted in 7 1/2 to 15 inch rows, making it much harder to fit a sprayer without damaging the crop. There really hasn't been very much research conducted concerning the effect of running over soybeans late in the growing season. But, there is some data out of Ohio. The research was conducted on 7 1/2-inch soybeans and two of the rows were destroyed during pesticide application. The amount of yield loss ranged from 2.5% with a 50' spray boom to 1.4% with a 90' boom. In one of our on-farm fungicide trials in 2005, I calculated a 2% loss from track damage with a 60' boom.

What if no later season sprays are necessary? Do we lose any yield due to the tramlines themselves? I don't think

we would in full-season soybeans. In double-crop, we might lose a little. But you can also subtract the cost of the seed not planted in those rows.

In summary, now is the time to consider tramlines in soybeans. We cannot assume that soybean rust will stay in the south as it did in 2005. And remember, you can always make use of them in your wheat.

**John Rowehl, CCA  
Grain Crops**

## Crop Insurance News – PA- March 2005

**2005 Crop Loss Payments:** The PA 2005 losses paid to producers passed the \$12 million mark as of early February, which is more about 150% of the producer paid premium. These losses were due primarily to pockets of drought and some hail damage. Again in 2005, the higher levels of coverage with lower deductibles outperformed lower coverages. Over the past 5 years estimates show that PA producers received \$131 million in loss payments in exchange for \$31 million in net premium cost (a \$4 to \$1 ratio).

### Finalizing Insurance Plans for 2006 – March 15

**Deadline:** Maximizing income and managing downside risk are big priorities. Some suggestions follow:

1. **Improved crop marketing:** The best opportunity to lock-in good prices for the year is almost always the period between February and May. The most successful marketers develop a written marketing plan showing planned sales by calendar date, if specified new crop prices become available. This results in orderly pre-harvest marketing...if there is follow-through. There is compelling evidence that CRC crop insurance provides growers with the needed confidence to follow their marketing plan. The general rule of thumb is to forward price up to the amount of the CRC bushels on which the revenue guarantee is based (your APH yield X % level of coverage). The CRC coverage can be a big help in replacing contracted bushels if a crop loss occurs. There are many reports of producers increasing their crop prices by \$.25 to \$.50 per bushel using this crop insurance based crop marketing strategy. So, with this approach producers gain benefits from their crop insurance every year (increases income in good and bad years).
2. **Selecting insurance plans:** There are numerous ways to insure. A brief review follows:
  - a. **CRC Crop Revenue Coverage.** This revenue coverage plan is very popular with corn and soybean growers. Farm yield history is converted to a revenue guarantee using the higher of CBOT spring or fall new crop prices. Production is valued at CBOT fall prices. These features make it a good foundation for pre-harvest pricing or for

situations where buying replacement feed is necessary if a crop loss occurs.

- b. **APH Yield Coverage:** This plan provides yield loss protection. It does not respond to market price changes throughout the year.
- c. **Group Risk Coverage:** This coverage is available for corn in many counties. Producers choose a dollar amount and percentage level of coverage. A loss is triggered when the USDA adjusted county average yield for the current year declines by a greater percentage than the producers selected deductible (100% minus the level of coverage). Either yield or revenue plans are available. Individual farm low yields do NOT trigger loss payments with these plans.
- d. **Adjusted Gross Revenue-Lite (AGR-Lite):** This is an individualized whole farm gross revenue insurance plan. It protects against loss of revenue from natural disasters, unavoidable revenue losses from insects, disease, wildlife and low prices in the current year. AGR-Lite insures 65% to 80% of the producer's average income from the sale of crops, animals or animal products such as milk. It recognizes the higher values of organic production, direct marketing and high value varieties. The policy can stand alone or be combined with Yield or CRC policies to provide higher levels of income protection...oftentimes for only a few dollar of additional premium. Producers with up to \$2 million of annual income are eligible for AGR-Lite.

**Contact a crop insurance agent to finalize your 2006 protection before the March 15<sup>th</sup> deadline.**

**Gene Gantz  
Risk Management  
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## Weed Management Systems For No-till Corn Production

**Note:** Refer to the *Penn State Agronomy Guide* and product labels for more detailed information on rates and restrictions. Numerous products exist that are not detailed in this article.

### Burndown

Burndown is critical to the crop because it takes the place of the plow or tillage system for eliminating weeds. This may mean treating when weeds are not even showing. If you leave this step out, the whole system can fail.

#### Burndown Options

- Glyphosate
- Paraquat
- Glufosinate

These 3 options are referred to as post emergent non selective herbicides. Adding a pre-emergent herbicide labeled for pre-plant can eliminate further weed germination. Many are labeled 45 days before

planting (and also fall applied) for a large application window.

### Designing Herbicide Programs

Residual programs allow producers to either reduce or eliminate weeds that come from seed each year. pre-plant refers to the time that the crop is not planted, whether fall applied or spring applied. Pre-emergence can mean before the crop emergence or before the weed emergence. Total dependence on the program usually results in limited success, depending on weed complexity and weather.

#### -Pre-Plant Herbicides

- **amides** (Harness, Dual, Frontier) Used for residual grass and some broadleaf weed control at full labeled rates.
- **Triazines** (Atrazine, Princep) – large seeded broad leaf annuals
- **dinitroanilines** (Prowl) Apply after planting.
- **Pigment inhibitors** (Balance, Callisto)
- **ALS** (Python)

**-Post-Emergent Herbicides** – used when you can see green growth on the weeds. The crop may be emerged at different heights. Post products mixed with residual products are popular programs and will perform well if applied “on time”.

#### Options for post grass control (except crab)

- **ALS nicosulfuron** (Accent), foramsulfuron (Option), mixes (Steadfast, Stout).

#### Options for post broadleaf control

- **Triazines** (Atrazine, Sencor)
- **PGR's** (2,4-D, Clarity, Banvel)
- **ALS** (Beacon, Harmony GT)

#### Options for selected grass and broadleaf

- **Glyphosate** (58 trade names) on glyphosate tolerant crops
- **ALS imazethapyr** (Lightning) on IR corn
- **Glufosinate** (Liberty) on glufosinate resistant hybrids

### Post Programs

Programs are broken into, but not limited to, general timings for corn.

- **Early Post** – Up to 3-leaf corn, works best if few perennials exist. Use lower rates or ranges in the Agronomy Guide of post herbicides combined with  $\frac{3}{4}$  rates of residuals.
- **Mid Post** – 3 to 5-leaf corn, works best if few perennials exist. Use middle rates or ranges in the Agronomy Guide of post herbicides plus  $\frac{1}{2}$  rates of residuals.
- **Late Post** – 6 to 8-leaf corn, works well where few annuals exist with many perennials. Boom heights need to be adjusted and little residual is needed due to the close timing of canopy closure. Yield loss due to weed competition is possible and research indicates the loss is greater than the benefit of waiting this long to control weeds.

**Pre Followed by Post** – This is the most effective program for all weed scenarios, including burcucumber. This system calls for low rates of residual herbicides or high rates of grass residual herbicides to be applied pre

plant to crop planting. After three weeks or between mid and late post timing, a post herbicide program is selected according to what weeds exist in the field. In some cases, none is needed, but in others, selected herbicides are needed. Rarely does an entire redundant package need applied in place of this system.

**Del Voight, CCA  
Integrated Crop Management**

## Adams Watershed Selected For 2006 Conservation Security Program

Harrisburg, PA— The Monacacy River watershed in Adams County has been selected to participate in the FY 2006 USDA Natural Resources Conservation Service (NRCS) Conservation Security Program (CSP). Nearly 580 farmers within the watershed boundaries can apply to NRCS for the opportunity to receive payments based on the conservation work they have done in past years.

Nationally, 110 watersheds have been selected for the 2006 CSP. This voluntary program recognizes and

rewards farmers for their ongoing stewardship activities on working agricultural lands. "Natural resource conservation efforts by America's producers benefit everyone through healthier soil, cleaner air and water and improved fish and wildlife habitat," remarked Agriculture Deputy Secretary Chuck Conner. "CSP successfully demonstrates a cooperative public-private conservation partnership."

The 2006 CSP will include a renewable energy component. Eligible producers can receive compensation for converting to renewable energy fuels such as bio-diesel and ethanol, for recycling 100 percent of on-farm lubricants, and for implementing energy production, including wind, solar, geothermal and methane production.

The signup period will be held February 13<sup>th</sup> through March 31, 2006. For specific program requirements and sign-up information, please visit our web site at <http://www.nrcs.usda.gov/programs/csp>. or call 717-334-2317 extension 3.

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