Animal and Plant Health Agency

Certification scheme fruit plants
Explanatory guide to strawberries (Fragaria)
Approved Health (AH) grade

January 2025

Contents

The Approved Health (AH) grade applies to *Fragaria, Rubus,* and *Ribes* in England and Wales only. The AH grade field standards have been derived from the pest and disease standards set out for the Fruit Propagation Certification Scheme (FPCS) 'Certified' grade and the former Plant Health Propagation Scheme (PHPS) standards.

Plant material entered at AH grade will be inspected for health and vigour only, and not for trueness to type.

Any registered variety, including varieties that have been derived from virus indexed material can be entered at AH grade. This includes varieties that are registered and awaiting Distinct, Uniform and Stability (DUS) testing. Such varieties must be entered with the prefix P-DUS on the application form and can only be marketed at CAC grade (Conformitas Agraria Communitatis)

1. Applications

Applications for entry of material to be submitted to Plant Varieties and Seeds (PVS) at FPCS.admin@apha.gov.uk

2. Testing on initial entry for Approved Health

Plants must be tested prior to planting for freedom from strawberry blackspot, Xanthomonas fragariae (angular leaf spot) and Xanthomonas arboricola pv. fragariae (bacterial leaf blight) in the first year of entry.

If a stock subsequently fails certification due to Verticillium wilt in excess of the tolerance, it can enter certification the following year without additional blackspot and Xanthomonas testing.

Testing can be either completed by PHSI or the propagator following a protocol. For details see appendix1.

3. Labelling

The label must not be the colour of officially certified material under the Fruit Propagation Certification Scheme. Pink would be acceptable.

4. Soil sampling

Not required.

5. Control of diseases

Fungicide treatments that could mask symptoms of fungal diseases are not encouraged.

6. Roguing

Limited roguing is permissible after inspection with prior approval of the APHA Plant Health Inspector. Records must be kept and made available of stocks rogued, the reason for roguing and the numbers of plants removed.

7. Gapping up

Gapping up is permissible providing that the material used is eligible and prior approval from APHA Plant Health has been obtained. Growers must keep records and make them available if requested to do so.

8. Number of inspections

Approved Health will receive two inspections during the growing season.

First inspection:	June / July
Second inspection:	September

9. Validity of certificates

Harvested runners from Approved-Health crops may be described as ‘Approved’. Runners kept in cold store may be described as certified until 31 July in the year after certification. Runners not kept in cold store or subsequently potted up may be described as certified until 31 May in the year after certification.

10. Isolation distances for field and glasshouse grown material

Stocks entered must be isolated by at least the distance shown (metres).

The isolation distances for varieties of the same grade in glasshouses can be reduced at the discretion of APHA Plant Health inspector.

	Basic 1	Basic 2	Basic 3	Basic 4	Basic 5	Certified	Approved Health	CAC	Fruiting
Basic 1	3	3	3	3	3	50	400	1000	1000
Basic 2	3	3	3	3	3	50	400	1000	1000
Basic 3	3	3	3	3	3	50	400	1000	1000
Basic 4	3	3	3	3	3	50	400	500	500
Basic 5	3	3	3	3	3	3	400	500	500
Certified	50	50	50	50	3	3	10	500	500
Approved Health	400	400	400	400	400	10	3	200	200
CAC	1000	1000	1000	500	500	500	200	1	200
Fruiting	1000	1000	1000	500	500	500	200	200	0

11. Proximity to aphid proof gauze house production

When planting Approved Health material consideration must be given to the isolation distance from certified plant material grown inside aphid proof gauze houses.

Plants inside gauze house (grade)	Isolation of AH outside gauze house (m)
Pre-basic	250m
Basic 1 – 4	50m
Basic 5 or Certified	10m

12. Inspection tolerances

		FPCS 'Certified' Grade	Approved Health
Rogues		0	0.5
Insects and mites			
Chaetosiphon fragaefolii	Strawberry aphid	1.0	1.0
Phytonemus pallidus	Tarsonemid mite	0.1	0.1
Nematodes			
Aphelenchoides blastophthorus		0	0
Aphelechoides besseyi	Rice white-tip nematode	0.5	0.5
Aphelenchoides fragariae	Strawberry crimp nematode	1.0	1.0
Aphelenchoides ritzemabosi	Chrysanthemum foliar nematode	0	0
Ditylenchus dipsaci	Stem and bulb eelworm	1.0	1.0
Meloidogyne hapla	Root rot nematode	1.0	1.0
Pratylenchus vulnus	Walnut meadow nematode	1.0	1.0
Fungi			
Rhizoctonia fragariae	Strawberry black root rot	1.0	1.0
Podosphaera aphanis	Strawberry powdery mildew	1.0	1.0
Verticillium albo-atrum	Wilt	2.0	5.0
Verticillium dahlia	Wilt	2.0	5.0
Phytophthora fragariae	Red core	0	0
Phytophthora cactorum	Crown rot	0	0.5
Colletotrichum acutatum	Strawberry blackspot	0	0

Bacteria			
Candidatus Phlomobacter fragariae	Marginal chlorosis of strawberry	1.0	1.0
Xanthomonas fragariae	Angular leaf spot	0	0
Viruses			
Sadwavirus fragariae	Strawberry mottle virus	2.0	2.0
Nepovirus arabis	Arabis mosaic virus	0	0
Nepovirus rubi	Raspberry ringspot virus	0	0
Nepovirus nigranuli	Tomato black ring virus	0	0
Cytorhabdovirus fragariarugosus	Strawberry crinkle virus	0	0
Stralarivirus fragariae	Strawberry latent ringspot virus	0	0
Potexvirus fragariae	Strawberry mild yellow edge virus	0	0
Caulimovirus venafragariae	Strawberry vein banding virus	0	0
Phytoplasma diseases			
Candidatus Phytoplasma *asteris*	Aster yellow phytoplasma	1.0	1.0
Candidatus Phytoplasma *trifolii*	Strawberry multiplier disease	0.5	0.5
Candidatus Phytoplasma *solani*	Stolbur as Strawberry lethal decline	1.0	1.0
Clover phyllody Phytoplasma	Strawberry green petal phytoplasma	1.0	1.0
Phytoplasma Phytoplasma *fragariae*	Yellows diseased strawberry phytoplasma	1.0	1.0
Candidatus Phytoplasma *pruni*	X-Disease	1.0	1.0

Appendix 1

Testing Protocol for Approved Health

Xanthomonas & Strawberry Blackspot Sampling and Testing

Testing of AH stocks derived from non-certified parent material entering in to FPCS for the first time and other countries being entered into FPCS requiring Xanthomonas fragariae and Blackspot testing.

Sample Size

When sampling a variety or stock comprising less than 300 plants the samples for each of the blackspot (Colletotricum acutatum) and Xanthomonas fragariae test should consist of 300 petioles with at least one petiole taken from each plant within the variety/stock.

For stocks of less than 300 plants where the plants are also very small one sample may be submitted for both tests; however, this must be verified as acceptable with the testing laboratory and APHA Plant Health and Seeds Inspectors. In this case the sample submitted should clearly state that both tests are to be conducted on the one sample.

For larger consignments of more than 300 plants the samples for each of blackspot and Xanthomonas testing should consist of 300 petioles for each test taken from throughout the consignment to be representative of that consignment. Where stock size permits the sample for Xanthomonas testing should consist of crowns in preference to petioles.

When sampling crowns roots should be removed from the sampled plants and the remainder of the plant submitted for testing. Sampling of 300 plants per variety/stock will give a detection level of 1% or more infection at 95% confidence.

Sample Protocol

- From each plant sampled, one oldest living petiole base should be removed, discarding all but the bottom 3cm such that the sample includes the two stipules at the base of the petiole. (The upper portion of the petiole and the leaf lamina can be discarded except for small stocks consisting of small plants where only one sample is being submitted).
- A second petiole base should be similarly sampled from the base of the plant for submission for Xanthomonas testing. This may (but need not necessarily) be from the same plant as that from which the blackspot sample was taken. Where stock size permits the sample for Xanthomonas testing should consist of crowns in preference to petioles.
- Wherever possible the sampling procedure should be undertaken or overseen by an official of the statutory authorising authority, but could be by an employee of a laboratory recognised to ISO 9001 standard by UKCAS.
- Good laboratory practice and hygiene measures must be employed throughout the sampling and dispatch of the samples. Material should be sampled with a new set of disposable gloves used for each sample.
- Any equipment used in the sampling process should be disinfected between samples. New sampling bags should be used for each sample. All sample bags should be clearly labelled stating sampling date and variety. Records of sample numbers dates and varieties should be maintained by the sampler.
- For packing avoid polythene wrapping and send sample to the laboratory within 24 hours to reduce problems with growth of saprophytic organisms. Where a sample is stored prior to dispatch this should be held in a fridge at around 4ºC.

  The submitted samples should be tested using the validated EPPO protocol PM 7/25 for Glomerella acutata (Colletotrichum acutatum) and protocol PM 7/65 (1) for Xanthomonas fragariae When testing for Xanthomonas fragariae, the preference for the molecular test is for a real time PCR test to be used, rather than a conventional PCR. Stocks will be considered positive by a presumptive diagnosis for Xanthomonas fragariae if both a positive serological test (IF or ELISA) AND a positive molecular test (PCR or RT-PCR) are obtained.
- Sampled stocks should not be planted or entered in to the FPCS until the test results have been confirmed negative. There should be a negative test result for both a serological test (IF or Elisa) and a negative molecular test (PCR or Real time PCR).
- The full results and test methods used must be made available to the APHA Plant Health and Seeds Inspectors prior to inspection within the scheme.

Data Protection:
For information on how we handle personal data visit www.gov.uk and search Animal and Plant Health Agency Personal Information Charter.

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Any enquiries regarding this publication should be sent to us at

www.gov.uk/apha

APHA is an Executive Agency of the Department for Environment, Food and Rural Affairs and also works on behalf of the Scottish Government, Welsh Government and Food Standards Agency to safeguard animal and plant health for the benefit of people, the environment and the economy.