

**Circular 11**  
**Sec.VII. Miscellaneous Regulations**  
**9. Rules and Standards For Certification of Certified Blackberry Plants**

The production of blackberry nursery stock is an important industry in Arkansas. Diseases such as rust, anthracnose, crown gall and viruses, as well as pests such as cane borers and nematodes pose a threat to the blackberry nursery industry. To prevent the spread of these problems by nursery stock, the following certification regulations shall apply to the production and sale of certified blackberry nursery stock in Arkansas.

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**I. Definitions**

**Board** means the Arkansas State Plant Board.

**Blackberry** means cultivated *Rubus* species and related plants that are considered blackberry botanically.

**Cane cutting** is a cane section of two or more nodes or buds (length 4-6 inches) to be transplanted to produce a plant.

**Crown** is the persistent (perennial) base of the plant; the junction between canes and roots (some varieties have buds that arise primarily from the crown).

**Director** means the director of the State Plant Board or his duly appointed representative.

**Hardwood cutting** is taken from a mature woody stem for the purpose of propagation.

**Indicator plant** means any herbaceous or woody plant used to index or determine virus infection.

**Indexing** is a procedure to determine virus or other pathogen infection by inoculation from the plant to be tested to an indicator plant (grafted onto plant to be tested) or by any other approved method.

**Mericlones** are plants clonally propagated from a single meristem tip.

**Micropropagation** is plant multiplication *in vitro*. Blackberry is propagated in tissue culture by aseptic transfer of meristem tip cultures to produce Nuclear stocks.

**Nodal cutting** is a cane cutting with a single node to produce a plant.

**One-year-old plants** means well rooted plants that have developed during one growing season.

**Primocane** (succulent plants) is the current season's growth that develops from root or basal crown buds.

**Root cuttings** is a root section with one or more buds.

**Softwood** cutting is taken from a green, immature, actively growing stem of a woody plant during spring or early summer for the purpose of propagation.

**Succulent plant** means a small, actively growing plant that is developing from root buds, not having passed through a dormant period.

**Virus infected (affected)** means presence of a virus (es) or yellows disease agent in a plant or plant part. The word "virus" shall be used hereafter to include yellows disease.

**Virus-like** means a disorder of genetic or non transmissible origin, or a graft-transmissible disorder resembling a virus disease, including but not limited to diseases caused by viroids and phytoplasmas

## II. Certifying agency issuance of certificate

- A. The issuance of a certified state of Arkansas plant tag or stamp under this chapter affirms solely that the tagged or stamped blackberry stock has been subjected to certification standards and procedures by the department. The Board disclaims all expressed or implied warranties, including without limitation, implied warranties of merchantability and fitness for particular purpose, regarding all plants, and plant materials under this chapter.
- B. The Board is not responsible for disease, genetic disorder, off-type, failure of performance, mislabeling, or otherwise, in connection with this chapter. No grower, nursery dealer, government official, or other person is authorized to give any expressed or implied warranty, or to accept financial responsibility on behalf of the Plant Board regarding this chapter.
- C. Participation in the blackberry planting stock certification program is voluntary.

**III. Blackberry certification standards** The following specific rules constitute the requirements and standards for classes and sources of blackberry certified stock:

**Nuclear stock** shall be derived from plants that have been micropropagated, indexed, apparently free from other pests, and evaluated in field tests for trueness-to-variety. Nuclear stock may exist as *in-vitro* tissue culture plantlets or potted plants in a screened greenhouse. Sources of plants grown as nuclear stock must be approved by the State Plant Board.

**Foundation stock** is produced from Nuclear stock and grown in a greenhouse or screenhouse to exclude insects.

**Registered stock** is produced from Foundation stock in greenhouse, screenhouse, or field.

**Certified stock** is produced from Registered stock in greenhouse, screenhouse, or field.

**IV. Requirements for the production of foundation, registered and certified blackberry stock**

**A. Facilities** (greenhouse, screenhouse, water, equipment, etc.) for plant production must be approved by the Board before Foundation stock is procured by the producer.

**B. Foundation stock**

1. Foundation plants may be maintained indefinitely if grown in an insect-proof facility (greenhouse), in sanitized substrate, and indexed every three years by the United States Department of Agriculture or other personnel approved by the Board.
2. Growers may use micro-propagation techniques to multiply foundation plants prior to planting in a foundation greenhouse provided the micro-propagated plants are isolated from other non-indexed blackberry plants, and the micro-propagation facilities are approved by the Board.
3. In greenhouse or screenhouse, Foundation plants shall be produced in separate sanitized containers with labeling of cultivar name and lot number (if applicable).
4. Non-certified *Rubus* species must not exist within 152 meters (500 feet) of the perimeter of the greenhouse. Weeds that host disease of major concern must be controlled within 152 meters (500 feet) of the perimeter of the greenhouse. Insects that vector diseases of major concern should be controlled in isolation areas.
5. Non-certified *Rubus* species must not exist within the greenhouse or screenhouse.
6. Blossoms shall be removed before the blossoms open.

**C. Registered stock**

1. Registered plants may be maintained indefinitely if grown in an insect-proof facility (greenhouse), in sanitized substrate, and indexed every three years.
2. In greenhouse or screenhouse, Registered plants shall be produced in separate sanitized containers with labeling of cultivar name and lot number (if applicable).
3. Non-certified *Rubus* species must not exist within 152 meters (500 feet) of the perimeter of the greenhouse. Weeds that host disease of major concern must be controlled within 152 meters (500 feet) of the perimeter of the greenhouse. Insects that vector diseases of major concern should be controlled in isolation area.
4. Non-certified *Rubus* species must not exist within the greenhouse or screenhouse.

5. For field production, soil treatment is required with an approved method (ex. solid soil fumigation with methyl bromide + chloropicrin). Weeds that host diseases of major concern will be controlled. Insects that vector diseases of major concern should be controlled in isolation area.
6. Non-certified *Rubus* species must not exist within 152 meters (500 feet) of the perimeter of the field used to produce certified blackberry stock. Each lot and/or different cultivars are labeled and separated by a distance of 4.25 meters (14 feet) or a physical barrier that prevents intermingling of roots.
7. Field produced Registered stock shall not be harvested beyond one year.
8. Blossoms shall be removed before the blossoms open.

### **C. Certified stock**

1. Certified plants may be maintained indefinitely if grown in an insect-proof facility (greenhouse), in sanitized substrate, and indexed every three years.
2. In greenhouse or screenhouse, Certified plants shall be produced in separate sanitized containers with labeling of cultivar name and lot number (if applicable).
3. Non-certified *Rubus* species must not exist within 152 meters (500 feet) of the perimeter of the greenhouse. Weeds that host disease of major concern must be controlled within 152 meters (500 feet) of the perimeter of the greenhouse. Insects that vector diseases of major concern should be controlled in isolation area.
4. Non-certified *Rubus* species must not exist within the greenhouse or screenhouse.
5. For field production, soil treatment is required with an approved method (ex. solid soil fumigation with methyl bromide + chloropicrin). Weeds that host diseases of major concern will be controlled. Insects that vector diseases of major concern should be controlled in isolation area.
6. Non-certified *Rubus* species must not exist within 152 meters (500 feet) of the perimeter of the field used to produce certified blackberry stock. Each lot and/or different cultivars are labeled and separated by a distance of 4.25 meters (14 feet) or a physical barrier that prevents intermingling of roots.
7. Field-produced Certified stock shall not be harvested beyond one year.
8. Blossoms shall be removed before blossoms open.

**D.** Documentation of soil treatments and use of plant protectants shall be made available to the Board.

**E.** A map identifying cultivars and lots must be provided to the Board.

## **V. Inspections**

### **A. Greenhouse/Screenhouse**

1. Grower will regularly inspect plants. All plants that are symptomatic of disease will be removed and destroyed. The grower will keep a logbook recording cultivar and number of destroyed plants and make it available to Board inspectors.
2. Grower will inspect in and around the greenhouse perimeters to ensure isolation standards are being met.
3. Board inspectors must inspect and approve any greenhouse that has not been used for successful production of indexed blackberry plants.
4. During the production of certified plants, Board inspectors will do at least one inspection during the growing period when plants are likely to express symptoms of virus infection,

crown and cane gall infections and other disorders. The Board may conduct additional inspections if deemed necessary.

5. All plants that are of off-types, crown gall infected, virus infected, or exhibiting virus-like symptoms during inspections will be flagged by Board inspectors.
6. Grower will remove all flagged plants immediately after inspection by the Board inspector. Effective roguing techniques must include removing the undesirable plant and all of its roots.

**B. Field**

1. The grower should inspect fields regularly during the growing season and rogue all plants with symptoms of disease, etc. The Board should be informed if any problems are found.
2. The Board inspector will perform three inspections of fields for certified plant production; 1) first inspection during April, 2) second inspection during July, 3) third inspection during October. Additional inspections may be performed if deemed necessary.
3. All plants that are of off-types, crown gall infected, virus infected, or exhibiting virus-like symptoms during inspections will be flagged by Board inspectors.
4. Grower will remove all flagged plants immediately after inspection by the Board inspector. Effective roguing techniques must include removing the undesirable plant and all of its roots as well as all the plants and plant parts within ten feet of the undesirable plant.

**VI. Inspection standards**

**A. Greenhouse, General Requirements**

1. Unit of certification shall be the entire greenhouse.
2. Isolation: Non-certified *Rubus* species must not exist within the greenhouse. Non-certified *Rubus* species must not exist within 152 meters (500 feet) of the perimeter of the greenhouse. Weeds that host disease of major concern must be controlled within 152 meters (500 ft) of the perimeter of the greenhouse. Insects that vector diseases of major concern should be controlled in isolation area.

**B. Field, General Requirements**

1. Unit of certification shall be the field or a portion of field. Any portion of the field that does not meet inspection standards may be delimited if it will not jeopardize the remainder of the field.
2. Isolation: Non-certified *Rubus* species must not exist within 152 meters (500 feet) of the certified plants. Weeds that host diseases of major concern must be controlled within 152 meters (500 feet) of the certified plants. Insects that vector diseases of major concern should be controlled in isolation area.

**C. Specific Greenhouse and Field Tolerance, maximum % of factor**

Factor	Foundation Stock	Registered Stock	Certified Stock
Anthracnose	0	2.0	5.0
Crown and cane gall	0	0.1	1.0
Nematodes	0	0.05	0.1

<b>Rust, systemic</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Virus diseases</b>	<b>0</b>	<b>0.05</b>	<b>0.5</b>
<b>Other diseases</b>	<b>0</b>	<b>0.2</b>	<b>0.5</b>
<b>Varietal mixture</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Root, cane or crown inhabiting insects</b>	<b>0</b>	<b>0.05</b>	<b>0.1</b>

## **VII. General requirements for plants**

- A. Growers may sell Foundation, Registered or Certified stock as certified plants.
- B. An official certificate will accompany each sale of certified Blackberry plants or stock. This certificate will list the viruses indexed and other details. Each container/plant will be labeled with variety and certification information.
- C. A complete record of the number of certified Blackberry plant/stock sales will be maintained and made available to the official certifying agency. The record will include (a) class, (b) cultivar, (c) date of shipment, (d) number of plants or stock shipped.
- D. General Inspection Standards for Plants:
  1. Apparently free of biotic and abiotic diseases, insects, and other pests.
  2. True-to-variety characteristics.
  3. Good leaf color and plant size.
  4. Satisfactory plant size to meet the expectations of the customer.
  5. Plants will not be shipped with non-certified plants.

## **VIII. Blackberry certification fees**

- A. Blackberry certification application fee. Applicant will be required to obtain a valid Nurseryman's license and pay the required fees as prescribed for the Nurseryman category. The blackberry certification application and fee is in addition to the Nurseryman fee. The certification fee is assessed for the sole purpose of defraying expenses incurred in the additional inspection and certification requirements protocol. The applicant must furnish all information requested on the Application for Inspection Form and must allow the inspector to take samples of plants or plant parts from any certified planting for inspection and testing purposes. A separate application is required and a \$50.00 fee shall be paid for each cultivar/variety unit entered for certification. Each lot or field of each cultivator shall be listed separately on the application. Application for certification inspection for the following year must be filed with the Arkansas State Plant Board, Post Office Box 1069, Little Rock, Arkansas 72203 by **Oct.31**, accompanied by the appropriate fees.
- B. A grower desiring to produce certified blackberry plants as herein provided shall establish with the Board facts evidencing sufficient experience to produce healthy, high quality stock.
- C. The Board will remove any applicant failing to renew certification by the designated due date of the certification program. Failure to pay fees by the designated due date shall also result in removing the applicant from the certification program.
- D. The Board will not accept applications from growers owing the Board for previous services.

## **IX. Certified planting stock pre-marketing, identification and grade**

- A. All blackberry planting stock meeting the requirements of this chapter can be identified by the State Plant Board tag or stamp issued under by the Board.
- B. All containers must be new and marked with the name and address of the grower, class of certified stock, variety and lot number.
- C. The quality and grading of the stock is the responsibility of the grower.

**X. Blackberry tagging or stamping and plant inspection**

- A. “Certified” stock shall be identified with the state of Arkansas official certified blackberry plant tag or stamp under the supervision of the Board after plants have passed inspection.
- B. Only plants meeting Arkansas standards for blackberry plants shall be tagged or stamped.
- C. All containers shall be marked with the name and address of the grower, grade or class of stock, and variety.

**XI. Application of regulations** This certification program is strictly voluntary and these regulations shall apply in addition to and do not replace any regulations covering nursery stock now in effect as covered by Plant Board Circular 11, “Regulations on Plant Diseases and Pests”, nor do they replace or supersede any requirement of the Arkansas Plant Act of 1917, A.C.A. 2-16-201 thru 214 or the Arkansas Nursery Fraud Act of 1919, A.C.A. 2-21-101 thru 113.