

# RUSLE2 Cover Crop Training

Four main concepts with cover crops are:

1. you have to get it planted,
2. tell the program what you planted,
3. release it after harvest if interseeding and
4. kill it in the spring if winter hardy or put a “winter killed annual crop” if it is not winter hardy.

## DEVELOPING COVER CROP MANAGEMENT FILE.

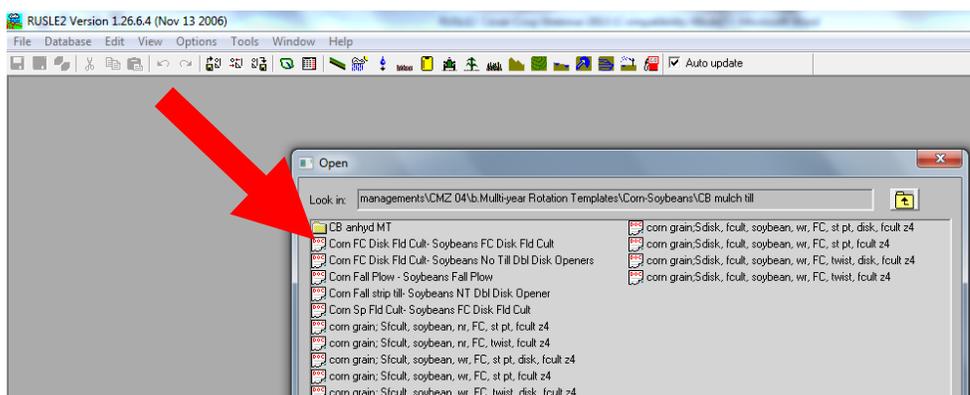
When developing a Cover Crop management file you should keep in mind the following:

- Must establish the cover crop (plant, drill, aerial, interseed, or broadcast)
- You must include the type of cover crop to be grown in the vegetation file.
- If seeding into a standing crop you must release the cover crop after harvest of main crop. Do not use “Harvest, kill crop, 50pct standing stubble” but use “Harvest, kill crop, 50 pct standing stubble, release cover crop”
- Do not include any fall tillage operation, most have a kill crop and will destroy the cover crop.
- Kill the cover crop in the spring by using a tillage operation that includes a kill operation in it or include a “Spray Kill Crop or Spray Kill cover in growing Crop”.

## Open management file

### Step One: Plant the Cover Crop

Select the appropriate Cropping Management template. Press the black triangle on the right side of the box to bring up the list. Find CMZ 04 folder. Open the CMZ 04 folder and go to managements\CMZ 04\b.Mullti-year Rotation Templates\Corn-Soybeans\CB mulch till. Select the first management file Corn FC Disk Fld Cult- Soybeans FC Disk Fld Cult



Open the management file Corn FC Disk Fld Cult- Soybeans FC Disk Fld Cult

Change the date to Oct 21.

Date, m/d/y	Operation	Vegetation	Yield (# harv. units)	Type of cover material	Cover mat add/remov e, lb/ac	Cover from addition, %
11/1/1	Fert applic. surface broadcast					
11/1/1	Chisel, st. pt.					
5/1/2	Disk, tandem light finishing					
5/5/2	Cultivator, field 6-12 in sweeps					
5/5/2	Sprayer, pre-emergence					
5/5/2	planter, double disk oprn	Corn, grain	140			
6/7/2	Sprayer, post emergence and fert. tank mix			weeds: 0-3 mo	250.00	14
10/20/2	Harvest, killing crop 50pct standing stubble				3856.8	77
11/1/2	Chisel, st. pt.					
5/1/3	Disk, tandem light finishing					
5/10/3	Cultivator, field 6-12 in sweeps					
5/10/3	Sprayer, pre-emergence					
5/10/3	Drill or airseeder, double disk	Soybean, mw 7in rows	40.0			
6/7/3	Sprayer, post emergence			weeds: 0-3 mo	250.00	14
8/1/3	Sprayer, insecticide post emergence					
10/5/3	Harvest, killing crop 20pct standing stubble				1096.9	48

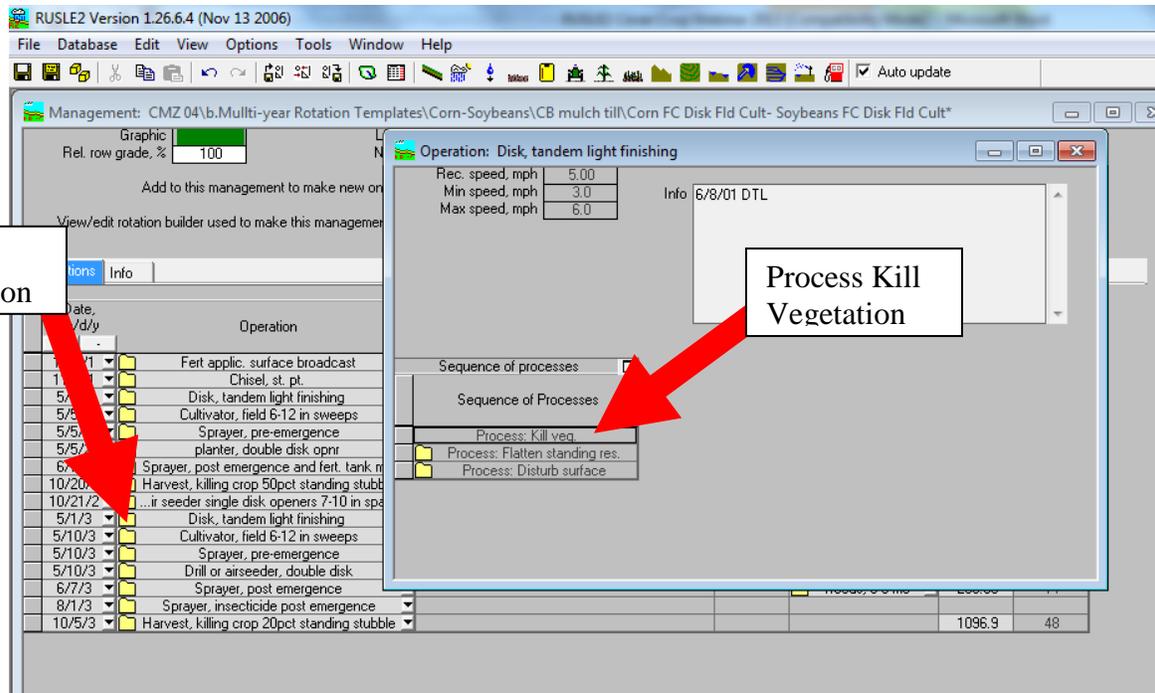
**Step Two: Type of Cover Crop Planted.** After harvest of corn change the Chisel operation to drill on Oct 21 and add rye winter cover crop mid Oct seeding to the vegetation file. Cover crops are divided into three seeding timeframes (mid Aug, mid Sept and mid Oct). This take into account the length of growing season each of the cover crops will experience and the size of the plants going into winter.

Change the operation to drill seeder, single disk openers.

Now you have to add a vegetation file. Select rye, winter cover crop, Mid Oct seeding

m/d/y	Operation	Vegetation	Yield (# harv. units)	Type of cover material	Cover mat add/remov e, lb/ac	Cover from addition, %
11/1/1	Fert applic. surface broadcast					
11/1/1	Chisel, st. pt.					
5/1/2	Disk, tandem light finishing					
5/5/2	Cultivator, field 6-12 in sweeps					
5/5/2	Sprayer, pre-emergence					
5/5/2	planter, double disk oprn	Corn, grain	140			
6/7/2	Sprayer, post emergence and fert. tank mix			weeds: 0-3 mo	250.00	14
10/20/2	Harvest, killing crop 50pct standing stubble				3856.8	77
10/21/2	Drill seeder single disk openers 7-10 in spac.	Rye, winter cover crop, mid Oct seeding	1000			
5/1/3	Disk, tandem light finishing				275.13	15
5/10/3	Cultivator, field 6-12 in sweeps					
5/10/3	Sprayer, pre-emergence					
5/10/3	Drill or airseeder, double disk	Soybean, mw 7in rows	40.0			
6/7/3	Sprayer, post emergence			weeds: 0-3 mo	250.00	14
8/1/3	Sprayer, insecticide post emergence					
10/5/3	Harvest, killing crop 20pct standing stubble				1096.9	48

**Step Three: Kill Cover Crop:** The tillage in the spring will kill the cover crop since it has a process kill vegetation operation built into the management file. To determine if a tillage operation has a process kill vegetation click on the yellow folder next to the operation tile and look in the sequence of processes.



**Add second year of cover crop.** In this scenario we will aerial seed into beans when leaves start to yellow. We must use the aerial interseeding operation and then release the cover crop at harvest.

**Add line before harvest, change date and operation file to 9/15 and Aerial Interseeding**

**Change harvest to include release cover crop**

**Add the cover crop that is seeded**

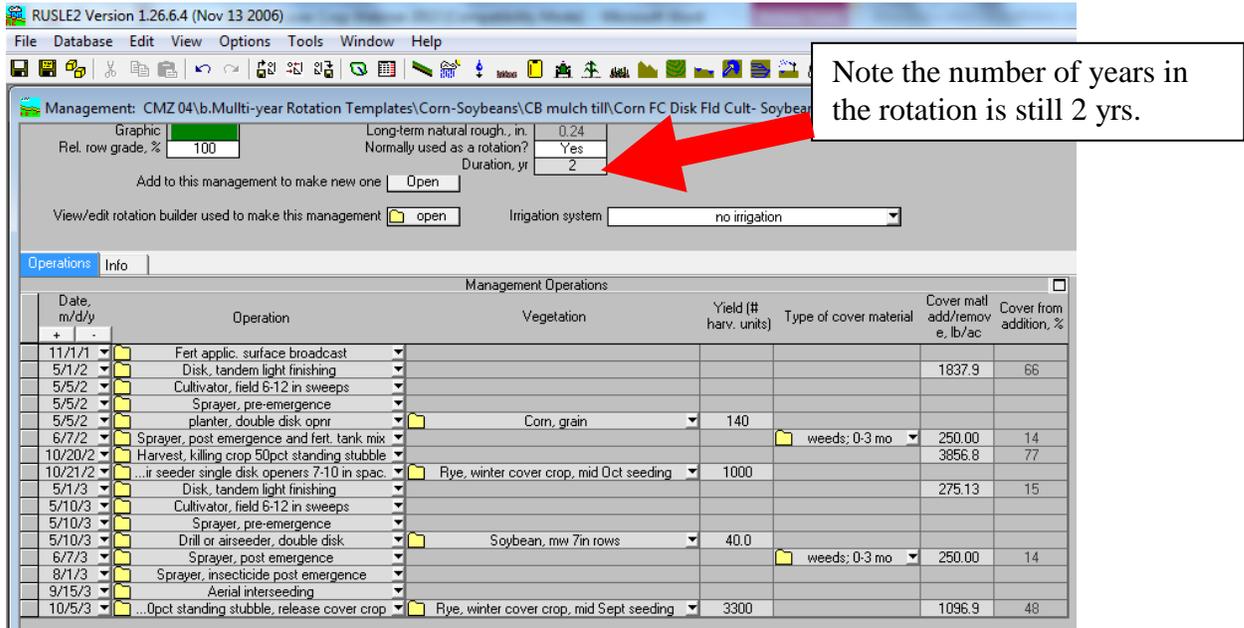
Date	Operation	Vegetation	Yield (# harv. units)	Type of cover material	Cover matl add/remov e, lb/ac	Cover from addition, %
11/1/1	Fert applic. surface broadcast					
11/1/1	Chisel, st. pt.					8.5
5/1/2	Disk, tandem light finishing					
5/5/2	Cultivator, field 6-12 in sweep					
5/5/2	Sprayer, pre-emergence					
5/5/2	planter, double disk oprn	Corn, grain	140			
6/7/2	Sprayer, post emergence and fert. tank mix			weeds; 0-3 mo	250.00	14
10/20/2	Harvest, killing crop 50pct standing stubble				3856.8	77
10/21/2	...ir seeder single disk openers 7-10 in spac.	Rye, winter cover crop, mid Oct seeding	1000			
5/1/3	Disk, tandem light finishing				275.13	15
5/10/3	Cultivator, field 6-12 in sweep					
5/10/3	Sprayer, pre-emergence					
5/10/3	Drill or airseeder, double disk	Soybean, mw 7in rows	40.0			
6/7/3	Sprayer, post emergence			weeds; 0-3 mo	250.00	14
8/1/3	Sprayer, insecticide post emergence					
9/15/3	Aerial interseeding					
10/5/3	...0pct standing stubble, release cover crop	Rye, winter cover crop, mid Sept seeding	3300		1096.9	48

Remove any fall tillage that will kill the cover crop. You can leave the spring disk operation since it will kill the cover crop and you will not have to add a spray kill crop operation.

**Remove the 11/1 Chisel operation as it has a kill crop process.**

Date	Operation	Vegetation	Yield (# harv. units)	Type of cover material	Cover matl add/remov e, lb/ac	Cover from addition, %
11/1/1	Fert applic. surface broadcast					
11/1/1	Chisel, st. pt.				149.88	8.5
5/1/2	Disk, tandem light finishing					
5/5/2	Cultivator, field 6-12 in sweeps					
5/5/2	Sprayer, pre-emergence					
5/5/2	planter, double disk oprn	Corn, grain	140			
6/7/2	Sprayer, post emergence and fert. tank mix			weeds; 0-3 mo	250.00	14
10/20/2	Harvest, killing crop 50pct standing stubble				3856.8	77
10/21/2	...ir seeder single disk openers 7-10 in spac.	Rye, winter cover crop, mid Oct seeding	1000			
5/1/3	Disk, tandem light finishing				275.13	15
5/10/3	Cultivator, field 6-12 in sweeps					
5/10/3	Sprayer, pre-emergence					
5/10/3	Drill or airseeder, double disk	Soybean, mw 7in rows	40.0			
6/7/3	Sprayer, post emergence			weeds; 0-3 mo	250.00	14
8/1/3	Sprayer, insecticide post emergence					
9/15/3	Aerial interseeding					
10/5/3	...0pct standing stubble, release cover crop	Rye, winter cover crop, mid Sept seeding	3300		1096.9	48

Final Management File with Corn Bean rotation and cover crops after both years.



Management: CMZ 04\b.Multi-year Rotation Templates\Corn-Soybeans\CB mulch till\Corn FC Disk Fld Cult- Soybean

Graphic: [Green bar] Long-term natural rough., in.: 0.24  
 Rel. row grade, %: 100 Normally used as a rotation?: Yes  
 Duration, yr: 2

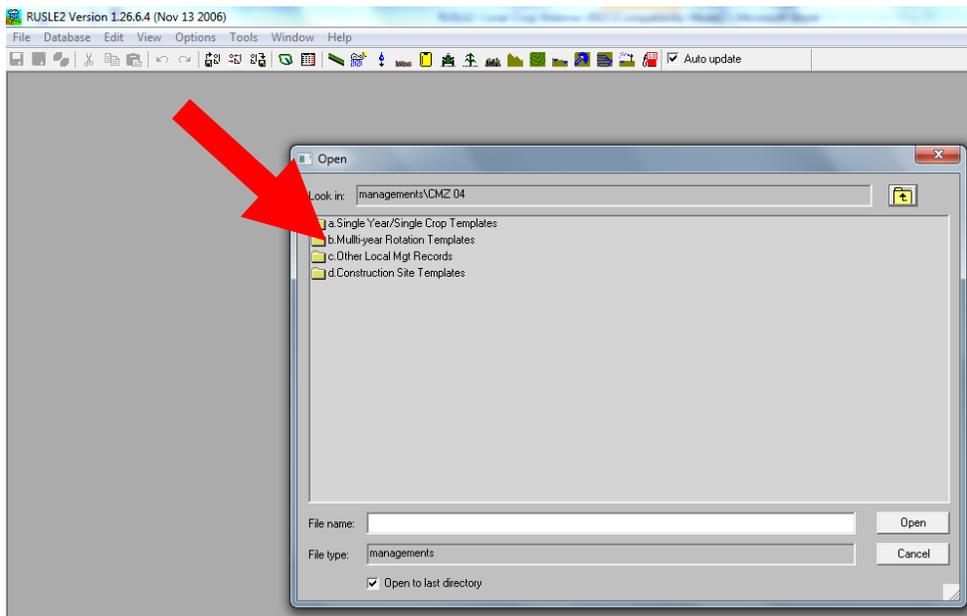
Add to this management to make new one:

View/edit rotation builder used to make this management:  Irrigation system: no irrigation

Date, m/d/y	Operation	Vegetation	Yield (# harv. units)	Type of cover material	Cover mat add/remov e, lb/ac	Cover from addition, %
11/1/1	Fert applic. surface broadcast					
5/1/2	Disk, tandem light finishing				1837.9	66
5/5/2	Cultivator, field 6-12 in sweeps					
5/5/2	Sprayer, pre-emergence					
5/5/2	planter, double disk opnr	Corn, grain	140	weeds: 0-3 mo	250.00	14
6/7/2	Sprayer, post emergence and fert. tank mix				3856.8	77
10/20/2	Harvest, killing crop 50pct standing stubble					
10/21/2	...ir seeder single disk openers 7-10 in spac.	Rye, winter cover crop, mid Oct seeding	1000		275.13	15
5/1/3	Disk, tandem light finishing					
5/10/3	Cultivator, field 6-12 in sweeps					
5/10/3	Sprayer, pre-emergence					
5/10/3	Drill or airseeder, double disk	Soybean, mw 7in rows	40.0	weeds: 0-3 mo	250.00	14
6/7/3	Sprayer, post emergence					
8/1/3	Sprayer, insecticide post emergence					
9/15/3	Aerial interseeding					
10/5/3	...Opct standing stubble, release cover crop	Rye, winter cover crop, mid Sept seeding	3300		1096.9	48

## RUSLE2 Management File already built in CMZ4.

Open up CMZ4 and click on *b. Multiyear rotation templates*



RUSLE2 Version 1.26.6.4 (Nov 13 2006)

File Database Edit View Options Tools Window Help

Auto update

Look in: managements\CMZ 04

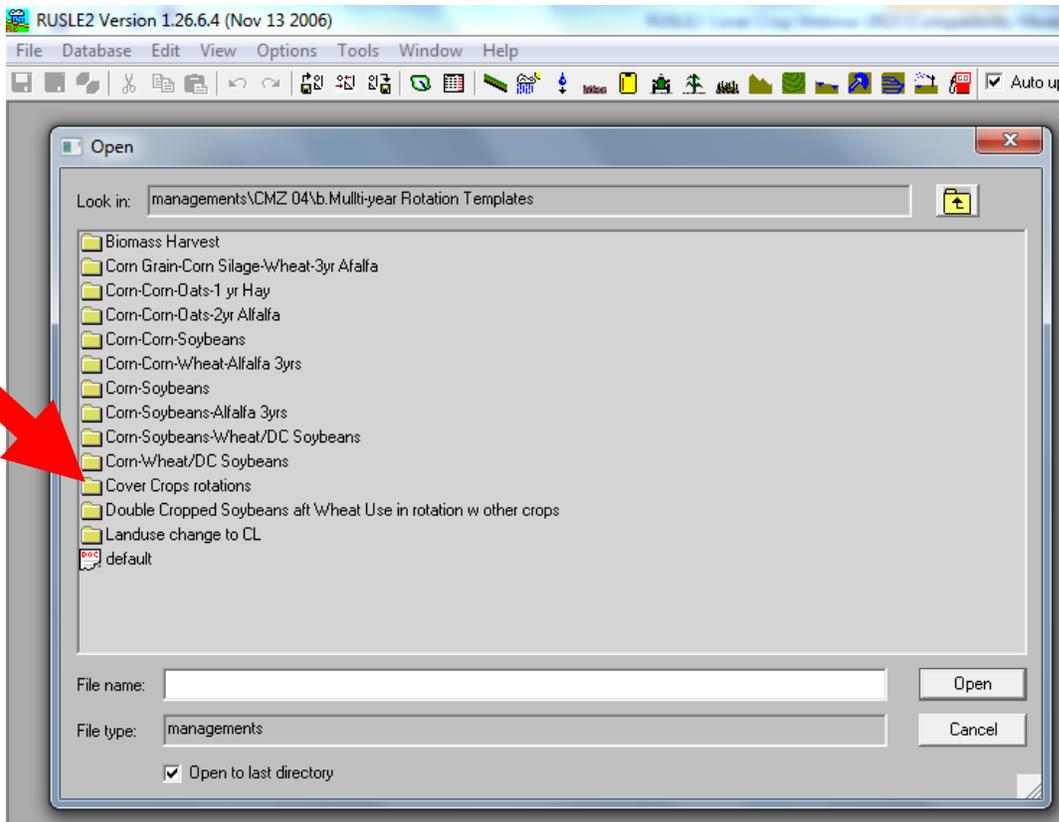
- a. Single Year/Single Crop Templates
- b. Multi-year Rotation Templates
- c. Other Local Mgt Records
- d. Construction Site Templates

File name:

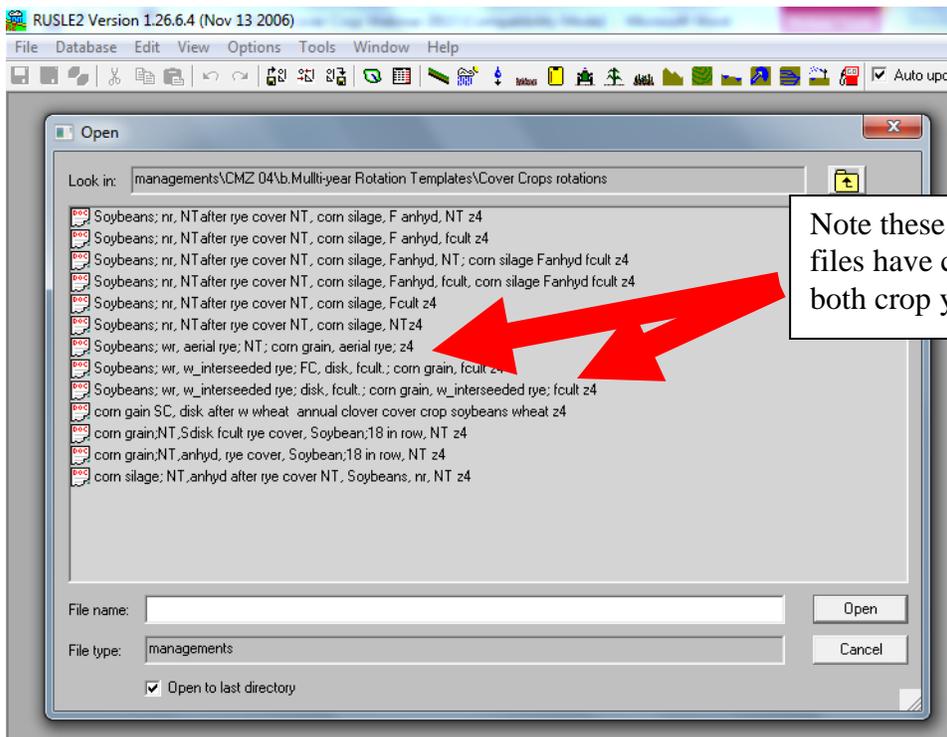
File type: managements

Open to last directory

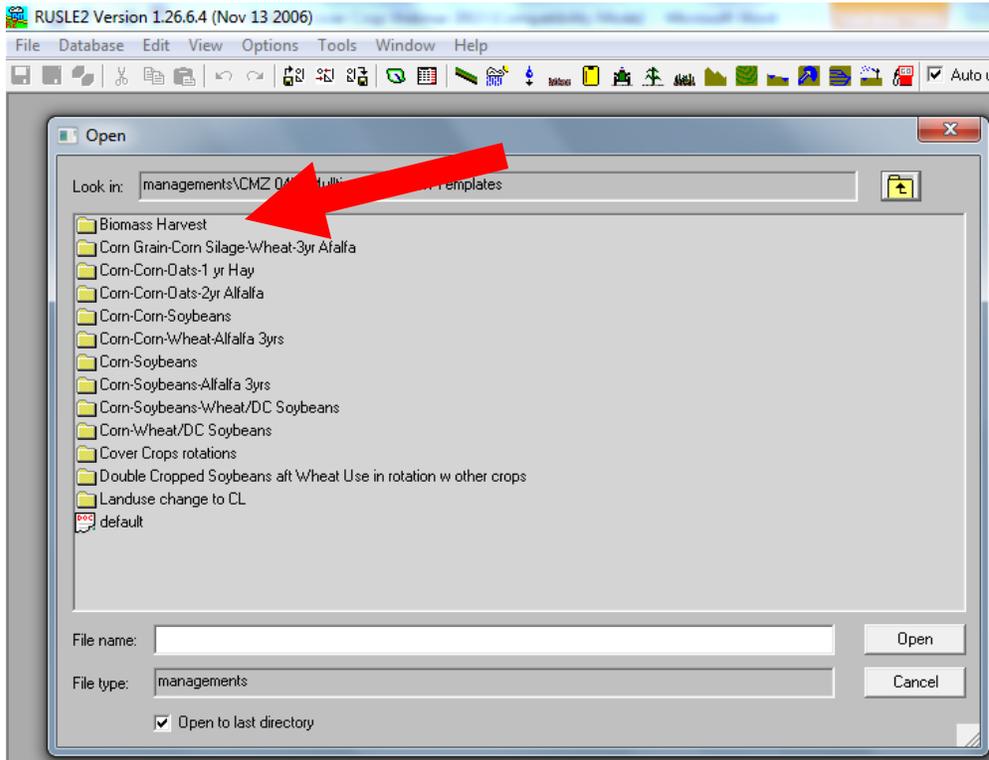
Next click on the cover crop folder.



Several cover crop management files have already been built and are ready for you to use.



Cover Crop files in the Biomass harvest folder.



Cover crops after the harvest of corn stover.

