



....Promoting a harmonized, risk-based systems approach to nursery and greenhouse certification

SANC Guidance Document for a Systems Approach to Nursery Certification

The purpose of the SANC Guidance Document is to provide industry and state regulatory agencies with an overview of the Systems Approach to Nursery Certification (SANC). The SANC Guidance Document is based on the *State Level Model Standard: Systems Approach to Nursery Certification (SANC Standards)* and is designed to provide information on requirements for participation in the SANC program. The SANC Guidance Document will include an overview of SANC, steps for participating and general requirements (facility requirements, training, risk assessment, pest management plan, recordkeeping and audits).

I. Overview

The Systems Approach to Nursery Certification (SANC) is a voluntary, audit-based certification program designed to reduce pest risks associated with the movement of nursery stock. Nurseries and greenhouses participating in the SANC program conduct a risk assessment to identify critical control points (CCP) and best management practices (BMP) to mitigate pests and prevent the movement of pests in their stock. Nurseries and greenhouses participating in the SANC program will be eligible to ship products without end point or annual inspections by their state regulatory agencies.

In order to implement an audit-based system, participating nursery/greenhouse operations must meet certain requirements in order for the systems approach strategy to meet the goals of:

1. Maintaining health and quality of end product,
2. Reducing the spread of plant diseases and pests,
3. Reducing incidents of quarantine violations,
4. Reducing industry costs associated with regulatory actions (stop sales, plant destruction) and pesticide applications, and
5. Reallocation of resources where needed.

The SANC Program has established standards that must be met by the nursery or greenhouse operation prior to their final certification. Since each production facility is unique, SANC can be tailored to each nursery/greenhouse operation. At a minimum, a systems approach for the certification of nursery stock requires the nursery/greenhouse operation to: (1) have adequate facilities and personnel to implement all SANC requirements, (2), provide training for employees to ensure compliance with requirements of a

systems approach, (3) implement a pest management plan which is based on the hazards, CCPs and Best Management Practices (BMPs) identified during the risk assessment, (4) keep accurate records and control of all documents required for participation in SANC and (5) conduct audits at regular intervals and implement improvements, when necessary, to ensure continued compliance with SANC requirements.

II. STEPS TO BECOMING SANC CERTIFIED

Nursery/greenhouse operations desiring to participate in SANC must complete the following steps:

- Step 1 – Apply to certifying authority for participation in SANC. Certifying authority will review application and approve or deny based on current regulatory standing. Approval in this step by the certifying authority indicates the facility can begin the process for SANC certification; the facility must complete all steps below in order to become certified under the SANC program. (SANC Standards, Section 2.0.a)
- Step 2 – Preliminary meeting between facility and certifying official/inspector to provide facility management with an overview of SANC and SANC Standards. Meeting should include review of SANC Guidance Document, overview of risk assessment, Facility SANC Manual, audits, BMP Checklist, and SANC timelines. (SANC Standards, Section 2.0.b)
- Step 3 – Conduct **Risk Assessment** - Facility will conduct a risk assessment to identify hazards, CCPs and applicable BMPs (see Pest Management Plan, page 4). The risk assessment is used to develop the facility's Pest Management Plan, which is an integral part of the Facility SANC Manual. It is recommended that the facility conduct the risk assessment with representative (inspector) from the certifying authority, however participation in the risk assessment by the certifying authority will be decided by the facility and participation will be at the request of the facility. (SANC Standards, Section 2.0.c)
- Step 4 – Develop **Facility SANC Manual** - Grower completes Facility SANC Manual which must include a description of the facility, description of the organizational structure of the facility and responsibilities of key staff related to SANC. Facility SANC Manual must include procedures to meet audit, scouting, training, recordkeeping requirements and the Pest Management Plan, which is based on results of risk assessment. The Facility SANC Manual must be reviewed and approved by certifying authority, therefore it is recommended that the facility include the certifying authority when conducting the risk assessment and developing the Facility SANC Manual. If the Facility SANC Manual is not approved, it must be revised to meet SANC Standards, thus delaying SANC certification for facility. (SANC Standards, Section 2.0.c) Facilities which have documentation that is equivalent to the Facility SANC Manual may use these documents as the SANC Program; the certifying authority will determine equivalence.
- Step 5 – Conduct **Audits** –Certifying authority will conduct audits to ensure compliance with all requirements of SANC program. Audit can include, but is not limited to, inspection of facilities, records, documents (Facility SANC Manual), plant material and staff interviews. For the first year

of a facility's SANC enrollment, at least one systems audit and at two surveillance audits will be conducted.

- Step 6 – Implement **SANC Agreement** - The SANC Agreement is signed indicating grower's willingness to accept and comply with US SANC Standards and participate in SANC program. (SANC Standards, Section 2.0.e). Upon execution of SANC Agreement, the certifying authority will issue **SANC Certification** to facility.

III. GENERAL REQUIREMENTS

Participating facilities must document and implement procedures which ensure (1) certified plant material is free from quarantine pests and has all non-quarantine plant pests under effective control; (2) licensing and certification requirements of the state of origin and the plant importation requirements of all receiving states are met; (3) plants have been grown in a management system that minimizes plant pest risk; and (4) the integrity of the SANC Program is preserved. (SANC Standards, Section 3.0).

The facility must document the procedures, processes and systems that are used to ensure compliance with the SANC program and to reduce the risks associated with plant pest introduction or spread into or within the facility. To become SANC certified, the facility must address the following areas:

- A. Facility Requirements
- B. Training
- C. Pest Management Plan
- D. Recordkeeping
- E. Audits

A. FACILITY REQUIREMENTS

The organizational structure of the facility and responsibilities of key staff related to the SANC program must be maintained and documented. The Facility SANC Manual should include the position/title of staff, to whom they report and their SANC responsibilities. (SANC Standards, Section 3.1.1). The Facility SANC Manual must include a description of the place of production; this should include a map of production areas and identification of areas included in the pest management plan (Example, location of cull piles, irrigation ponds, quarantine areas, etc). Map can be computer generated or hand drawn sketches. Documentation of adherence to these requirements must be included in the Facility SANC Manual, or equivalent.

The Facility SANC Manual (or equivalent documentation) must include a description of the organizational structure of the facility, responsibilities of staff related to SANC and description of physical property. In addition, the Facility SANC Manual should include a map of production areas and any area included in the Pest Management Plan.

B. TRAINING

Training must be provided to management and employees on a regular basis so they understand their roles and responsibilities in SANC. Training should include all elements of both the systems approach protocol and the specific systems approach requirements established in Facility SANC Manual. (SANC Standard, Section 3.1.2)

The Facility SANC Manual must include procedures to ensure:

1. Management and staff have received training on their roles and responsibilities associated with participation in SANC
2. Employees receive orientation training on a general understanding of SANC
3. Staff members responsible for conducting pest management or eradication activities have the required expertise or have received adequate training to perform these duties

Policy and procedures for complying with record keeping requirements must be included in Facility SANC Manual; specific training records to meet this requirement are maintained separate from Facility SANC Manual and must be retained for a period of two years (SANC Standards, Section 3.4.2).

Records documenting compliance with training requirements must be maintained by participating nursery/greenhouse operations for a period of two years after the departure of an employee (SANC Standards, Section 3.4.2.d).

The SANC Facility Manual must include a the facility's policies and procedures which verify compliance with SANC training requirements.

C. PEST MANAGEMENT PLAN

The facility's Pest Management Plan (PMP) documents the strategies employed by the facility to mitigate pest risk through the use of a systems approach program. The Pest Management Plan includes scouting for and treatment of insects and diseases and implementation of applicable Best Management Practices to prevent the introduction and spread of plants pests. Systems approach programs utilize at least two independent measures to provide multiple layers of protection from the threat of plant pests (see [Framework for a Systems Approach to Nursery Certification](#)). In order to implement a successful systems approach program, the nursery/greenhouse operations must complete a risk assessment of the facility and identify BMPs to prevent the introduction and spread of plants pests; these BMPs along with scouting are the key components of the PMP.

The risk assessment will identify the areas which have the unintended potential to cause harm to plant products (hazard) and the CCPs where BMPs can be implemented to mitigate those hazards. It is recommended that the risk assessment be conducted jointly with the nursery/greenhouse management and the representative (inspector) from the certifying authority, however participation in risk assessment by the certifying authority will be decided by the facility and participation will be at the request of the facility.

The systems approach requires identification of hazards and critical control points followed by implementation of BMPs to effectively reduce the risk associated with the specific hazards. **Hazards** are defined as any area of nursery/greenhouse operations which have the potential to cause harm to the plant products by contamination or introduction of plant pests. A **critical control point (CCP)** is any point, step or procedure at which controls can be applied and the hazard prevented, eliminated or reduced to an acceptable level. **Best management practices (BMPs)** are those measures which are implemented at a CCP to prevent, eliminate or reduce the risk associated with the specific hazard.

Example: If irrigation water is considered a risk for spreading plant pathogens, then water meets the definition of a hazard. If the water source is an irrigation pond, the CCP for the water hazard could be the pond since this is the point at which controls could be established to reduce the risk associated with irrigation water. The measures (BMP) to address this hazard could include regular monitoring/testing for the presence of pathogens in the pond water or implementation of a routine treatment schedule.

Researchers, industry and the National Plant Board have collaborated in the development of a set of general BMPs to support this process (See [SANC CCP CHECKLIST and BMP Companion](#)). There may be other BMPs which are more appropriate for the individual nursery/greenhouse operation and will better facilitate management of identified hazards. The nursery/greenhouse management will identify the BMPs necessary for each CCP for incorporation into the Facility SANC Manual.

Risk Assessment

Conducting a risk assessment is a vital component of a systems approach and requires identification of hazards and the associated critical control points. The common CCPs for nursery and greenhouse operations include, but are not limited to the following:

- 1. Inputs - Plants:** Plant pests can be introduced into a nursery/greenhouse operation through inputs such as seeds, tissue culture, bareroot and container stock, etc. Preventing the introduction of infected plant material is the first line of defense for introduction of plant pests into the nursery/greenhouse operation. Proper management of these inputs minimizes risk and can prevent pest introductions.
- 2. Plants - Propagation:** Plant propagation practices can result in the spread of plant pests quickly throughout new nursery stock. Inputs such as cuttings, media, containers and the tools

used during plant propagation can be carriers for pathogens. Management of the propagation process can mitigate the risks associated with plant propagation.

3. Media and Containers: Used containers can be a source of plant pathogens and steps should be taken to prevent these containers from spreading disease to uninfected stock. Potting media should be handled and stored in a manner that will prevent media from becoming infected with plant pathogens.

4. Site: Weeds, debris, and native soil can harbor pests and should be excluded from production areas. Layout of the site should be designed to improve water drainage and prevent contamination of production areas.

5. Shipping: Trucks, pallets and loading areas can be contaminated with plant pests. Good sanitation practices, inspection of trucks, pallets, crates and disinfection of vehicles and loading areas can prevent the movement of plant pests.

6. Water: Proper water management can prevent the spread of plant pathogens and resulting diseases. Irrigation water should be free of pathogens in order to reduce the risk of spread of plant diseases associated with various water sources. Water which is from an irrigation pond may contain pathogens as runoff from production areas is likely to drain into the pond thus spreading pathogens from infected plants. Well water or water from a municipal system will likely have a lower risk of containing pathogens than irrigation water. In addition, the type of irrigation system used by the nursery and timing of irrigation play an important role in the spread of disease as overhead irrigation increases the chance of splash, ponding, leaf wetness, etc. Site maintenance of the nursery is important in preventing ponding and eliminating areas with poor drainage.

7. Production Practices (Greenhouse, Container, Field): Routine practices and procedures employed by nursery and greenhouse operations can inadvertently spread plant pests. Establishing procedures which incorporate applicable best management practices (Example: elimination of standing water, sanitization of used containers, segregation of incoming shipments, etc.) can reduce the introduction and/or spread of plant pests.

8. Production Practices - Equipment: Plant pathogens can be inadvertently transmitted throughout an entire nursery/greenhouse operation through exposure to contaminated plant benches/tables, equipment and tools. Implementation of proper and routine sanitization practices can prevent the spread of pathogens.

9. Sanitation Disposal: Plants or plant debris from infected nursery stock is a source of plant pathogens and should be removed in order to eliminate exposure to healthy stock. Cull piles and debris should be placed in isolated areas to prevent contamination from water runoff or workers.

The Facility SANC Manual should include the BMPs which are implemented to mitigate identified hazards.

Scouting

The facility's pest management plan must include provisions to scout for, document and manage pests within the facility and the reporting of regulated pests to certifying authority. (SANC Standards, 3.2)

Scouting which is conducted on a regular basis provides for the early detection of plant pests along with nutrient and water abnormalities which in turn aids in preventing the establishment and spread of plant pests and reduces time and costs associated with controlling such pests. Current regulatory inspections are typically conducted once during the growing season and/or at the time of shipment, thus providing the inspector with only a "snapshot in time" of pest conditions in the nursery. Scouting conducted at regular intervals by nursery/greenhouse employees ensures stock is monitored throughout the growing season and allows staff to focus inspections during those times when pests/pathogens are most prevalent.

Scouting also serves a critical role in the control of plant pests and associated costs. Routine scouting enables staff to treat at the onset of an infestation rather than after the pest has become established. Early detection and early treatment will likely result in reduced treatment costs and increased treatment success (i.e., control, eradication) since the infestation/infection will be detected when it is smaller and easier to manage.

Successful scouting and pest management requires adequate training of staff to recognize plant pests and diseases and identify treatment recommendations (SANC Standard, Section 2.1.2.e).

Documentation of scouting through the use of established recordkeeping procedures verifies that scouting occurred and was conducted at appropriate times and provides a record of plant pest problems (SANC Standard, Section 3.4.2.c).

Facility SANC Manual must address scouting plans for incoming stock, all production areas, scouting stock prior to shipment and notification of certifying authority if regulated pests are detected. Scouting records must be maintained, but can be kept separate from Facility SANC Manual.

D. RECORDKEEPING

Recordkeeping is essential to document that the facility is adhering to SANC Standards and following procedures established in Facility SANC Manual. In addition, recordkeeping provides essential trace-back and trace-forward documentation. Actual recordkeeping requirements will vary depending on the hazards, CCPs and BMPs identified, but at a minimum, recordkeeping will include scouting/treatment activities, training records and trace-back and trace-forward records.

The Facility SANC Manual should include:

1. Name of person responsible for development and maintenance of record management and retention program
2. Practices and procedures that ensure compliance with SANC Standards (SANC Standards, 3.4).
Specific requirements include applicable practices and procedures to address:
 - a. Components of Pest Management Plan - scouting, sampling/testing and treatments (SANC Standards, Section 3.4.2.c)
 - b. Product traceability (SANC Standards, Section 3.4.2.a)
 - c. Employee training (SANC Standards, Section 3.4.2.d)
 - d. Internal audits (SANC Standards, Section 3.4.2.b)
 - e. Notification of regulatory agencies if quarantined pests are detected (SANC Standards, Section 3.2)
 - f. Notification of non-conformance
 - g. Changes to SANC Production Manual
3. Records that verify compliance SANC Standards. Specific recordkeeping requirements include applicable:
 - a. Pest Management Plan – records of scouting, sampling/testing and treatment
 - b. Traceability records for incoming and outgoing plant material
 - c. Training records
 - d. Audit records
4. Compliance agreements to ensure pest and commodity specific regulatory requirements are met

Note: Records (in #3 above) are typically kept separate from and not included as part of the Facility SANC Manual.

The Facility SANC Manual should include procedures for complying with SANC record keeping requirements. Procedures should identify the records which are maintained, person responsible for records and location of applicable records.

E. AUDITS

Audit of the facility must be conducted on a regular basis by both the facility (internal audit) and the certifying authority (external audit). Both internal and external audits should include a systems audit and a surveillance audit.

The systems audit is an examination of the organizational structure, processes and resources used in implementing SANC. The objective of a systems audit is to determine if the facility is complying with the procedures and processes identified in the Facility SANC Manual.

The surveillance audit involves monitoring the facility and analysis of the records to ensure that the plant material and records conform to the SANC Standards and Facility SANC Manual.

It is the responsibility of the facility to conduct internal audits and document the occurrence and results of audits.

External audits will be conducted by the certifying authority; external systems audits will be conducted at least one time per year and external surveillance audits will be conducted at least two times per year. Frequency of audits in subsequent years will be determined by the certifying authority and may be decreased or increased based on volume and destinations of shipments, history of compliance at the facility and other risk factors.

Audits serve to identify and correct non-compliance. Non-compliance will be classified as (1) Critical Non-Compliance, (2) Major Non-Compliance and (3) Minor Non-Compliance. (SANC Standards, Section 5.1).

Critical Non-Compliance is any single finding which reveals that the integrity of the program, the production facility or plant product is in jeopardy. A critical non-compliance would result in immediate suspension from the SANC program.

Major Non-Compliance is any isolated incident of non-compliance, which has no direct impact on the integrity of the SANC-certified product provided corrective actions are completed within a specified timeframe. If the facility fails to carry out the required corrective actions within the specified time period, the facility will be suspended from the SANC program.

Minor Non-Compliance is an isolated incident that does not immediately and/or significantly affect the integrity of the program or the plants produced, but require corrective action.

The Facility SANC Manual should include procedures for complying with SANC audit requirements and must address frequency of systems and surveillance audits, person responsible for conducting audits and procedures for reporting non-compliance.