



AgriNorthwest

SUMMARY

Direct Seeding

in Irrigated Agriculture Workshop

Dec. 2, 2004

Moses Lake, Washington

Workshop agenda

Opening, *Andy McGuire, WSU Extension*

Considerations in Adopting Direct Seeding Systems, *John Aeschliman, Pacific Northwest Direct Seed Association, farmer*

Farmer Experience: Warren Mason, AgriNorthwestAgronomist

Farmer Experience: Eric Williamson, Williamson Farms

Direct seeding has long been something talked about, and practiced, mostly in the dryland regions of Washington. But that may be changing as irrigated farmers look for ways to cut costs in light of stagnant commodity prices. In this workshop, three Washington farmers share their experience in direct seeding.

John Aeschliman, Colfax

- Current president of the Pacific Northwest Direct Seed Association (<http://www.directseed.org/>)
- Farms 4000 acres with his son near Colfax
- 30 years of direct seeding experience
- Plants small grains in double rows, 7.5” x 12.5” spacing with a 36’ Great Plains air drill
- What he says:
 1. Stewardship and economics must work together; you have to have both.
 2. Residue management begins at harvest
 3. Size stubble for good seed to soil contact at planting
 4. Spray out “green bridge” volunteer crops 2 weeks prior to planting

Case Study of the Aeschliman Farm:

(<http://pnwsteep.wsu.edu/CEPublications/pnw0515/pnw0515.pdf>)

Case study of an irrigated direct seeding operation:

<http://pnwsteep.wsu.edu/CEPublications/pnw0526/pnw0526.pdf>



Aeschliman farm

Warren Mason, AgriNorthwest, Tri-Cities

Rotation on most of farm: Wheat-Corn-Potatoes

Crop	Field passes to produce crop	
	Old System	New System
Potatoes to Wheat	8	3.25
Wheat to Strip-till Corn	7	4.25
Corn to Potatoes	14	9.5
Total	29	17

- Estimates that tillage passes overall have been reduced by 40%, labor has been cut by 50%, # of tractors down by 67% and # of large tractors down by 33% compared to 5 years ago.
- Benefits of the new system:
 1. Simpler production plan requiring fewer inputs
 2. Each tillage pass that is eliminated saves approx. 0.5” of soil water
 3. Reduced wind erosion at seedling stage which eliminates the need to irrigate on windy days and reduces water-logging of seedlings
 4. Less labor, but doing more important tasks
 5. Less equipment, but utilized more efficiently
 6. Allowed farm units to increase from 2700 acres to 3800 acres
 7. Greater profitability
- For strip-tilled field and sweet corn
 - Wheat stubble is spread as evenly as possible
 - Some straw is removed
 - The field is harrowed in the fall with a springtooth harrow at 8-10 mi/hr to break straw into smaller pieces
 - John Deere Maximerge planter preceded by an Orthman “One Tripper”
 - Fertilizer (banded 10-34) is applied just ahead of the planter
 - GPS autosteer helps and makes all operations more efficient, especially when planting at night.
 - Have not seen any yield decrease in corn after wheat, although that may be due to improved varieties
 - Corn after corn has given them more problems and yields have decreased 10-15 bu/ac
 - Fields are ripped prior to fumigation for potatoes
- Challenges:
 - Weed control is a challenge in corn after corn, and, in general, herbicide rates have to be increased to label recommendations.
 - Some increase in Russian thistle with reduced tillage
 - Cultivation is not possible because of residue, dammer-diking still used, especially on hills
 - A pyrethroid is applied at 2-leaf stage to manage increased cutworms



AgriNorthwest Planter—rear



AgriNorthwest Planter—front



AgriNorthwest—sweet corn
planted into wheat stubble



AgriNorthwest—sweet corn
in wheat stubble (purpling of
leaves disappears after soil
warms)

Eric Williamson, George

- Direct Seeded strip till sweet corn for 3 years
- Following triticale, corn, alfalfa, timothy, green peas

Strip-tiller:

- Trash wheels (row cleaners)-Yetter
- Large coulter (24”) to cut through roots and residue to keep from hanging up on ripper shank-DMI
- Ripper Shank (runs 14-18” deep)-DMI
- Closing discs, concave, smooth-DMI
- Packer basket-homemade

Planter:

- Fertilizer openers (2” to side and 2” below seed)-Yetter
- Trash wheels (row cleaners)-Yetter
- Monosem vacuum planter (12 row)
- Strip tiller and planter connected
- Pulled by 2-point hitch on tractor
- Lift assist wheels in rear

Crop	Field passes to plant crop	
	Old System	New System
Corn After corn	5	1
Corn into triticale sod	5	2
Corn into wheat cover crop	4	2

Other uses for direct seeding:

- Planting into old alfalfa or timothy stand after 1st cutting
- Planting after green peas
- Planting into mint residue with 1 tillage pass
- Could probably use to plant beans if harvest could be accomodated

Benefits seen:

- Reduced tractor needs and better utilization of current tractors
- Reduced labor at time of alfalfa cutting
- Yields the same or better
- Reduced wind erosion
- Reduced need for early irrigations and associated costs
- Reduced compaction potential

Challenges:

- Adjustment and fine tuning of planter takes time and experience
- Would be difficult to do without GPS guidance system
- Requires more horsepower (30-35 hp per row)
- Fertility must be managed – for the most part, it is better to do so in previous crop



Williamson farm—strip tiller



Williamson farm—planter, attached behind strip-tiller when in use.

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