

Protocols for ISU Field/Farm-Based Research Under COVID-19

RFR-A2033

Mark Honeyman, associate dean
for operations
Joe Colletti, senior associate dean
College of Agriculture and Life Sciences

Introduction

In mid-March 2020, as a responsible safety response to the COVID-19 pandemic, ISU research was only continued with additional precautions. As a guide for the ISU College of Agriculture and Life Sciences' extensive network of field and farm-based research activities, the following protocols for field research under the COVID-19 pandemic were developed and posted.

Protocols for ISU Field/Farm-Based Research Under COVID-19

Disclaimer: This document provides only general guidelines. It does not cover all possible variations of field/farm research. Nor does it cover all scenarios.

General Policy

- The primary goal of this guidance is the **health and safety of ISU individual field/farm staff**.
- The primary defense against infectious viral spread is **personal hygiene, social distancing**, and shelter-in-place.
- To ensure continuity of operations, where possible, regular duty will shift to a combination of 1) work at home, 2) only essential on-site field work, and 3) field work at safe distances.
- The secondary line of defense is **disinfection and material quarantine** to reduce risk of indirect transmission.
- Most field research involves a relatively small number of staff, and the majority of the workload allows for proper **physical distancing**. Where possible, schedules should be developed to help **stagger work assignments and work locations for physical distancing**. For field research projects that employ larger groups, it is imperative to stagger work assignments in space and time to allow for physical distancing. If a necessary task requires two or more people to complete, they will implement safe distancing.
- When possible, staff should be “permanently” assigned to specific work spaces. The goal is to minimize direct contact between staff or contact with materials or surfaces touched by others.
- Instructions for field research will be communicated virtually prior to entering the field. In-field communication and coordination is very important.
- Daily, each team member will update their research tasks for the following day and the remainder of the season and store the document in a Cybox folder that is shared with the research team. This document will be prepared with sufficient detail to allow another team member to fill-in for a researcher who needs to enter into self-quarantine.
- Instructional videos will be created whenever possible to train any new personnel in necessary research tasks. These videos will provide baseline instructions, which can be followed-up either virtually (preferred) or in person, but while maintaining at least 6 ft of separation.

Health of Field/Farm Personnel

- On a daily basis, field personnel will take their body temperature to ensure they do not have an elevated body temperature.
- Any researcher who exhibits a fever or other symptoms of COVID-19 will contact his/her supervisor and then enter into self-quarantine until healthy before returning to work.
- Any person who has experienced potential COVID-19 symptoms during the past 14 days will not engage in field activities unless/until cleared for work by a medical professional *and* with permission of his/her supervisor.

Safe Distancing, Hand Washing, Disinfection, and Material Quarantining

- Recommended **social distancing is 6 to 10 ft apart**. If interactions need to take place in person, they will be conducted with a minimum separation distance of 6 ft and ideally outdoors. For example, as a rule-of-thumb, in a field planted at 35-in. (Curtiss Farm) or 30-in. (Agronomy Farm) row spacing would involve maintaining a minimum separation of 2 or 3 rows, respectively.
- This means **two people should not ride in the same farm truck, utility vehicle, or tractor; take as many vehicles as needed to get to a field safely**.
- If within a building, only one or two people should work in shared spaces, at the same time.
- When possible, field staff should be **“permanently” assigned to specific work spaces, fields, streams, trucks, tractors, utility vehicles, sprayers**, etc. The goal is to minimize direct contact between staff or contact with materials or surfaces by more than one person. Space must be clearly marked to identify the assigned user. If you are unsure, check with the field supervisor before proceeding.

- **Use only your assigned space or vehicle and sanitize before use.** Communicate with staff prior to any exceptions.
- Use **good hand washing procedures** even when you are the only assigned user.
- Notify the group when you start working and when you leave. **Make sure at least one person knows when and where you are working and can check on you.**
- **All staff will wash hands when they arrive daily, at each break, and when they leave at the end of the shift.** Avoid touching your eyes, nose, and mouth with unwashed hands. Wash your hands with soap and water for at least 20 seconds especially after you have been in a public place, or after blowing your nose, coughing, or sneezing. If soap and water are not readily available, use a hand sanitizer that contains at least 60 percent alcohol. Cover all surfaces of your hands and rub them together until they feel dry.
- **Daily disinfecting** is recommended for commonly touched surfaces, for example, door handles, toilet handles, tools, steering wheels and hand controls of vehicles/tractors, etc. (including farm equipment), and keyboards. A daily checklist is recommended. Treat all common spaces and items as if they are contaminated.

Disinfect surfaces following best practices (70% alcohol or other approved disinfectants; be aware of contact time). Wipe surface with disinfecting wipe or spray with disinfectant and wipe with a paper towel. Allow surface to air dry for 10 minutes.

Wash hands immediately after disinfecting surfaces and after any potential exposure.

- All research teams should supplement typical janitorial cleaning with **additional sanitation** of work spaces and equipment.
- **Material quarantine:** If possible, quarantine all material, samples, and deliveries from outside sources for at least 4 days. (If refrigeration is required, treat material as contaminated and move to cold storage for quarantine period).

Field/Farm Equipment and Supplies

- All necessary field equipment (e.g., planting apron, planter, sharpies, staplers, scissors, boxes of staples, etc.) will be assigned to specific individuals and labeled with that user's name for the duration of the field season.

No sharing of equipment or supplies will be permitted once they are distributed to individuals.

When not being used, equipment and supplies will be stored in a user's personal vehicle or personal storage bin/tote.

- Personnel should minimize interactions with others and the potential for cross-contamination at supply depots.

For example, personnel should not visit the central depot at the same time.

Each researcher will be assigned a personal tote with clasp-on lid that can be left in the field or personal vehicle.

Each tote will be labeled with the name of the person to which it is assigned.

Each person is responsible for stocking their tote as needed from a lab's central supply depot.

The central depot for each lab will be organized in such a way as to minimize opportunities for cross-contamination.

If gloves are available they should be used when drawing supplies from the central depot.

If gloves are not available, personnel will wash or sanitize their hands after collecting supplies from the central depot.

- Material quarantine: If possible, quarantine all newly acquired supplies for at least 4 days.
- Each person will be assigned their equipment/space to operate and will maintain a minimum distance of 6 ft from other individuals during planting.

Often it will be possible to maintain much larger distances (e.g., by having personnel assigned to alternating parts of a field or farm).

- While distributing materials to coworkers in the field/farm, efforts will be employed to minimize opportunities for cross-contamination, e.g. wearing of gloves when handling items.
- Some field/farm experiments require the use of machinery. When possible, a single person should operate the equipment.

If two individuals are needed, practice physical distancing.

The only exception would be if two individuals live together.

If physical distancing is not possible, pieces of plexiglass shielding will be installed between individuals to provide a physical barrier.

Under this latter circumstance, personnel will wear facial PPE (personal protective equipment).

Also, any components of the equipment that will be touched by both individuals will be sanitized to avoid cross-

contamination (see cleaning guidelines above).

- While in the field/farm, researchers will maintain a minimum distance of 6 ft from other individuals. Often it will be possible to maintain much larger distances.

Given uncertainties regarding viral survival on surfaces under field conditions, whenever possible work areas will be assigned to specific individuals for days at a time, rather than having personnel enter areas worked by others during the previous several days.

Storage depots containing equipment and supplies will be organized to minimize the potential for cross-contamination and equipment, and supplies will not be shared among individuals.

Facility Maintenance and Usage

- All farm/field facility use should be coordinated by the supervisor.
- In facilities where multiple groups and PIs have ongoing operations, coordinate with other groups to ensure appropriate **social distancing**.
- **No visitors, field days, or public events allowed.**

Travel

- For personnel who must travel in-state to perform their duties, social distancing guidelines will be followed. **If 2 or more people are traveling to the same work place, drive multiple vehicles.**

The only exception to this rule is that researchers who live together may travel together in a shared vehicle.

- All travel **out-of-state is strongly discouraged** and requires prior approval. Returning from out-of-state travel will require a 14-day self-isolation period.

Communication

- Communicate via text, phone, and email to avoid direct contact.
- Check emails for changes and updates.
- Text, call, or email questions, concerns, or problems.

What to do if someone becomes ill and was at the farm?

- Notify everyone you are working with that you are ill.
- Shutdown farm/field for 1 day.
- Deep clean all work areas.
- Ill person may not come back until they have recovered.

Guidelines for Preparation of Materials for Field Studies

- Material preparation, for example for planting, is to be conducted indoors in an on-campus laboratory or potentially at home.

It is acceptable to prepare materials at home only with prior approval from supervisor provided it is safe to do so, i.e. non-hazardous. For example: Seeds that have not been treated with pesticides, do not carry an unregistered transgene and are not associated with a material transfer agreement from a non-ISU source.

Assembly of a camera for installation.
Labeling of bags for sample collection.

- If working in a laboratory, ideally each person will be assigned a dedicated work station and their own stock of supplies.

This work station should be labeled with the users' name. Work stations will be carefully sanitized prior to commencing work. Each work station should be a minimum of 6 ft from any other station. If it is necessary to share a laboratory room with others, set stations up on different laboratory benches when possible.

If that is not possible, set up stations diagonally across a lab bench from each other rather than directly across from each other.

Field/Farm Data Collection

- A minimum of 6 ft will be maintained between individuals while collecting data.
- If one person is measuring something, e.g. plant height, and another person is recording data, the two individuals must still be separated by a minimum of 6 ft.
- Some data collection projects involve the deployment and use of sensors, lasers, cameras, etc. to continuously collect data, e.g. cameras to video plant growth. In all cases, the installation and operation of these devices will be conducted in such a way as to maintain 6 ft of separation between individuals and processes will be conducted in a manner designed to minimize the possibility of cross-contamination (see cleaning guidelines above).

Laboratory Associated Activities

- Some field-based projects may require limited laboratory access, e.g., for the stabilization of collected samples prior to long-term storage or the genotyping of individuals to determine appropriate genetic crossing strategies.
- In such cases, appropriate safety measures will be implemented (see guidelines above).

Additional advice is available here: [COVID-19 and Research web page](#) in the *Social Distancing and Mitigating the Risk of Transmission While Conducting Your Research* section.

Conclusion

These protocols represented the best information available in March 2020. They were generally followed for the 2020 growing and harvest season at ISU Research Farms with some adjustments as more information became available. The 2020 field research season occurred with minimal COVID incidence or disruption on ISU Research Farms.