

Why direct seed?

What is direct seeding?

Direct seed cropping systems are characterized by minimum soil disturbance seeding, retaining most of the crop residues on the soil surface and extended crop rotations.

Direct seed farming is defined as any method of planting and fertilizing done with no prior tillage to prepare the soil. This includes systems that plant and fertilize directly into undisturbed soil, as one pass, and those that fertilize first and then plant as two passes.

Direct seeding is...

ECONOMICAL

- save fuel
- reduce labor
- extend farm machinery life
- maintain or improve crop yields

IMPROVE YOUR SOIL

- improve soil fertility
- increase soil organic matter
- improve soil tilth
- efficient use of available moisture

GOOD FOR THE ENVIRONMENT

- reduce soil erosion
- improve air quality
- improve water quality
- benefit wildlife

Direct seeding is also recognized for its potential to sequester atmospheric carbon dioxide — an important factor in the mitigation of green house gas emissions.



www.directseed.org

Improve Your Farm Efficiency

SAVE FUEL

Every farm operation burns fuel. Reducing tillage operations can reduce fuel consumption by an average 3.5 gallons an acre or 3,500 gallons/year on a 1000 acre farm (CTIC).

Burning one gallon of diesel results in 22.3 lbs of carbon dioxide equivalent (CO₂e) greenhouse gases being released to the atmosphere. 3,500 gallons of diesel not burned will save 35.4 mT CO₂e from being released as greenhouse gas.

REDUCE LABOR, SAVE TIME

Fewer tillage passes equals less tractor hours, less labor hours to pay, more time for management and the ability to farm more acres.

EXTEND FARM MACHINERY LIFE and reduce equipment support costs

While direct seed equipment requires capital investment and in some cases additional horsepower, fewer tillage passes result in extended tractor life and requires less support equipment. The European Conservation Agriculture Federation (ECAAF) estimates a savings of \$6.5/acre (9.7 EUR/hectare) on machinery depreciation and maintenance costs, equaling \$6,500 (4409 EUR) savings on a 1000 acre (454.5 hectares) farm (ECAAF).

BUILD SOIL QUALITY: IMPROVE CROP YIELDS

Direct seeding builds soil, improves soil health and increases productivity. Limited soil disturbance and maintaining crop residue on the soil surface increases soil organic matter that feeds soil microbial activity resulting in healthy soil and improved nutrient exchange capacity. Surface residue also facilitates increased water infiltration rates, water holding capacity and reduces potential for erosion which maintains valuable top soil for production. Extended crop rotations help reduce pathogen loads and increase yields in high value crops.

Direct Seeding: a Climate Change Solution

Direct seed cropping systems increase and store organic soil carbon. Increasing soil stored carbon is, in itself, beneficial to agriculture production; it is also beneficial to society. For every ton of carbon stored in the soil 3.34 mT of CO₂e has been removed from the atmosphere.

Between 0.2 and .75 mT/acre CO₂e per year (depending on tons of residue produced and management practices) can be removed from the atmosphere and sequestered in direct seeded soils. This is an atmospheric benefit the equivalent of not burning between 15 and 75 gallons of diesel per acre per year.

Stewardship

Direct seeding is the economic, environmentally and socially responsible cropping system choice for growers, landowners and land managers.

Where's more information?

PNSDA www.directseed.org
STEEP <http://pnwsteep.wsu.edu>
CTIC www.ctic.purdue.edu
From Your Local Conservation District

Pacific Northwest Direct Seed Association

is a grower directed, commodity neutral,
non-profit organization promoting
environmentally and economically
sustainable direct seed cropping systems.

Why become a member?

Yearly membership contribution provides
support for ...

- Delivering the Annual Pacific Northwest Direct Seed Cropping Systems Conference.
- Members take advantage of reduced conference fees.
- Representation to government on policy and program development that effect the environment and direct seed growers.
- Your source for the latest information and research on direct seed cropping systems.
- Peer support for growers developing their direct seed cropping systems.
- Input to research throughout the Pacific Northwest.

Become a Member

GROWER OR ASSOCIATE ■ \$100 PER YEAR

- Membership Savings at Annual Direct Seed Cropping Systems Conference
- Direct Seed Link Newsletter
- Email notice of Upcoming Direct Seed Events
- www.directseed.org (Website)

Become a Direct Seed Supporter

GROWER OR ASSOCIATE ■ \$250 - \$2,499/YR
or a **LIFETIME MEMBER** ■ \$1500 (1 time)

All the benefits of your Basic membership plus

- Listing in Newsletter upon contribution
- Research reports sent (when available)
- A Direct Seed Cap (New Design for 2008)
- Recognition as a Lifetime Member

**Ask About Becoming a PNSDA Partner ■
Starting at \$2500 per year**



For more information:
Phone: **208.883.0190**
Mailing Address:
**P.O. Box 9428
Moscow, ID 83843**

What are the benefits of direct seeding?

Good for your soil

Continuous direct seed cropping systems replace important biomass residues in the soil, feeding the soil's micro flora and fauna and ultimately improve soil health. Healthy soil supports healthy, strong and competitive plant communities that are more resilient.

INCREASE SOIL ORGANIC MATTER and improve soil tilth

Continuous direct seed cropping systems increase soil organic matter (OM). Research has shown the more often soil is tilled, the more carbon is released to the atmosphere and less carbon is available to build organic matter for future crops. Increased OM levels result in better nutrient exchange capability and improved soil tilth for increased water holding capacity.

IMPROVE SOIL FERTILITY

In addition to increasing OM, continuous direct seed cropping systems improve soil particle aggregation and create an ideal habitat for earthworms and micro biological activity. Plants establish roots, find moisture and utilize nutrients more efficiently.

EFFICIENT USE OF AVAILABLE MOISTURE

Continuous direct seed cropping systems build a protective mulch on the soil surface which reduces the impact of raindrops, buffers the soil from temperature extremes and reduces soil moisture evaporation. More moisture gets into the soil and more moisture stays in the soil where crops can utilize it for increased productivity.

Channels created by earthworms and undisturbed decaying plant roots also improve water infiltration.

Reducing tillage also saves moisture. Each tillage pass uses, on average, 1/4 to 1/2 inch of soil moisture which is an equivalent of 7,000 to 14,000 gallons of water per acre - 7,000,000 to 14,000,000 gallons on a 1000 acre farm. (Rourke, Manitoba)

Good for the environment

REDUCES SOIL EROSION

Crop residues anchored on the soil surface reduce erosion by water and wind by up to 90% compared to unprotected, intensively tilled soils. During the last 40 years, nearly 1/3 of the world's arable land has been lost to erosion and continues to be lost at a rate of more than 22 million acres per year. Continuous direct seed cropping systems are recognized as a sustainable farming system by the Food and Agriculture Organization of the United Nations.

IMPROVES AIR QUALITY

Anchored crop residues significantly slow wind speed and intensity at the soil surface resulting in reduced airborne dust and herbicide particulate that can result from wind events. Reduced fuel consumption from direct seed cropping systems also reduce airborne fuel emission particulates from farming operations.

IMPROVES WATER QUALITY

The increased water infiltration capacity of continuous direct seed cropping systems significantly reduce surface water runoff and the potential for the translocation of nutrients and surface applied crop protection products. Low volumes and slow moving surface water that may leave direct seed fields is cleaner and carries less sediment, nutrients and toxins than other cropping systems. Also, once water has infiltrated the soil, microbes that live in carbon-rich soils help degrade pesticides and utilize nutrients to protect groundwater quality.

Reduced runoff and leaching decreases off-site nutrient loads and reduces sedimentation on country roads and ditches, streams and rivers.

BENEFITS WILDLIFE

Crop residues provide shelter and food for wildlife while improved water quality enhances fish and waterfowl habitat.

Direct Seed Partners

provide financial support for the Pacific Northwest Direct Seed Association

