Interseeding Cover Crops

Greg Roth, Department of Plant Science,
The Pennsylvania State University

Early season interseeding

- Seed cover crops at V4-V6
- End of critical weed free period for corn
- Used in Europe, Brazil, Quebec, and Pacific NW
- Previous tests indicate minimal or no impact on corn yields

Our Interseeding Vision

- Affordable
- Combine with other trips if needed
- Reduce seed rates or costs
- Make machine multifunctional for use on other crops
- Adaptable to different tillage systems and no-till
- Transportable
- Adaptable to smaller and different tractors
- No corn yield impact
- Boost yield in long term
- Protect soil/reduce runoff
- Scavenge nutrients
- Generate positive economic return

Lawrence County September 2014

Latest Design Components

- Drill units between rows
- Liquid N stream applied adjacent to corn row
- Herbicide applied under corn canopy
- Assist wheels to carry weight
- Ground drive
- Loading platform
- Conversion to Drill Unit
- Hitch for Towing

High Residue Seedbed

Note wetter areas near furrow

Lancaster Organic 2015: Interseeded

Blair County 2015

- Interseeded in corn following triticale
- Ryegrass, radish, clover and brassicas worked will
- Small grains (rye, triticale) did not.
- Manure applied following silage harvest really increased biomass

Jim Biddle, TA Seeds and Kings Agriseeds cooperated on this demonstration

Erie County2015: Interseeded mix

- After two years of testing, this cooperator purchased machine.
- 6 lbs Annual ryegrass, 6 lb Red Clover and 1 pound of radish
- Confirmation that this system works well in short season areas.

Oklahoma Cotton

Penn State E

Wisconsin Clover

Minnesota Soybeans

South Dakota

- Radish, ryegrass, red clover
- 229 bushels/acre
- Green cover with living roots after corn


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InterSeeder


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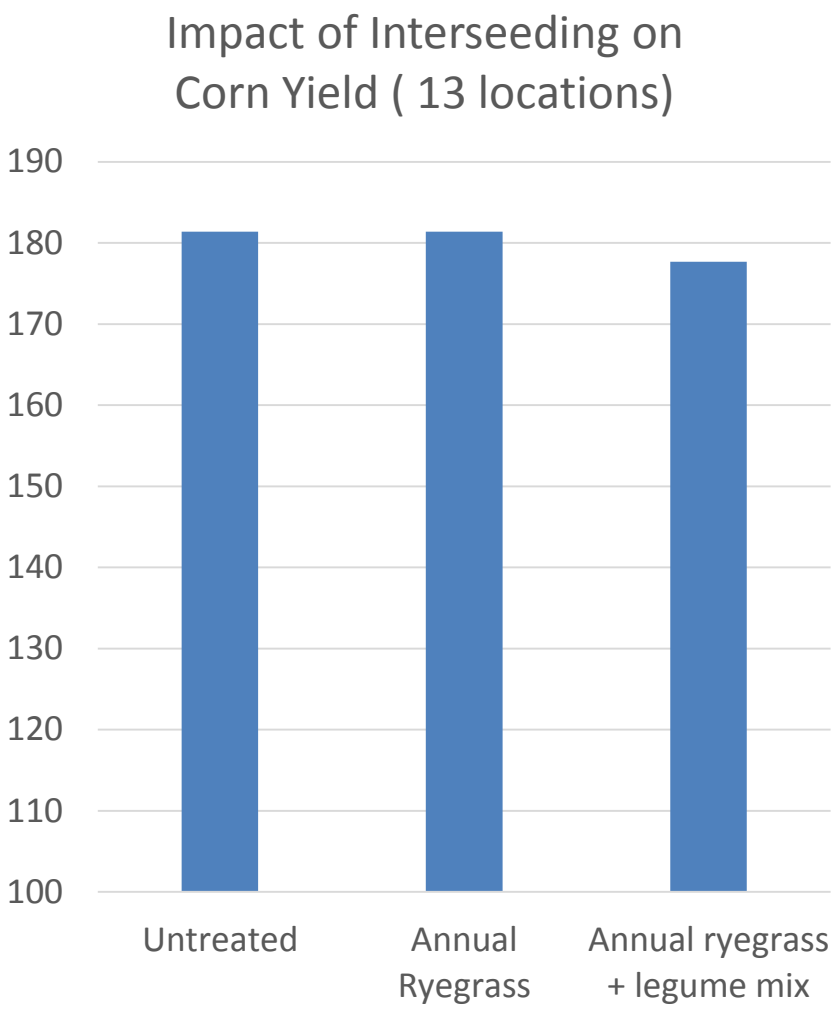
InterSeeder

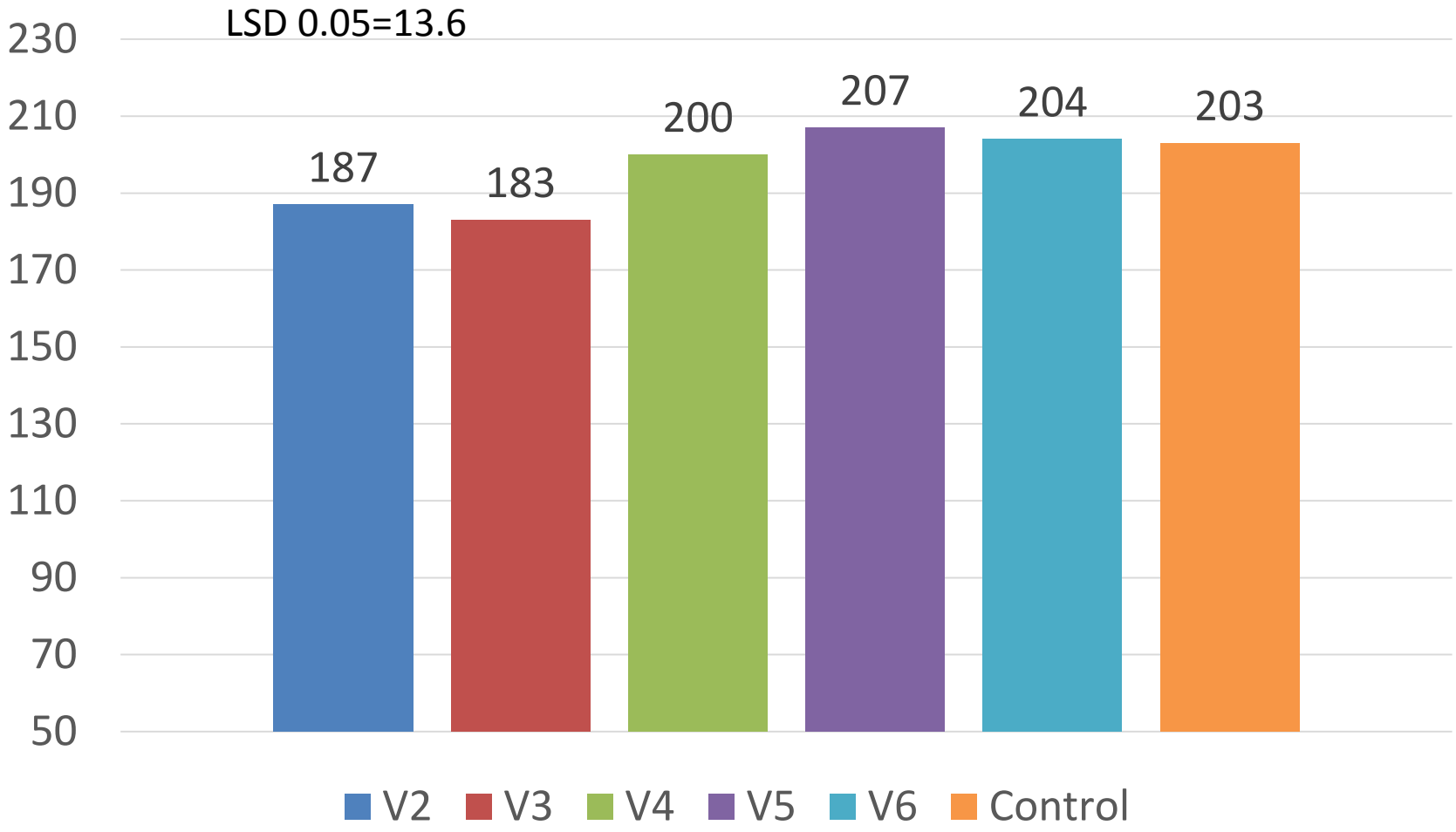
Multi state demonstration project

MD, PA, NY 2013-2015

- Impact of interseeding on corn yield was not sig.
- Ryegrass, red clover, radish and brassicas worked best
- Biomass levels averaged 300 lb/acre in fall
- Biomass increased dramatically in spring

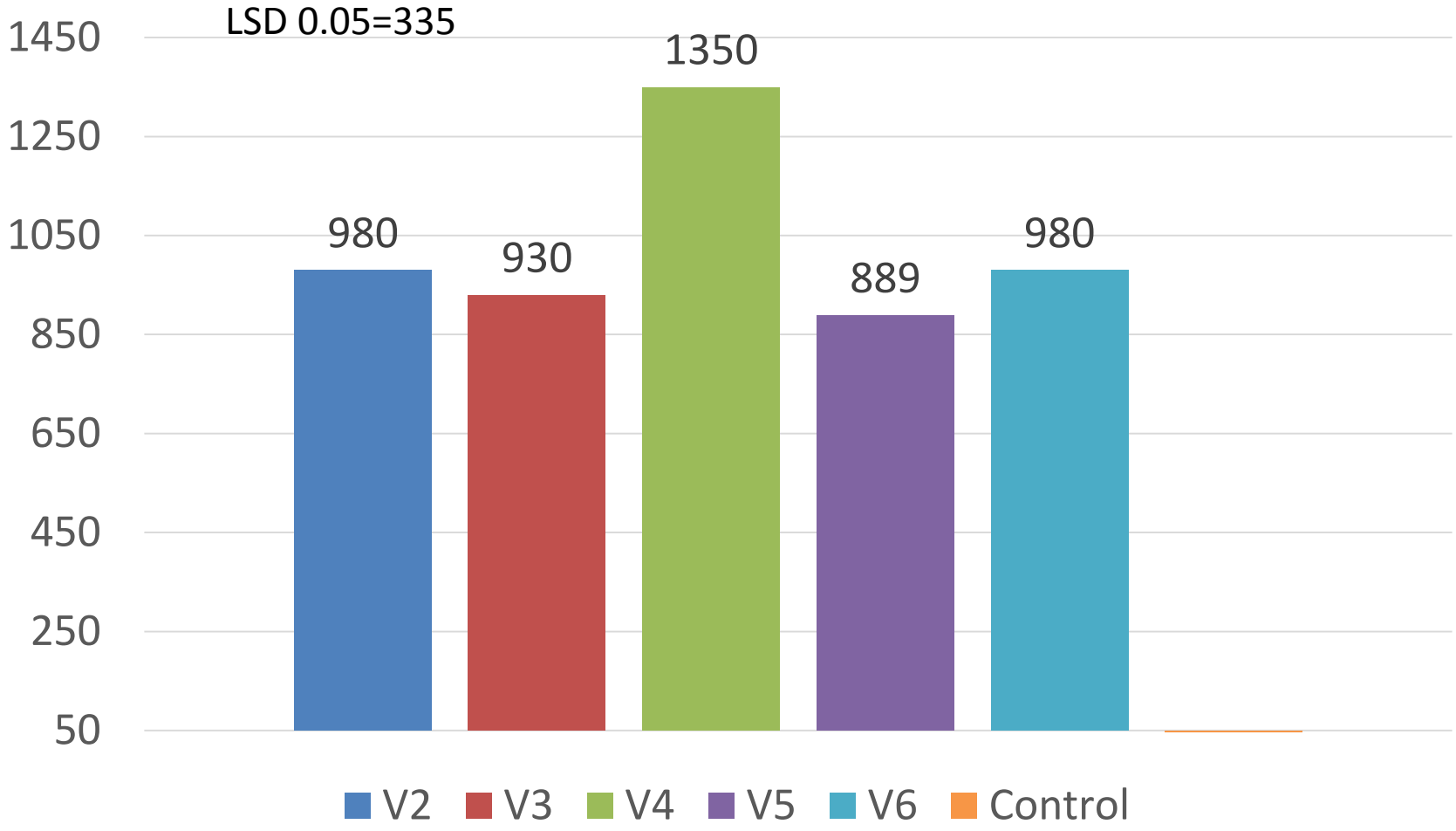


Interseeder Timing Impact on Yield



Curran, 2015 Unpublished

Interseeder Timing Impact on Biomass



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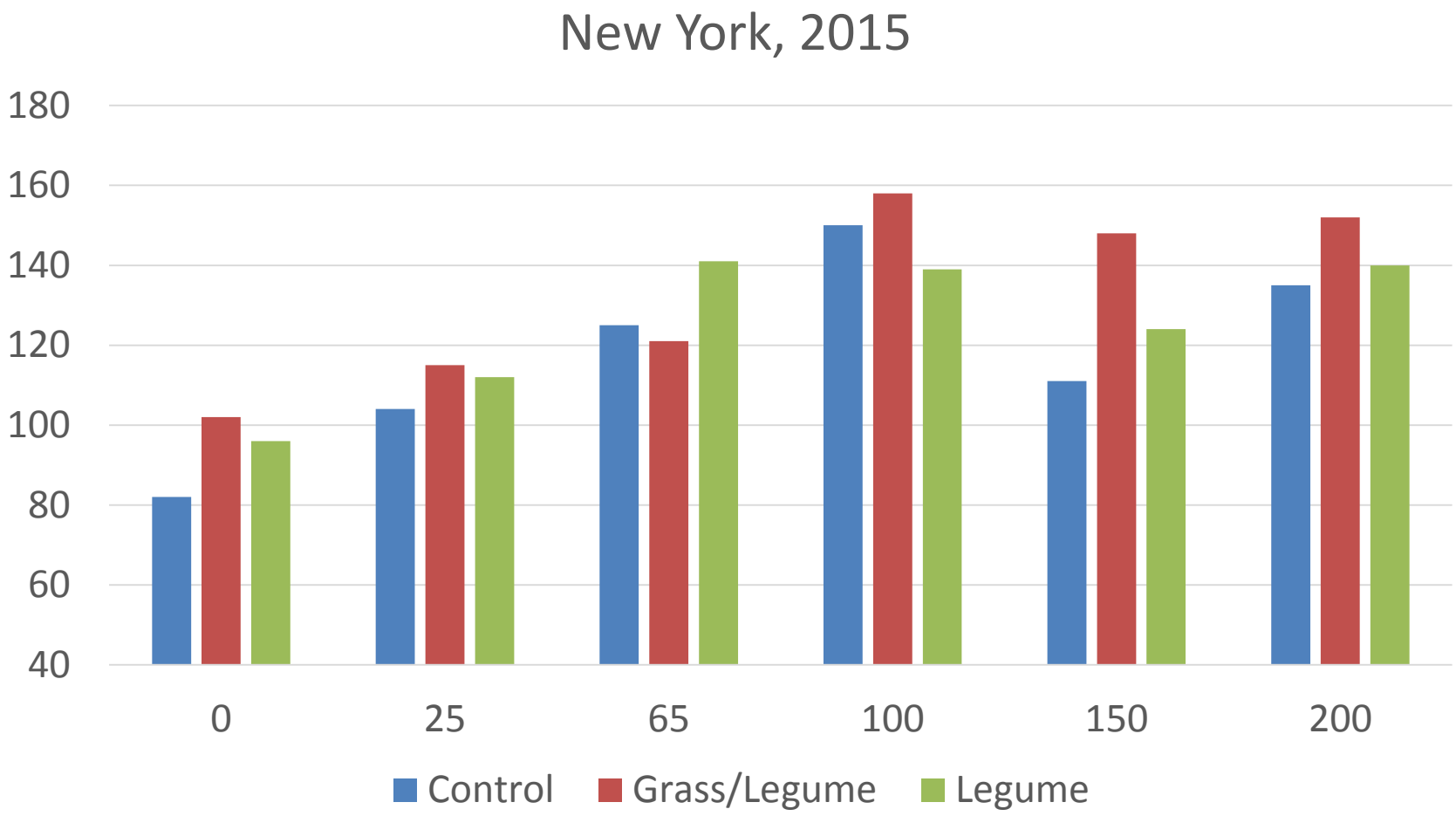
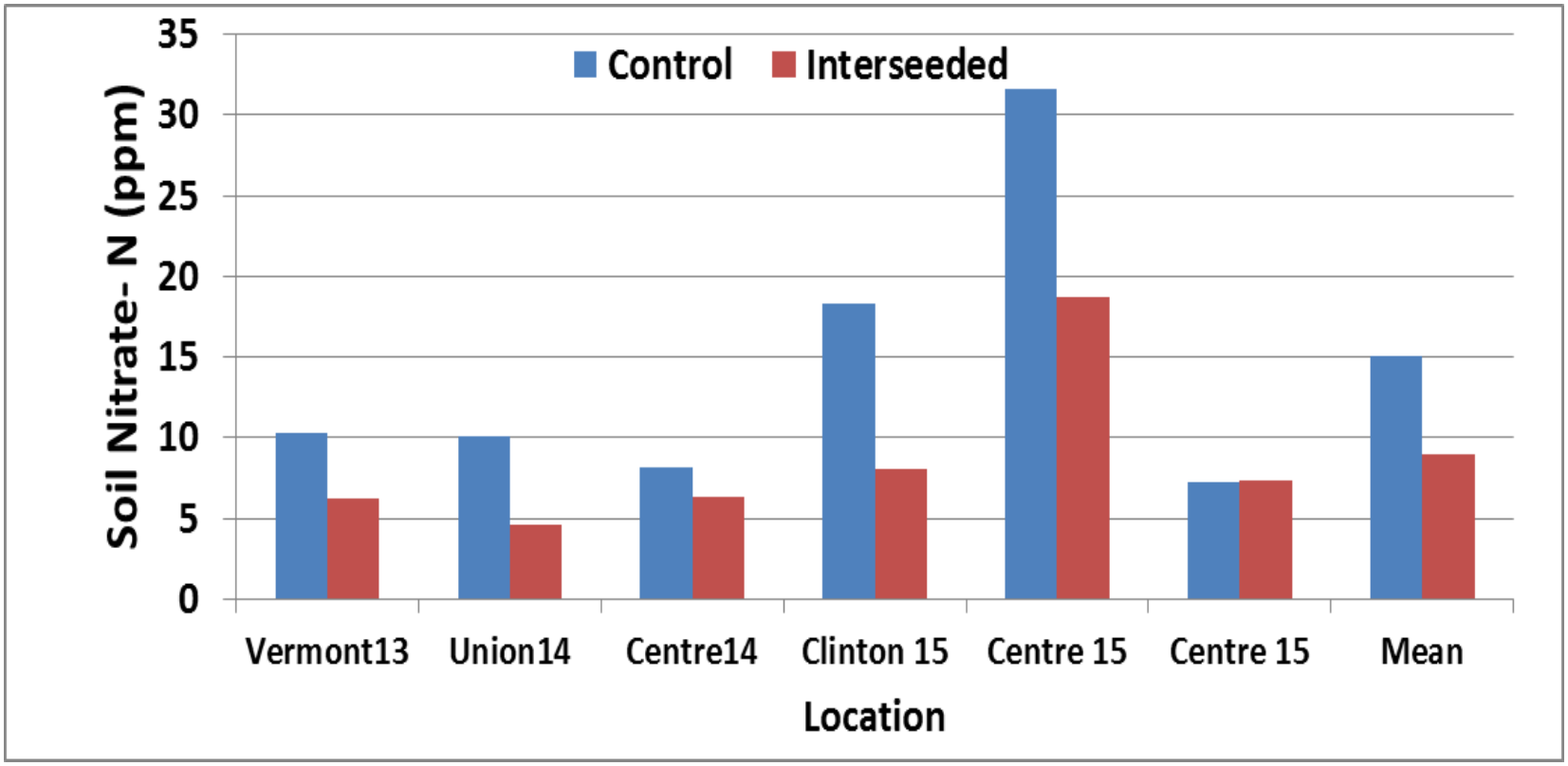
Impact of CC on 2nd Year Corn



Ryan, unpublished

Fall Soil Nitrate Impacts: Five Trials



On average, a successful interseeding can reduce soil nitrates by 40%

BC Relay Cropping Study

Table 1. Effect of relay crop in reducing over-winter runoff, solids and nutrients from a silage corn field receiving broadcast dairy slurry in fall in south coastal BC

Parameter	% Reduction (1996-98)
Runoff amount	53
Suspended solids concentration	43
Suspended solids load	74
Nitrate-N load	61
Ammonium-N load	33
Total N load	56
Total P load	42
K load	31

http://www.farmwest.com/node/965

Management needed for success

- Management is site specific
- Timing of interseeding
- Species selection
- Herbicide management
- Variety selection
- N supply in soil

PennState Extension

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Cover Crop Interseeder and Applicator

The Penn State Cover Crop Interseeder and Applicator was designed to help establish cover crops in areas where cover crop establishment is not that feasible because of a late harvest and short season.

Figure 1. The Penn State Cover Crop Interseeder and Applicator. (Photo: Greg Roth)