UF UNIVERSITY of FLORIDA
IFAS Extension

Trainer's Manual
Module 6: Maintaining Organic Integrity

Materials and Preparation

Materials for Trainer
- TRAINER'S VERSION of Section 7 of the Organic Farm Plan: Maintenance of Organic Integrity of Standards
- 2 sets Legos **OR** poster board and markers

Advance Preparation
- Read pages 10-12 about Adjoining Land Use, and Harvest on page 50 of NCAT's *Organic Crops Workbook* (http://attra.ncat.org/attra-pub/PDF/cropsworkbook.pdf)
- Read sections 205.202, 205.271, and 205.272 of the NOP Standards (http://www.ams.usda.gov/nop/NOP/standards.html)
- Read "Maintenance of Organic Integrity Form Answer Key" and be prepared to facilitate role play

Materials for participants
- *Participant's Guide to Module 6*
- Pages 10-12 about Adjoining Land Use, and Harvest on page 50 of NCAT's O*rganic Crops Workbook* (http://attra.ncat.org/attra-pub/PDF/cropsworkbook.pdf)
- Relevant sections of the NOP Standards (http://www.ams.usda.gov/nop/NOP/standards.html)
- OMRI Products List (See approved seed treatments) (http://www.omri.org/OMRI_products_list.html)

Module Delivery (1 hour, 30 minutes)

I. Module Objectives and Content (5 minutes)

1. Distribute the *Participant's Guide to Module 6* to all participants. Also distribute a copy of the relevant portions of the National Organic Standards if you have not already done so.

2. Review and discuss the ***application objective.***

   After completing this module you will be able to provide growers with recommendations about methods for maintaining organic integrity in production, handling and transportation of products.

3. Review and discuss the ***learning objectives.***

   After completing this module you will understand:

   The concept of organic integrity as it applies to the production, harvesting, transportation, handling and/or processing of any certified organic product
   The different methods that a producer can use to physically protect the integrity of organic fields
   How to prevent commingling in a split production system
   The required documentation for record keeping and certification

4. Call attention to the ***topics*** that will be covered in this module.

   Requirements for buffers, signage, monitoring, etc. for adjoining lands
   Requirements for sharing of equipment with conventional production
   Provision for prevention of commingling during harvest, postharvest handling and transportation of product
      1. Harvest containers
      2. Packaging
      3. Storage facilities
      4. Transport
   Documentation required for certification relating to maintenance of organic integrity

II. Materials and Resources (5 minutes)

1. Point out that the *Participant's Guide to Module 5* includes a list of the ***Relevant Sections of the NOP Standards***.

   205.202 Land requirements
   205.271 Facility Pest Management Practice Standard
   205.272 Commingling and contact with prohibited substance prevention practice standard

2. Draw participants' attention to the list of ***Keywords*** in the Guide.

   Buffer zone. An area located between a certified production operation or portion of a production operation and an adjacent land area that is not maintained under organic management. A buffer zone must be sufficient in size or other features (e.g., windbreaks or a diversion ditch) to prevent the possibility of unintended contact by prohibited substances applied to adjacent land areas with an area that is part of a certified operation.

   Commingling. Physical contact between unpackaged organically produced and nonorganically produced agricultural products during production, processing, transportation, storage or handling, other than during the manufacture of a multiingredient product containing both types of ingredients.

   Detectable residue. The amount or presence of chemical residue or sample component that can be reliably observed or found in the sample matrix by current approved analytical methodology.

   Drift. The physical movement of prohibited substances from the intended target site onto an organic operation or portion thereof.

   Handler. Any person engaged in the business of handling agricultural products, including producers who handle crops or livestock of their own production, except such term shall not include final retailers of agricultural products that do not process agricultural products.

   Lot. Any number of containers which contain an agricultural product of the same kind located in the same conveyance, warehouse, or packing house and which are available for inspection at the same time.

   Production lot number/identifier. Identification of a product based on the production sequence of the product showing the date, time, and place of production used for quality control purposes.

Prohibited substance. A substance the use of which in any aspect of organic production or handling is prohibited or not provided for in the Act or the regulations of this part.

Records. Any information in written, visual, or electronic form that documents the activities undertaken by a producer, handler, or certifying agent to comply with the Act and regulations in this part.

Residue testing. An official or validated analytical procedure that detects, identifies, and measures the presence of chemical substances, their metabolites, or degradations products in or on raw or processed agricultural products.

Split operation. An operation that produces or handles both organic and nonorganic agricultural products.

III. Activity 1: Commingling (25 minutes)

1. Read the following statement from the Standard 205.201(a)5 of the National Organic Standards to the participants:

   The producer must use "physical barriers established to prevent commingling of organic and nonorganic products on a split operation and to prevent contact of organic production and handling operations and products with prohibited substances."

2. This exercise is designed to help participants visualize how to prevent commingling in an organic operation. It involves building a model of a storage facility or cooler that will be used for both organic and conventionally produced crops. ***You must have your own model to demonstrate for this exercise to work effectively.*** An example might be constructing a square which would represent a cooler and dividing the square down the middle with a different color to represent a wall separating different sections of a cooler, one for organic and one for conventional products. We recommend using Legos, which makes this activity more engaging. However, you can substitute a drawn model, using poster paper and markers.

3. Divide the participants into groups of two and give each group a bag of Legos that contains at least four different colors. Make sure you have Legos that are large (labeled safe for children under 2). They will need at least 20 pieces of each color.

4. Instruct them that they should use the Legos to build one of the following facilities to prevent contamination and commingling on the farm, showing them your demonstration model as an example. Assign one facility to each group. You may assign the same facility to more than one group and then compare the solutions they find.

   Facilities:
   - Materials storage shed
   - Transportation vehicle
   - Cooling facility
   - Equipment cleaning facility
   - Adjacent conventional and organic fields
   - Packing shed
   - Crop storage building

5. Allow them to build (or draw) their masterpiece for 15 minutes. For the remaining 10 minutes alloted to this exercise, have the participants walk around the room as a group and view the Lego art. Let the builders of each masterpiece question other participants about how they have prevented commingling on the farm.

IV. Activity 2: Save for a Rainy Day (1 hour)

1. **This activity involves two parts.** First, the participants develop a list of potential concerns about maintaining organic integrity on Southern Comfort Farm. Second, you lead a role play in which you lead the participants to discover all of the potential problems that exist on the farm. If you are pressed for time, you may ask each group to provide a quick summary of the problems that they identified rather than conduct a role play.

Part I. Participants develop list of potential concerns

2. Direct participants to read pages 10-12 "Adjoining Land Use" and "Harvest" on page 50 of NCAT's *Organic Crops Workbook*. They should also read sections 205.202, 205.271 and 205.272 of the NOP Standards.

3. Read "First Day on the Job" scenario to the participants.

First Day on the Job

You have just been hired as the "certification czar" for a private company that has recently been accredited by the USDA. It is your first day on the job after having a brief orientation and training week with the executive director. You assume the desk of the previous certification czar and are anxious to prove your worthiness to the organization. The last person who had the position left a folder on the desk that contains a grower's application. The label on the folder says "save for a rainy day". You check the file cabinet to get a feel for the filing system and notice that all of the other folders say things like "to do", "completed applications", "pending inspections" which are all pretty self explanatory. Knowing that a certification czar should be strong, you pick up the "save for a rainy day" folder and pull out the application. You find a **completed application** for Southern Comfort Farm. It includes the farm map and the completed section of the Organic System Plan that deals with maintenance of organic integrity. After a quick look at the application form, you see why it is in the "save for a rainy day" folder. There are some obvious problems. You decide to review the application, including the farm map, and identify the areas that are problematic. You need to explain the problems to the applicant and get him/her to clarify some issues and provide more information in several cases. Before you contact the grower, you figure that you should discuss your conclusions with the Executive Director so that you can determine if you're making the right decisions. Hopefully, you can impress your boss with your astute understanding of the National Organic Program and score some brownie points for your first raise.

4. Divide participants into groups of five or fewer. Assign a different part of Section 7 of the Organic Farm Plan. Parts A (Adjoing Land Use), C (Equipment) and D (Harvest) are lengthy and can take considerable time to complete. You may want to split these parts among two groups, assigning specific questions to each group. The parts are:

   A. Adjoining Land Use
   B. Missing in the forms
   C. Equipment
   D. Harvest
   E. Post-Harvest Handling
   F. Crop Storage
   G. Transportation

5. Each group should develop a list of the problems that they have identified with the information provided by the grower in the completed application. Ask each group to indicate the nature of the problem and what information they would want from the grower in order to process the application. Remind participants that the **completed** section of the Organic System Plan is what the farmer has turned in to his certifying agency. The participants should examine the information the farmer has provided, the description of Southern Comfort Farms, and the farm map, to identify potential problems of compliance with the National Organic Standards. Allow 30 minutes for this task.

Part II. Role play (or group reports)

6. After the groups have completed their lists of concerns, begin the role play. This should be fun and animated.

7. You play the Executive Director. You want to make sure that this new "certification czar" that you have hired really knows his/her business. You're out to test him/her, and this is a great opportunity to make sure you've hired someone who understands the National Organic Standards in detail.

8. Use the **TRAINER'S VERSION** of the Section 7 of the Organic Farm Plan: Maintenance of Organic Integrity. Only you have the trainer's version. It is **NOT** in the Participant's Guide. Develop your own questions based on each item in Section 7, or use the sample questions that we provide. We have provided the answers to our questions, too. Make sure that you cover all of the issues that we raise in your role play.

9. Call on different participants to play the certification czar as you work through your list of questions. Have each "czar" come to the front of the room. Ask him/her leading questions so that the important points in italics are covered. Remember, you're out to test your new hire. Be tough! Change certification czars periodically so that most, if not all, participants get to play this role. Allow 30 minutes for the role play.

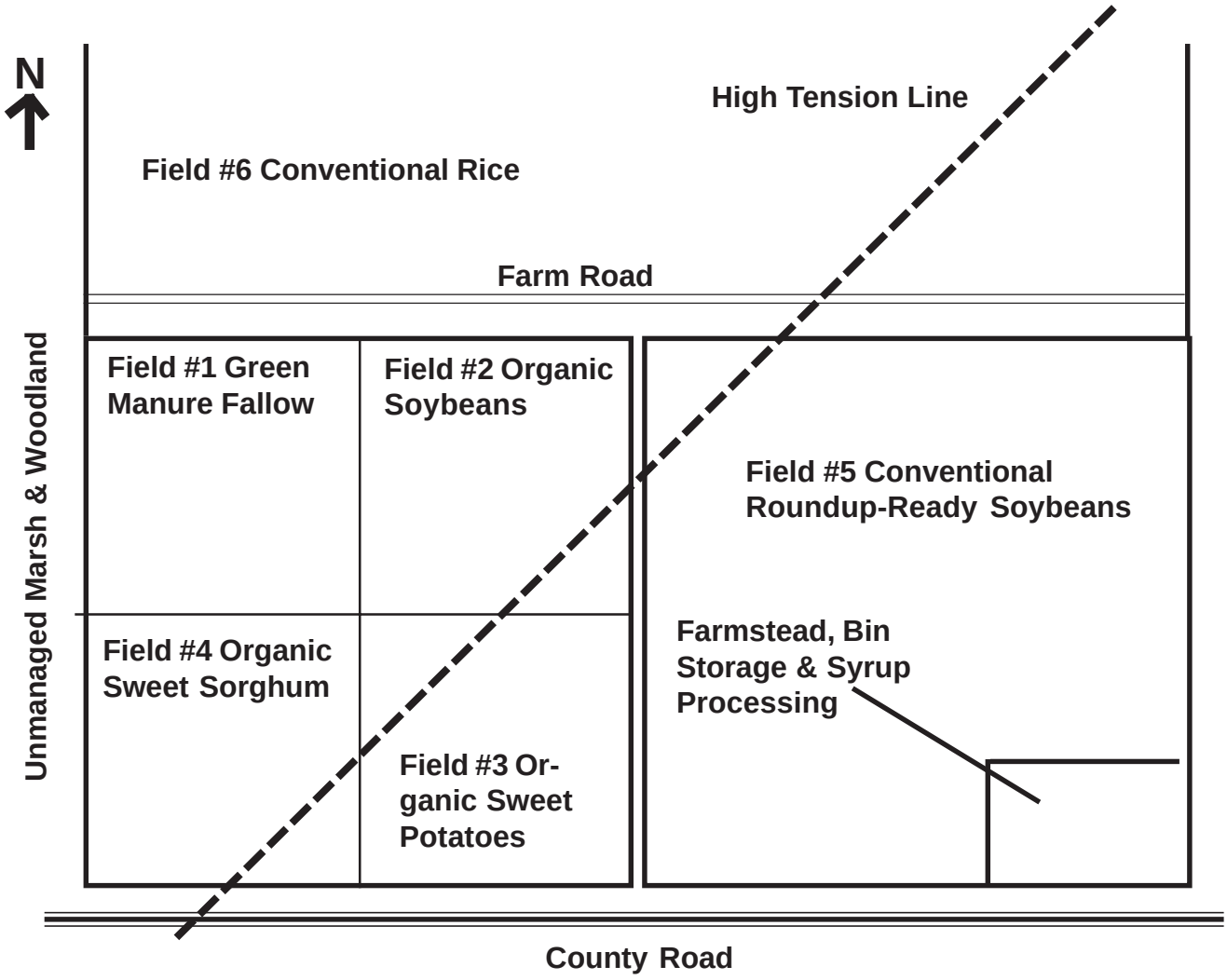
10. If you elected to use group reports instead of the role play due to time constraints, simply ask a representative from each group to identify the problems that were found.

Save for a Rainy Day!

Southern Comfort Farms is a split operation (conventional and organic production), with parallel production of soybeans. The organic acreage is divided into four fields that are currently under a rotation of soybeans, sweet potatoes, sweet sorghum for syrup, and a green manure fallow. Conventional acreage features Roundup-Ready soybeans on the east and rice on the river bottom to the North. The rice has pesticides applied by air.

The southern border of the farm is a two-lane paved county road. The western boundary is unmanaged marsh woodland. The land slopes gradually towards the northwest. There is a high tension power line crossing both the organic and conventional acreage from northeast to southwest.

Much of the equipment—most notably tillage equipment, trucks, wagons, and the grain combine are used on both the conventional and organic fields.



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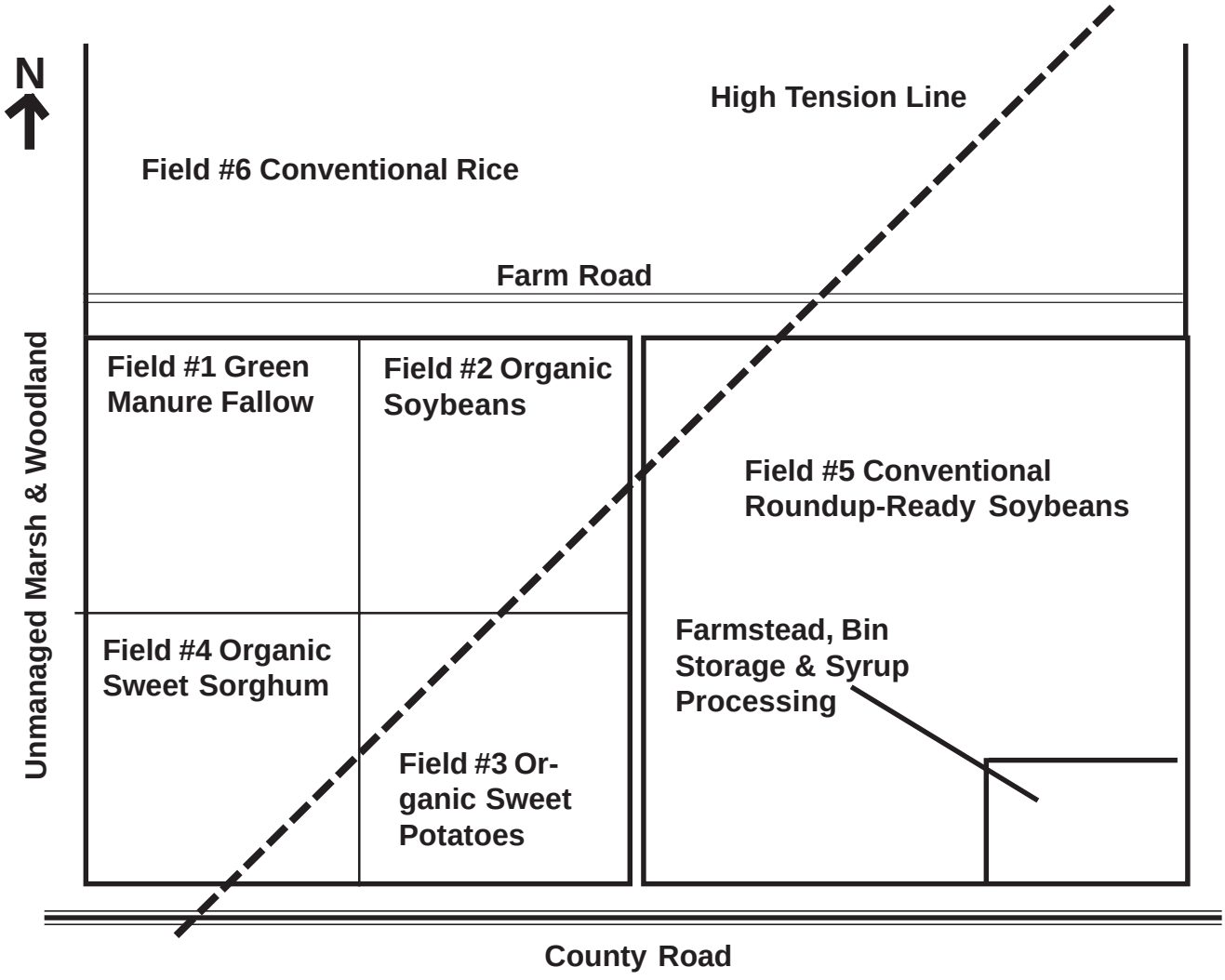

Trainer's Version. ***Notes in italics are provided in trainer's version only***

Maintenance of Organic Integrity	NOP Rule 205.201(a)(5) and 205.202(c)

A. ADJOINING LAND USE:

NOP RULE requires that organic production areas have distinct boundaries and buffer zones to prevent the unintended application of a prohibited substance or contact with a prohibited substance that is applied to adjoining land not under organic management. Adjoining land includes crop land, pastures, residential property, fallow land, etc. Buffer areas may change annually, depending on contamination potential from adjoining land uses. The width of the minimum buffer is 25 feet. The NOP Rule requires that the buffer must be sufficient in size or other features (windbreaks, diversion ditches) to prevent the unintended contact by prohibited substances applied to adjacent land areas. Crops within the required buffer must be left unharvested or harvested, stored, and disposed of as nonorganic crop, with records kept of crop disposition. Indicate buffer zones and show all adjoining land uses on your field maps.

List specific buffer areas you maintain. *(Show all adjoining land uses on your field maps.)* Not applicable

LOCATION OR FIELD NUMBER	TYPE OF BUFFER (CROP LAND, TREELINE, HEDGEROW, WILDLIFE PLANTING, GRASS STRIP)	WIDTH OF BUFFER	ADJOINING LAND USE	IF CROP IS HARVESTED FROM BUFFER, DESCRIBE USE (SALE, NON-ORGANIC LIVESTOCK FEED, SEED, ETC.)
1 *(Q1)*	Farm road *(Q2)*		Conventional rice	
2	Farm road *(Q2)*		Conventional rice	
2	Crop land[3]	*(Q3)*	Conventional soybean *(Q4)*	Sale (Q5)
3	Beneficial habitat	25' *(Q3)*	Conventional soybeans *(Q4)*	

General Comments:

There are contamination hazards for all four organic fields. There are conventionally managed fields on the North and East. County road crews probably spray along the roadway on the South. The power company may use prohibited practices and substances to manage vegetation under the high tension line, but the National Organic Standard does ***NOT*** *restrict crop production under electric lines.*

Q1: Why doesn't he have a buffer along the West side of the farm? Won't he get some contamination there?
A1: No buffer required along Western edge of farm – marshland and woodland
Q2: What's going to keep drift off those organic fields when he sprays that conventional rice field?
A2: The farm road certainly is not a sufficient buffer between conventional rice that is sprayed aerially and organic fields to the south.
Q3: Do you think 25 feet is enough buffer between that conventional soybean field and Fields 2 and 3?
A3: 25' of buffer space is customary although no specific amount of land is required by the standards. 25' is rarely adequate with aerial spraying so it depends on how the farmer will spray the soybean field.
Q4: Won't he get some cross-pollination between the conventional GMO soybeans and the organic beans?

A4: Soybeans are self-pollinating and are not considered a significant hazard for genetic drift. The situation would be very different if the organic and conventional fields were planted in a cross-pollinating crop like corn.
Q5: I'm still worried about those organic beans right next to that conventional field. Do you really think he can sell those beans as "organic"?
A5: Sell organic soybeans (one combine swath width) along edge of conventional field with the conventional crop to protect the integrity of the organic beans.

References:

§ 205.202 Land Requirements. Any field or farm parcel from which harvested crops are intended to be sold, labeled, or represented as "organic" must: (c) Have distinct, defined boundaries and buffer zones such as runoff diversions to prevent the unintended application of a prohibited substance to the crop or contact with a prohibited substance applied to adjoining land that is not under organic management.
See NCAT's Organic Crops Workbook "Adjoining Land Use" pp 10-12.

A. ADJOINING LAND USE: (continued)

If crops are harvested from the buffer zones with equipment used for harvesting organic crops, what safeguards do you use to protect organic crops from contact with buffer crops during harvest?
Harvest buffer zone crops with crops from conventional field. Equipment is cleaned out before harvest of organic crops.

Sample Questions

Q1: I'm not quite sure what he means here, are you? Remind me again of what the Standard says about this. What exactly is it he needs to do to make this work?

A1: If the producer "sacrifices" a portion of organic crop to provide a buffer zone, the sacrificed grain must be treated as if it were conventional. Equipment cleanout must follow harvest of the sacrificed crop, ***not*** *precede it. Clean-out protocols must be established and clean-out logs must be maintained. See section C. Equipment for further information.*

What additional safeguards do you use to prevent accidental contamination? none

Written notification to: √ * highway departments √ electric companies √ aerial spray companies/airports
adjoining landowners drainage commissions farm service office other (specify)
*Documented phone contact with highway department.

Q1: You mean he ***called*** *the county road people and they said, "Fine, we won't spray along your property line on that road"? Look, I think our reputation's at stake here. Do you think that's good enough? I mean are we really sure they won't be spraying who-knows-what out there?*

A1: Phone contacts and copies of the farmer's letters might not be considered adequate by a certifier. The certifier may want copies of agreements with county highway department and the electric company.
Q2: Look, I'm still not comfortable with this. What else can we do to make sure the power company and the road people don't spray pesticides out there?

A2: Farmers may need to volunteer to manage weeds on roadsides or under power lines themselves if they want to ensure that pesticides will not be used.

Have you posted "No Spray" signs along roadsides that adjoin organic fields? √ Yes No

Q1: What makes you think those "No Spray" signs are going to do any good?

A1: Putting No Spray signs between the conventional rice and soybean fields and the organic fields could be an additional safeguard, especially since custom pesticide and fertilizer application work is done.

Q2. Don't you think it's going to look a little funny to the neighbors to put "No Spray" signs along the roadway in Fields 3 and 4 when Field 5, right next to them, is sprayed?

A2: Discuss circumstances where you might NOT want to use No Spray signs, cases where their use may be confusing to people who do not understand the details of the National Organic Standards.

Do any fields or portions of fields flood frequently? (more than once every ten years) √ Yes No

If yes, list field numbers 1 and 4

Q1: What's the lay of the land on this place? Where does the water that feeds that marsh come from?

A1: The farm land slopes towards the northwest and the marshland. Fields on the western edge of the farm occasionally flood during periods of heavy rain. Fields 2 and 3 are therefore subject to runoff from the conventional Round-Up Ready Soybean field. Runoff diversions should be provided to prevent prohibited substances from contacting organic crops. §205.202 (c)

How do you monitor for crop contamination? √ visual observation residue analysis GMO testing photographs √ wind direction/speed data other (specify)

Q1: What does he mean by "Visual Observation"? Is he only looking for pesticide damage? Is that adequate?

A1: The farmer needs to provide wind direction and speed data. He must have a log to prove document these data. This farmer does not have written documentation.

<u>Note:</u> GMO- Soybeans do not usually have a drift issue but cleaning shared equipment would be a problem and would raise a red flag to the certifier.

How often do you conduct crop contamination monitoring? weekly monthly annually √ as needed other (specify)

Q1: What's he mean "as needed"? When he has the time and inclination?

A1: Aerial spraying is especially hazardous due to the higher risk of drift and of misapplication. Did the farmer check drift and wind data when conventional rice fields to the north were aerially sprayed? In this case "as needed" means "as required", NOT "as convenient".

Do you grow the same crops organically, as well as in transition, and/or conventionally? √ Yes No

This is called 'parallel production'. If yes, list specific crop varieties in the next table for both organic and transitional/conventional crops.

If you grow any conventional or transitional crops, please fill out the following tables. Not applicable

SPECIFIC CROPS/VARIETIES	FIELD NUMBERS/NAME	TRANSITIONAL (T) OR CONVENTIONAL (C)	CHECK IF GMO (✔)	TOTAL ACREAGE	PLANNED USE OF CROP (SALE, SEED, NONORGANIC LIVESTOCK FEED, ETC.)	SAME AS ORGANIC CROP? Y OR N
Round Up Ready Soybeans	5	C	√	50	Sale	No

Prohibited soil amendments used on conventional crops:

PRODUCT NAME	WHO APPLIES? SELF (S) OR CUSTOM (C)	FIELD NUMBERS /NAMES WHERE APPLIED	WHERE STORED? (ON-FARM OR OFF-FARM; WHERE ON FARM?)
10-20-10	C	5	Off Farm

Q1: Now explain to me how this is going to work. This custom applicator comes in here and he sees two soybean fields right next to each other. What's to keep him from just rolling right on across that field of organic beans too?

A1: In practice the custom applicator should be provided a map and clear instructions about what fields should be fertilized to ensure that only conventional fields are treated. Additional signage as mentioned earlier will help also. It would be wise for the farmer to explain these precautions in the OSP.

Prohibited herbicides/pesticides used on conventional crops:

PRODUCT NAME	WHO APPLIES? SELF (S) OR CUSTOM (C)	FIELD NUMBERS/NAMES WHERE APPLIED	WHERE STORED? (ON-FARM OR OFF-FARM; WHERE ON FARM?)
Round Up	S	5	On Farm, in farmstead equipment shed

Q1: What rig is he going to use to apply that RoundUp? Do you see any potential problem here?
A1: There is a concern here because many organic farmers also use sprayers, specifically for the application of allowed pesticides, soil bio-activators, and allowed foliar fertilizers. Shared equipment such as the ground sprayer could be a breach of organic integrity unless equipment has excellent clean-out protocols and a well-kept clean-up log. Many certifiers might deny dual-use of spray equipment and require the purchase of a second rig. In such cases, clear labeling of the rigs (perhaps with large letters "C" and "O" might be required. See section C. Equipment for more detail.

C. EQUIPMENT:

To prevent commingling and contamination, all equipment used in organic crop production must be free of non-organic crops and prohibited materials. Equipment used for both organic and non-organic farming must be cleaned and flushed prior to use on organic fields or crops. Keep records of equipment clean and flush activities.

List equipment used for planting, tillage, spraying, and harvesting. Not applicable

EQUIPMENT NAME	OWNED (O), RENTED (R), OR CUSTOM (C)	CHECK IF USED ON BOTH ORGANIC AND CONVENTIONAL (✔)	HOW IS EQUIPMENT CLEANED BEFORE USE ON ORGANIC FIELDS?
Ground sprayer	O	√	Thoroughly rinsed
Plow	O	√	Hose Down
Disc	O	√	Hose Down
Harvest truck	C	√	Swept out
Sweet potato digger	C	√	Hose Down
Combine	O	√	Compressed Air
Row crop cultivator	O		
Planter	O	√	Compressed Air
Sorghum harvester	O	√	Compressed Air

Q1: Now I'm really getting worried about all this "dual use" of equipment. You tell me what you think we ought to require this guy to do.

A1: Farmer must demonstrate to inspectors that s/he is doing an adequate job of preventing commingling and contamination. As mentioned earlier, dual-use of a spray rig might not be allowable; simply rinsing the unit is not likely to be considered adequate. There are commercially available products used for cleaning of equipment between uses, and one would expect these to be employed. Furthermore, a specified area for cleaning must be used that would prevent contamination to organic crops. Finally, clean-out protocols must be established and a clean out log must be kept and made available to inspectors.

Is your equipment maintained so that fuel, oil and hydraulic fluid do not leak? √ Yes No Not applicable

Q1: All he's got to say is "yes"? Do you think that's good enough?

A1: Fuels, lubricants, and coolants are all considered prohibited substances and may not contaminate soil or crops. If equipment is old, leaking oil and engine fluids may be a concern.

If you use a sprayer:

What type? Ground Sprayer Did you purchase it new or used? new √ used

Q1: Now here's another problem with that sprayer. On top of it all, it's used. Explain to me again what you think we ought to make him do.

A1: Other problems with sprayers have been discussed. This is another issue—this sprayer was previously owned by another farmer. Since not all chemicals (such as 2,4-D) are as easily cleaned from a sprayer as Round-up, this argues for denying dual-use for the sprayer because it's history is uncertain.

Other equipment:

Could any equipment you use have been contaminated by previous uses? Yes √ No

If yes, describe:

Q1: Well, I'm glad to see he's so sure there's no problem here with all that dual use equipment. Are you satisfied with this? Think we ought to just accept his word for it?

A1: Discuss which kinds of used equipment might present the greatest contamination hazards. How can the farmer know if equipment has been previously used in a manner that could jeopardize the integrity of his organic crops? Again, cleanout protocols and logs must be established and maintained consistently to ensure there is no on-going contamination.

References

§ 205.272 Commingling and contact with prohibited substance prevention practice standard. (a) the handler of an organic handling operation must implement measures necessary to prevent the commingling of organic and nonorganic products and protect organic products from contact with prohibited substances. Note that this section refers to "handling" of organic crops, not production. However, the principles of non-contamination and no commingling apply as well to production stages as to handling.

See NCAT's Organic Crops Workbook, "Equipment" pp.56-57.

D. HARVEST:

NOP Rule 205.272(b)(1) and (2) requires that containers, bins, and packaging materials must not contain synthetic fungicides, preservatives, or fumigants. All reusable containers must be thoroughly cleaned and pose no risk of contamination prior to use.

How are your organic crops harvested? √ mechanical √ by hand

Are any organic crops custom harvested? √ Yes No

If yes, provide name and address of custom harvester. Billy Bob Huckabee, 782 Harvester Lane, Farmville, AR

Sweet Potatoes are custom harvested, both with a mechanical digger and by hand. Sweet Sorghum is harvested by hand. The soybeans are mechanically harvested.

Describe steps taken to protect organic crops from commingling and contamination during harvest.

Combine is cleaned out with an air hose. All equipment parts are cleaned out real good. No special steps taken for sweet potatoes or sorghum. Dual use truck boxes and gravity wagons are swept out prior to hauling organic soybeans. Trucks and containers are used for agricultural products only, not fertilizers or chicken litter, etc.

Q1. Let's take this one at a time. Start with his sorghum. See any problems there?

A1: At this point, there are no obvious contamination or commingling issues with the sorghum.

Q2: Now what about the sweet potatoes?

A2: Depending on the complexity of the digger (i.e. can conventional crop be "hung up" in the machinery) it may or may not need clean-out protocols and a clean-out log. There is also a question of possible harvest container contamination, which is addressed later on.

Q3: Now I think the beans are the biggest problem. It looks to me like there's some real potential for commingling here. What problems do you see?

A3: The farmer needs to show proof to certifier that there are no commingling hazards in general. Cleaning of the combine raises some concern because there are many parts in which a conventional soybean could get stuck. The shields, screens, hopper and augers must all be thoroughly cleaned. One customary means of "cleaning" a combine before organic harvest is "purging." Purging entails harvesting several bushels of organic crop to push and drag the remains of any conventional crop out of the harvester. Those few bushels are then treated as "conventional." Purging might not be considered an adequate protocol when genetically engineered crops are involved. Also, organic crop harvested as a buffer is already considered conventional and cannot be used for purging.

Q4: On top of that, the conventional beans are on higher ground – probably harvested first in wet years. What do you think?

A4: Because organic production is on lower ground and it is therefore likely that the conventional fields will be harvested first in wet years, cleanout protocols and a clean-out log are essential.

What containers are used for harvesting? √ gravity wagons/boxes √ truck boxes cardboard/waxed boxes √ wooden totes √ plastic containers other (specify)

Gravity wagons/boxes and truck boxes are used for soybeans. A flat bed truck is used to haul sorghum. Wooden totes and plastic containers are used for sweet potatoes.

Q1: Lots of containers and such are involved in this. And we've got that soybean issue again. What do we need for this guy to do?

A1: Adequate cleanout of truck boxes and gravity wagons must be documented to ensure they are cleared of conventional crops before organic soybeans are transported.

Are containers new or used? √ new √ used

If used, what did they contain prior to organic use? Trucks and gravity wagons were purchased used. They were used for conventional crop harvest, but well cleaned when acquired. Both new and used containers are used for sweet potatoes. Don't know what the used containers were originally used for but they were rinsed prior to use.

Q1: What about those used containers? See any problems there?

A1: Farmer knows that conventional grain and forage crops were hauled with the trucks and gravity boxes. Sweeping or compressed air clean-out should be sufficient. Clean-out protocols and logs should be maintained to ensure on-going management of integrity. However, the farmer does not know what previous use was of the sweet potato containers. This could jeopardize the organic integrity if they became impregnated with prohibited materials. Discuss whether rinsing is adequate cleaning. Should different totes be acquired?

Are the containers used for organic crops only? *Yes √ No*

Describe potential contamination or commingling problems you have with harvest of organic crops. none

Trucks boxes and gravity wagons have dual-use.

Q1: What documentation do we need here?

A1: Clean out protocols and logs must be maintained for the wagons and truck boxes.

References:

§ 205.272 Commingling and contact with prohibited substance prevention practice standard.

(a)The handler of an organic handling operation must implement measures necessary to prevent the commingling of organic and nonorganic products and protect organic products from contact with prohibited substances.

(b)The following are prohibited for use in the handling of any organically produced agricultural product or ingredient labeled in accordance with subpart D of this part:

(1) Packaging materials, and storage containers, or bins that contain a synthetic fungicide, preservative, or fumigant;

(2) The use or reuse of any bag or container that has been in contact with any substance in such a manner as to compromise the organic integrity of any organically produced product or ingredient placed in those containers, unless such reusable bag or container has been thoroughly cleaned and poses no risk of contact of the organically produced product or ingredient with the substance used.

See NCAT's Organic Crops Workbook, "Harvest" pp 47-49.

E. POST-HARVEST HANDLING: √ Not applicable

NOP Rule 205.201(a)(5) requires that post-harvest handling procedures do not contaminate organic products with non-organic crops or prohibited materials. *For on-farm processing, you may need to complete an Organic Handling Plan Application.*

Describe your post-harvest handling procedures and equipment.

Sweet potatoes are field-cured in their totes under tarps. Tarps are used only for field curing.

Q1: Does he need to explain his processing procedures here?

A1: Sorghum syrup processing is a complex operation and is addressed separately in a handling system plan. Only simple operations such as washing, brushing, or field-curing are treated as post-harvest procedures.

Is the processing area and equipment used for both organic and non-organic products? Yes √ No

If yes, describe steps taken to prevent commingling and contamination.

Does packaging present any contamination problems for your organic products? Yes √ No

If yes, what are they?

Q1: What about those sweet potato totes?

A1: In this instance, the farmer is shipping the sweet potatoes off of his farm in the harvest totes. See the earlier discussion of possible contamination issues.

Check types of packaging material used: bulk paper cardboard √ wood glass metal foil √ plastic waxed paper aseptic natural fiber synthetic fiber other (specify)

In what form are finished products shipped? dry bulk liquid bulk tote bags √ tote boxes paper bags foil bags metal drums mesh bags cardboard drums cardboard cases √ plastic crates other (specify)

F. CROP STORAGE: No organic crop storage

Operators must keep organic and non-organic crops in separate storage areas and prevent commingling and contamination. Storage records must be maintained.

Describe your storage locations.

STORAGE ID #	TYPE OF CROPS STORED	TYPE OF STORAGE	CAPACITY/SIZE	ORGANIC (O), TRANSITIONAL (T), BUFFER (B), CONVENTIONAL (C)
	Organic soybeans	Bins		O
	Conventional soybeans	Bins		C

Do you use the same storage areas for organic, transitional, buffer, and/or conventional crops. √ Yes No

If yes, how do you segregate organic crops from non-organic crops? Conventional and organic soybeans are stored in separate bins. Custom hauler is instructed about procedures to prevent commingling and contamination.

Q1: How's he going to keep the organic and conventional bins straight anyway?

A1: Farmer does not mention it, but bins should be clearly marked as to content in order to distinguish organic from conventional.

How do you clean storage units prior to storage of organic crops?
Grain storage bins are swept out and visually inspected.

How do you prevent/control insect pests in crop storage areas? No insect problems
Clean bins once they are empty. Clean-up around bins. Pyrethrum would be used if sanitation measures are inadequate.

Q1: Hey, he got one right! What's he doing here that's good?

A1: Note this good example of pest control priorities!! Natural pesticides will be used only after other physical and cultural methods fail.

How do you control rodents in crop storage areas? No rodent problems - Barn cats

Q1: Do the barn cats pose any risk?

A1: There may be health problems associated with the presence of cat feces and urine.

What stored crop inputs have you used in the last three years? none

synthetic fumigants rodenticides sprouting inhibitors ripeners growth regulators

preservatives oils coloring agents waxes √ other (specify) Pyrethrum

Are any stored crop inputs used or planned for use on organic crops? √ Yes No

If yes, specify input and retain labels. Pyrethrum

References:

§ 205.271 Facility pest management practice standard.

(a) The producer or handler of an organic facility must use management practices to prevent pests, including but not limited to:

(1) Removal of pest habitat, food sources, and breeding areas;

(2) Prevention of access to handling facilities; and

(3) Management of environmental factors, such as temperature, light, humidity, atmosphere, and air circulation, to prevent pest reproduction.

(b) Pests may be controlled through:

(1) Mechanical or physical controls including but not limited to traps, light. or sound; or

(2) Lures and repellents using nonsynthetic or synthetic substances consistent with the National List.

(c) If the practices provided for in paragraphs (a) and (b) of this section are not effective to prevent or control pests, a nonsynthetic or synthetic substance consistent with the National List may be applied.

(d) If the practices provided for in paragraphs (a), (b), and (c) of this section are not effective to prevent or control facility pests, a synthetic substance not on the National List may be applied, Provided, That, the handler and certifying agent agree on the substance, method of application, and measurers to be taken to prevent contact of the organically produced products or ingredients with the substance used.

(e) The handler of an organic handling operation who applies a nonsynthetic or synthetic substance to prevent or control pests must update the operation's organic handling plan to reflect the use of such substances and methods of application. The updated organic plan must include a list of all measures taken to prevent contact of the organically produced products or ingredients with the substance used.

(f) Notwithstanding the practices provided for in paragraphs (a), (b), (c), and (d) of this section, a handler may otherwise use substances to prevent or control pests as required by Federal, State, or local laws and regulations, Provided, That, measures are taken to prevent contact of the organically produced products or ingredients with the substance used.

See NCAT's Organic Crops Workbook, "Storage" pp 50-53.

G. TRANSPORTATION: Not applicable

Who is responsible for arranging transportation of organic products? √ self buyer other (specify)

Describe how organic products are transported.

Bulk truck for soybeans. Flat-bed truck to haul totes of sweet potatoes.

What potential contamination or commingling problems do you have with the transport of organic crops? none

Q1: What does he mean "none"? Isn't he hauling the conventional and the organic beans in the same truck?

A1: Farmer cannot really answer "none" when both conventional and organic soybeans are being shipped from the same facility. Discuss possible commingling hazards and what might be done to prevent them.

What steps are taken to protect the integrity of organic products during transport?

dedicated organic only √ inspecting transport units prior to loading √ cleaning transport units prior to loading √ use of Clean Truck Affidavits √ letter/contract with transport company stating organic requirements other (specify)

Q1: This guy's on the ball with this part of the operation. What's he doing right here?

A1: Farmer is taking a lot of appropriate action in this area.

References:

§ 205.272 Commingling and contact with prohibited substance prevention practice standard.

(a)The handler of an organic handling operation must implement measures necessary to prevent the commingling of organic and nonorganic products and protect organic products from contact with prohibited substances.

See NCAT's Organic Crops Workbook, "Transportation of Products" p58.