



Our Vision

The South Dakota Soil Health Coalition, led by farmers and ranchers, supports the advancement of land stewardship and profitability by nurturing life from the soil up.

Our Mission

The South Dakota Soil Health Coalition works in collaboration with agriculturalists to support the implementation of practices to improve soil health. Our producer-led organization offers resources, training, and events that demonstrate how healthy soil results in vibrant communities.

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Vr lK h d o k # W l s v # i r u # k h #
J d u g h q h u

Tips on how to reduce tillage in the garden
and improve soil health

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Ways to Reduce or Eliminate the Need for Tillage in Your Garden

- ▶ Question -
- ▶ How many of you fall till your garden?
- ▶ How many spring till?
- ▶ How many of you till your pathways?

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Tillage Reduction

- ▶ Going completely no-till is often times not something you can do in one season. Start by taking steps to reduce your tillage and prepare for a future no-till garden

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Garden Bed Preparation

Fall Tillage

- Deep tillage is not necessary to prepare for spring planting
- Occultation or Solarization can be used to terminate existing vegetation
- Mowing instead of tilling
- Deep mulch
- Eliminate fall tillage



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Garden Bed Preparation

- Occultation - smothering the existing plants using opaque plastic, cardboard or other opaque materials that can be held tight to the ground
- Must be left in place for several weeks to be effective
- Mowing of area prior to covering may be necessary



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Garden Bed Preparation

- ▶ Does not kill all perennial weeds - bindweed, wormwood, others
- ▶ Area will not need tilling after occultation but area should be mulched to cover the soil
- ▶ Solarization will have similar results but in less time
- ▶ Solarization kills faster using heat which in turn can damage soil biology
- ▶ Solarization plastic must be kept tight to the ground. Any fresh air under the plastic will negate the killing effect of the heat



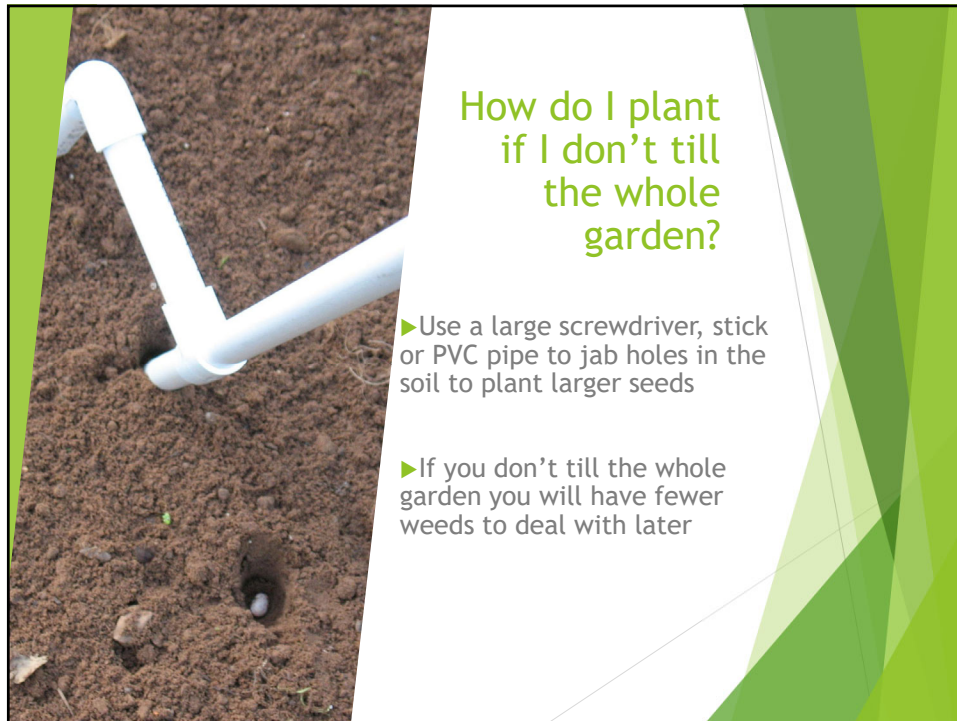
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How do I plant if I don't till the whole garden?

- ▶ In heavy mulch, pull back the mulch and make a small furrow for the seeds
- ▶ With small seeds, leave the mulch pulled back until they emerge
- ▶ With transplants, auger or dig a small hole and leave mulch in place



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Pathway Management

Where some of the most intensive tillage occurs in many gardens

Stop the tillage! Mulch or Mow instead

Tillage destroys soil aggregation, creates conditions that lead to compaction and drainage problems, and increases future weed growth



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Pathway Management

Mulch options -

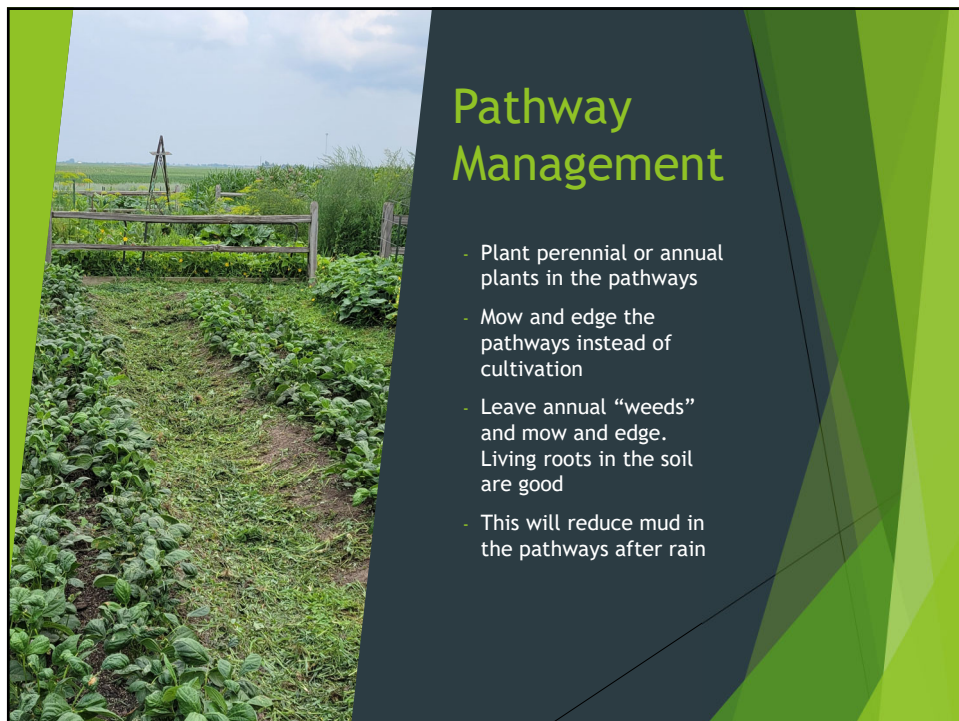
- Woodchips - with or without an underlayment like weed barrier or cardboard
- Straw, grass clippings, leaves, etc.
- Nothing at all - leave it green!



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Cover Crops

Planting a fall cover crop has several benefits:

- Increased organic matter and improved soil structure
- Nitrogen fixation
- Weed suppression
- Improved water infiltration

When planting cover crops make sure you consider how they will be terminated. Are they cold hardy or will they winter kill?

Cover crop options:

Winter kill - Oats, peas, buckwheat, radish, red clover

Winter hardy - winter rye, white clovers, hairy vetch

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Cover Crops

Cover Crop	Seeds/sq ft	Full seeding rate lbs/acre	Seeding depth, inches	Seeds/lb	Increase soil organic matter	Scavenge nutrients	Promote biological nitrogen fixation	Suppress weeds	C:N Ratio	Mycorrhizal fungi association	Minimize/Reduce surface soil compaction	Minimize/Reduce subsoil compaction	Rooting depth/Plant water use	Winter Survival
Alfalfa	31	6.5	25-.75	210,000	G	G	Y	G	L	M	G	G	DH	Y
Brassica hrt	29	7	25-.5	180,000	F	G	N	G	L	N	G	G	MM	N
Cabbage, Af	21	5	25-.75	180,000	F	G	N	F	L	N	G	G	MM	N
Camelina, W	28	3	25-.5	400,000	F	F	N	P	L	N	P	F	ML	S
Canola	16	5	25-.75	140,000	F	G	N	G	L	N	G	G	MM	S
Clover, Bala	57	5	25-.75	500,000	P	F	Y	P	L	M	P	P	SL	N
Clover, Crim	52	15	25-.75	150,000	F	F	Y	P	L	M	P	P	SM	S
Clover, Red	32	5	25-.75	275,000	F	F	Y	F	L	M	F	F	SL	Y
Clover, Sweet	24	4	25-1.0	260,000	G	F	Y	G	L	M	G	G	MM	Y
Collards or K	20	5	25-.5	175,000	F	G	N	G	L	N	G	G	MM	N
Flax	55	30	25-.75	80,000	F	F	N	P	H	H	F	P	SM	N
Mustard	19	6	25-.75	140,000	F	F	N	G	L	M	G	F	MH	N
Peas	6	70	1.5-3.0	3,500	P	P	Y	F	M	H	F	F	SL	N
Phacelia	21	4	25-.5	225,000	F	F	N	P	L	N	F	P	DH	N
Radishes	5	8	25-.75	25,000	F	G	N	G	M	H	G	G	DH	N
Rapeseed	16	5	25-.75	140,000	F	G	N	G	L	M	G	G	MM	S
Turnips	16	4	25-.5	175,000	P	G	N	G	L	N	G	G	DH	S
Vetch, Chick	3	50	5-1.5	2,500	F	F	Y	F	M	M	F	F	SL	N
Vetch, Com	5	25	5-1.5	6,000	F	F	Y	F	L	M	F	F	SM	N
Vetch, Hairy	5	15	5-1.5	14,000	F	F	Y	F	M	H	G	F	SH	Y
Barley	16	50	75-2.0	14,000	G	G	N	G	M	M	G	F	MM	N
Oats	26	70	5-1.5	16,000	G	G	N	G	M	H	G	F	MM	N
Rye, Cereal	25	60	75-2.0	18,000	G	G	N	G	L	M	G	G	MH	Y
Rye, Cereal	17	40	75-2.0	18,000	G	G	N	G	L	N	G	G	MH	Y
Ryegrass, Ad	65	15	5-1.5	190,000	G	G	N	F	L	N	G	F	MM	S
Triticale	21	60	5-1.5	15,000	G	G	N	G	M	H	G	F	MH	Y
Wheat, Sprin	20	60	5-1.5	15,000	G	G	N	G	M	M	G	F	MH	N
Wheat, Wint	20	60	75-2.0	15,000	G	G	N	G	L	N	G	F	MH	Y
Buckwheat	22	50	5-1.5	19,000	P	F	N	F	L	N	F	P	SL	N
Cowpeas or	3	30	1-1.5	4,000	F	F	Y	P	L	M	F	F	SL	N
Soybeans	2	35	1-1.5	3,000	P	F	Y	F	M	M	F	F	SM	N
Sunflowers	1	7	5-1.0	8,000	F	G	N	F	M	H	F	G	DM	N
Sunn hemp	5	15	1.5-2.0	15,000	F	F	Y	F	M	H	F	F	DM	N
Millet, hdy	62	15	5-1.0	180,000	G	G	N	G	L	P	G	F	SL	N
Millet, pros	46	25	5-1.0	80,000	G	G	N	G	H	H	G	F	SL	N
Sorghum,	6	15	5-1.5	17,000	G	G	N	G	H	M	G	G	MM	N
Sorghum, Gr	2	5	5-1.5	17,000	G	G	N	G	H	M	G	G	MM	N
Sudangrass	11	20	5-1.5	25,000	G	G	N	G	M	M	G	G	MM	N
Teff grass	115	5	13-.25	1,000,000	G	F	N	F	L	M	G	F	SM	N

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SOIL HEALTH

The 5 Principles and Benefits of Soil Health

- ▶ Keep the soil covered - best place to start. Either with plant growth or covered with mulch and residue
- ▶ Limit disturbance - goes hand in hand with soil coverage
- ▶ Living roots - keep living roots in the soil as much as possible - relay planting, cover crops...
- ▶ Diversity - crop rotation, pollinators and forbs, cover crops
- ▶ Integrating Livestock - use animal manure compost, small animals for garden clean up

Organic

Water

Water

Recycle

Waste

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Recommended Resources

Soon to be released:

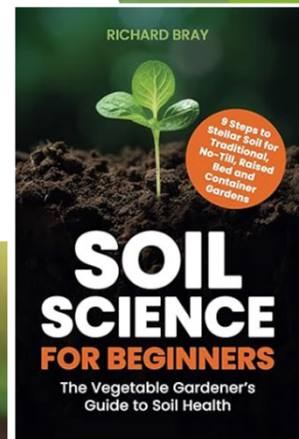
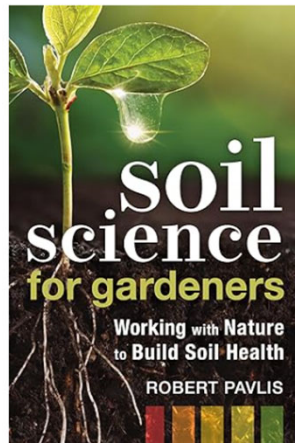
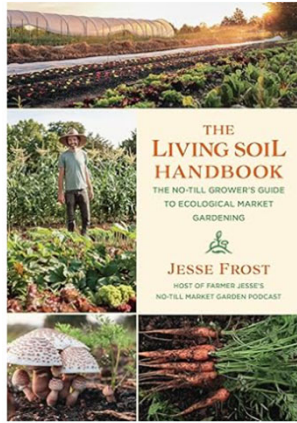
- Healthy Soils in Garden
- Cover Crops for Small Scale Growers -Table
- How to Start a Community Garden

SOUTH DAKOTA HEALTHY SOILS HANDBOOK
Your Guide to Soil Health, Principles, Practices, & Options for Your Situation
South Dakota Soil Health Coalition

HEALTHY SOIL AT HOME
SCENIC NATIVE LANDSCAPING WITH A PURPOSE
USDA Natural Resources Conservation Service
A SCIENTIFIC & EDUCATIONAL

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Recommended Resources



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Final Thoughts...

- ▶ Why should I do any of these practices in my garden? I've been growing for years without them...
 - ▶ Bare soil leads to reduced soil health.
 - ▶ Reduced soil health leads to reduced plant health.
 - ▶ Poor soils lead to poor people.

Healthier Soils = Healthier Food



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**South Dakota
Soil Health Coalition**

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Chris Goldade
Small Scale and Urban Ag Technician
chris_soilhealth@sdconservation.net
605-290-0109

SOUTH DAKOTA FRESH CONNECT

www.sdfreshconnect.com

Presented by: Wyatt Johnson

SD Soil Health Coalition

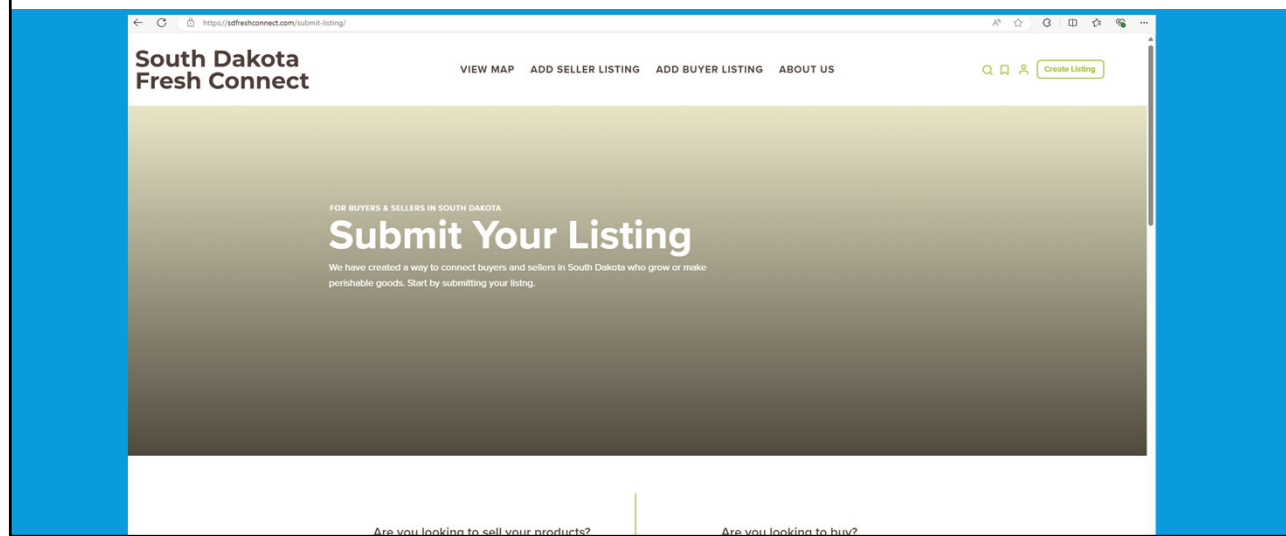
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WWW.SDFRESHCONNECT.COM

The screenshot displays the South Dakota Fresh Connect website. The header includes the site name and navigation links: VIEW MAP, ADD SELLER LISTING, ADD BUYER LISTING, and ABOUT US. A search bar and a 'Create Listing' button are also present. The main content area features a map of South Dakota with numerous location pins. A sidebar on the left provides filters for 'Buyer / Seller' (Buyer, Seller), 'Buyer Type', 'Seller Type', 'Vegetables', 'Fruits & Berries', 'Meats', and 'Other'. The map shows various South Dakota reservations and cities, with pins indicating the locations of sellers and buyers.

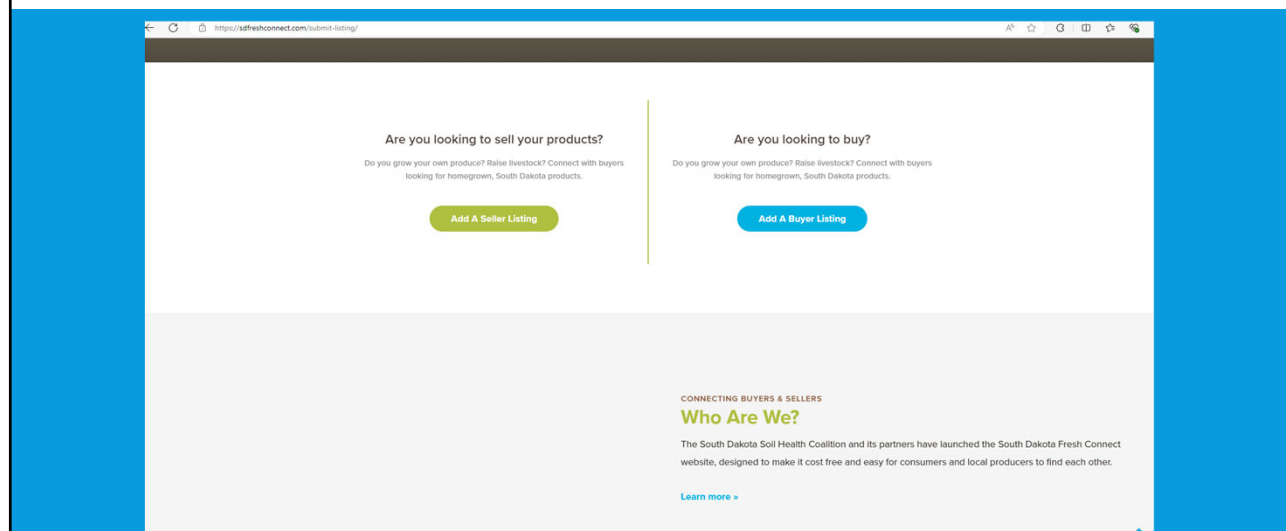
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CLICK "CREATE A LISTING"

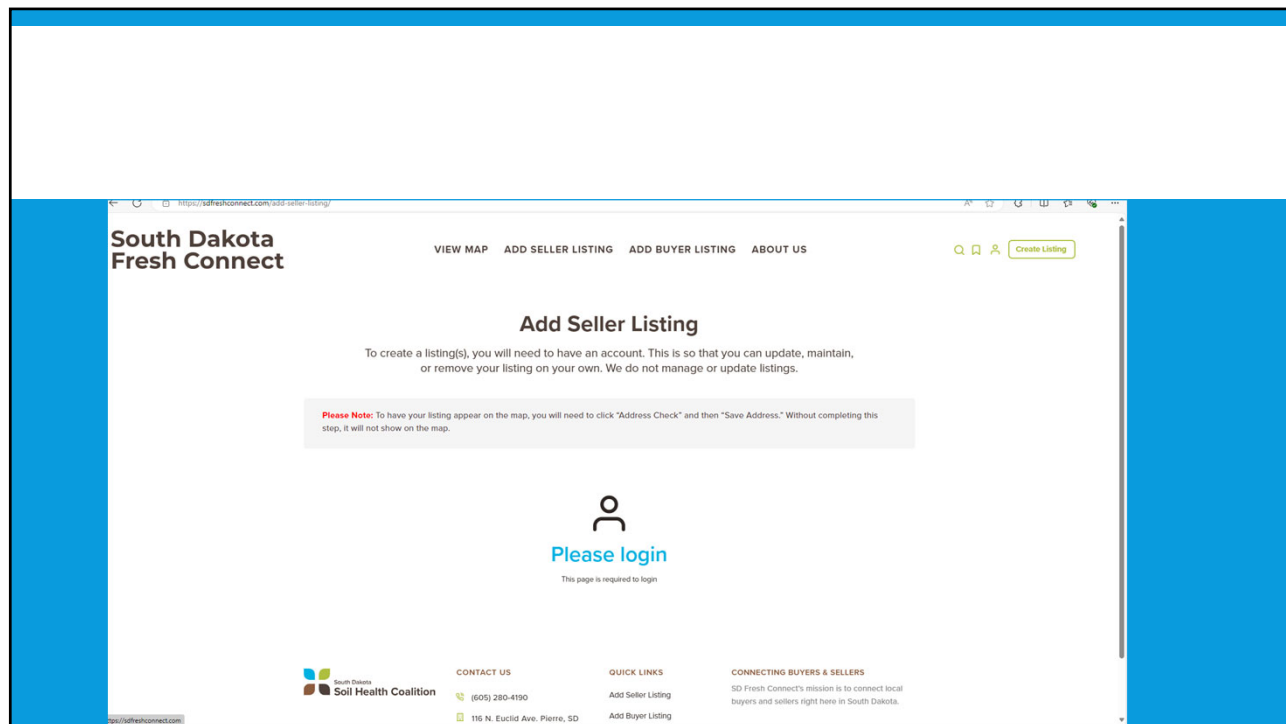


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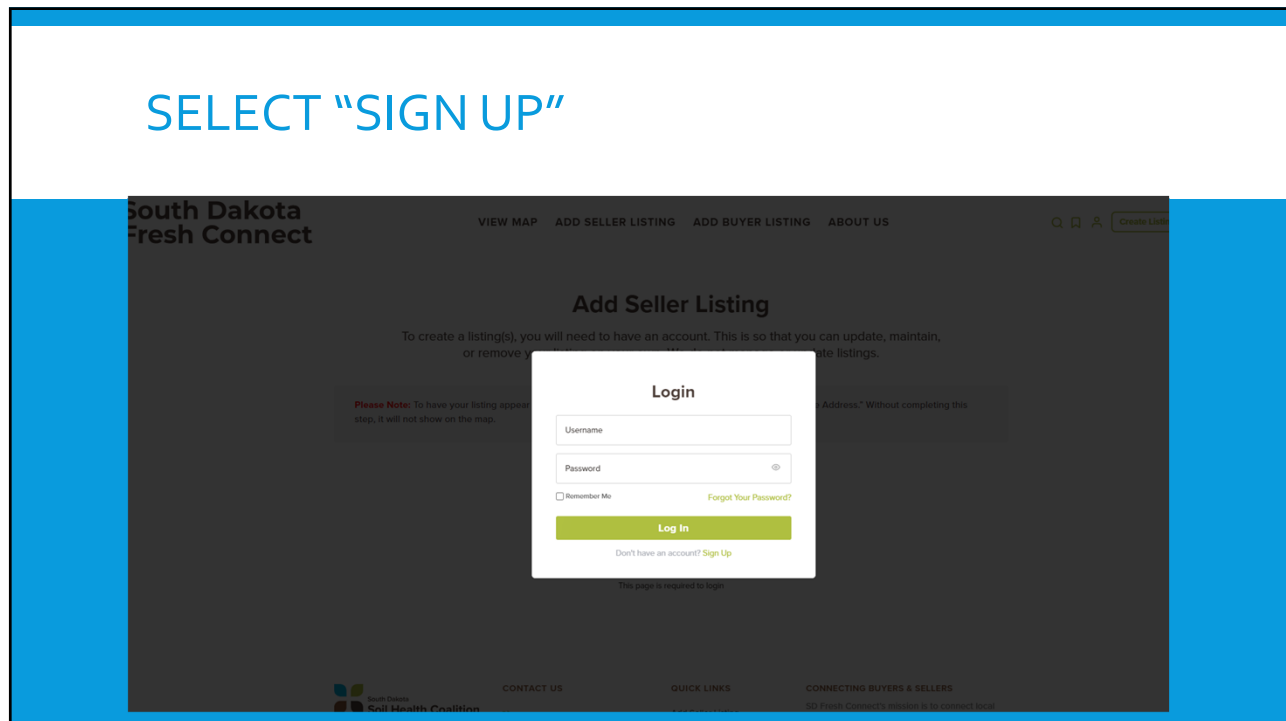
SELECT "SELLER" OR "BUYER"



4



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BEGIN TO ENTER YOUR INFORMATION

South Dakota Fresh Connect

VIEW MAP ADD SELLER LISTING ADD BUYER LISTING ABOUT US

Add Seller Listing

To create a listing(s), you will need to have an account. This is so that you can update, maintain, or remove your listing on your own. We do not manage or update listings.

Please Note: To have your listing appear on the map, you will need to click "Address Check" and then "Save Address." Without completing this step, it will not show on the map.

Step 1/2

Listing Title / Business Name *

Listing Type * 100 / 100

Seller Type *

Contact Phone *

Mailing Address *

Map Marker Location ☒ Search By Map Provider ☐ Manual Coordinates

Type an Address Address Check

Directions

If special directions, please provide here

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ADDRESS CHECK, VERY IMPORTANT

Verify the Address Please verify the address below and update any incorrect information.

Full Address
23621 Hudson Flat Rd Midland SD 57532

Country **US** State (or Province) **SD**

County (or District) **Haskell** City (or Town, Village) **Midland**

Borough (or Suburb, Neighborhood)

Postcode **57532**

Latitude of location **43.9695** Longitude of location **-99.9018**

Detailed Address
23621 Hudson Flat Rd, Midland, SD 57532

Confirm and update address

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South Dakota Fresh Connect

VIEW MAP ADD SELLER LISTING ADD BUYER LISTING ABOUT US

🔍 📍 👤 [Create Listing](#)

Add Seller Listing

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Step 1/2

Listing Title / Business Name*
Hudson Flat Produce 81 / 100

Listing Type*
Seller

Seller Type*
Individual

Contact Phone*
6055672819

Mailing Address*
23921 Hudson Flat Rd

Map Marker Location ☒ Search By Map Provider ☐ Manual Coordinates

23921 Hudson Flat Rd [Address Check](#)

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ADD DIRECTIONS, PHOTOS(UP TO 3), LOGO

Hudson Flat Produce [Previous Step](#)

Directions

Please come to the Tan colored house past the second cattle guard gate.

Step 2/2

Featured Image

Up to 3 Images (Max 5 MB)

[Browse](#)

Logo [Browse](#)

Profile*

Lifelong gardener who loves to share their produce with others.

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SELECT CROPS ON DROP DOWN ARROWS

https://sdfreshconnect.com/add-seller-listing/

Website

Step 3/3

Vegetables
Beans, Greens, Carrots, Corn, Sweet, Cucumbers, Picklers, Cucumbers, Slices, Eggplant, Lettuce, Onions, Green, Onions, White, Peppers, Bell, Potatoes, Pumpkins, Jack-o-lantern, Radishes, Squash, Summer, Squash, Winter, Sweet Potatoes, Tomatoes, Cherry, Tomatoes, Slicer

Fruits And Berries
Select an option

Meats
Chicken

Others
Select an option

Captcha
☐ I'm not a robot

Submit Form

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FINISHED! LISTING IS POSTED, WILL TAKE A COUPLE DAYS FOR IT TO APPEAR ON MAP

South Dakota Fresh Connect

VIEW MAP ADD SELLER LISTING ADD BUYER LISTING ABOUT US

Create Listing

Add Seller Listing

To create a listing(s), you will need to have an account. This is so that you can update, maintain, or remove your listing on your own. We do not manage or update listings.

Please Note: To have your listing appear on the map, you will need to click "Address Check" and then "Save Address." Without completing this step, it will not show on the map.

Successfully Saved

[View The Site](#) [Go To Home](#)

South Dakota Soil Health Coalition

CONTACT US

(605) 280-4190
116 N. Euclid Ave. Pierre, SD
sdsolhealth@gmail.com

QUICK LINKS

Add Seller Listing
Add Buyer Listing
About Us

CONNECTING BUYERS & SELLERS

SD Fresh Connect's mission is to connect local buyers and sellers right here in South Dakota.

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LISTINGS

The South Dakota Fresh Connect map below shows the locations of sellers and buyers of locally produced food and products. Refine your search using the filter tools left of the map. Create a free account to create your own pin on the map.

Listing 1: Hudson Flat Produce
Seller
23621 Hudson Flat Rd, Midland, SD 57552
Lifelong gardener who loves to share their produce with others.

Listing 2: Prairie Produce
Seller
98853 47th ave, Capetree, SD 57322
Growing food and raising livestock. This year we had a bumper crop of popcorn we would like to share with...

Listing 3: Horak Homestead LLC
Seller
38212 215TH ST, Virgil, SD 57379
Our primary goal is to help connect people to where their food is grown. For that reason, we offer a...

Listing 4: Want To Buy SD Grown Vegetables And Protein
Buyer
18 7th St NE, Worthington, SD 57382
We are a couple with three (3) basnet hounds on the edge of Worthington Springs, SD. We are not looking for...

Listing 5: Ethan & Heidi Cuny
Seller
heidi@ethandheidi.com
We raise BoerK meat goats using rotational grazing and multi-species grazing to increase the health of our...

Listing 6: Ford Garden
Seller
FORDS 515 (504 to 501)
515 to 501
501 to 501
501 to 501
501 to 501

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MAP VIEW

The South Dakota Fresh Connect map below shows the locations of sellers and buyers of locally produced food and products. Refine your search using the filter tools left of the map. Create a free account to create your own pin on the map.

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THANK YOU!

Any questions?

Wyatt Johnson

South Dakota Soil Health Coalition

Small Scale Ag/ Urban Ag Soil Health Technician