



FRESH PRODUCE STANDARDS: WATERCRESS PROTOCOL

NOVEMBER 2021



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HOW TO USE THIS GUIDE

Our standards are organised in sections. The **AIM** of each standard or group of standards is clearly explained. All of the words against each standard, including the column **'How you will be measured'**, form part of it.

Standard coding begins with a two-letter prefix which identifies the section (e.g. EC for Environmental Protection and Contamination Control). You may notice that the codes are not always consecutive – rest assured that no information is missing from this guide.

Assessors will use this code together with one to identify the enterprise to which it relates (e.g. FP for Fresh produce) to record any non-conformances on the report at the end of the assessment.

Look out for the **guidance boxes** throughout this guide – these offer useful tips to help you meet the relevant standard.

Key while all standards must be met, particular attention should be paid to these as they can have implications for your certification

Recommendation this is not a standard and a non-conformance raised will not affect your certification. However these are recommended actions to undertake to help demonstrate working to Red Tractor and industry core principles

New a completely new standard which the member must now adhere to, or a new recommendation

Revised a standard that has changed and requires the member to take some different or additional action to before

Upgraded the standard has been upgraded to a Key standard or from a Recommendation to a full standard

Appendix indicates that additional information is provided in the Appendices at the back of this manual and can also be found by visiting: redtractorassurance.org.uk

R this icon indicates that a **record** is required and suggests potential documentary evidence which could be used to show compliance

WHERE TO FIND HELP



At the end of each section this icon indicates where you can get **additional information**, should you need it.

Visit our website: redtractorassurance.org.uk for additional help.



Fresh Produce | Additional module: Watercress

Relevant where watercress is within the scope of certification. These standards cover only traditional outdoor production of watercress in gravel beds. They are based on a typical crop production process and relate to production up to the point of harvest, including the production of propagation material.

STANDARDS	HOW YOU WILL BE MEASURED	
AIM: Site management controls are in place to protect food safety		
<p>WC.1 Site Risk Assessments (RA.6) for watercress producers must consider additional, crop specific risks. Preventive actions or mitigation steps are documented where relevant NEW</p>	<p>■ WC.1.a The following risks are considered within site risk assessments (where relevant):</p> <ul style="list-style-type: none"> – the possibility of runoff of contaminated water from nearby land, roads and on-site tracks – access by animals (domestic or wild) to the production site, including with humans on rights of way – access of animals (domestic or wild) to water sources used in watercress production and associated operations – the possibility of manure storage, spreading and composting operations close to production sites – the possibility of airborne microbial contamination e.g. in aerosols from slurry spreading and dust from intensive livestock units, both of which may contain pathogens harmful to human health – the possibility of microbial contamination from organic wastes applied to nearby land eg waste/ digestate from anaerobic digesters and sewage sludge/biosolids – the possibility of the production site being flooded with water that may be contaminated, for example where rivers and streams contain upstream discharges from sewage works, septic tanks etc or where there are livestock in the catchment – human habitation close to production sites e.g. discharges from drains or access by domestic animals – public sewers and foul drains, both on-site and off-site nearby – sewage treatment facilities, both public and private, close to or on production sites (both currently and in the past) e.g. Sewage treatment works (STWs), septic tanks, package treatment plants and cess pits – hazardous waste sites close to watercress production sites (both currently and in the past) – industrial and mining sites close to watercress production sites (both currently and in the past) 	<div style="text-align: center;">R</div> <p>■ Site risk assessment/s</p>
	<p>■ WC.1.b Personnel completing Site Risk Assessment are demonstrably competent and have adequate knowledge of the business</p>	
<p>GUIDANCE <i>Since watercress is very often eaten raw, identifying risks to food safety from pathogen contamination is particularly important. When carrying out a risk assessment it is important that growers identify all the potential sources of human pathogens that may affect that site and all of the pathways by which such pathogens could enter each production site.</i></p>		

STANDARDS	HOW YOU WILL BE MEASURED	
<p>WC.2 Measures are in place to manage risks to crop from livestock and wildlife NEW</p>	<ul style="list-style-type: none"> ■ WC.2.a Effective physical barriers (e.g. suitable fencing, gates, cattle grids) at all access points adjacent to livestock areas 	
	<ul style="list-style-type: none"> ■ WC.2.b Measures to control contamination from wildlife are present that are commensurate to risk 	
<p>GUIDANCE</p> <p><i>Contamination poses a particular challenge in that the flowing water may spread any contamination which occurs through the growing crop. Contamination can occur from trafficking both onto the site and within the site, and from livestock and wildlife entering the site. The Food Standards Agency and Public Health England have encouraged the watercress industry to give particular consideration to the risks from livestock, domestic animals and wildlife (including waterfowl, amphibians, mud snails and vermin), run-off of surface water from surrounding land, and to floodwater.</i></p> <p><i>There are examples of measures to control contamination from wildlife in the Industry Guide to Good Hygiene Practice for Watercress (recognised by the FSA).</i></p>		
<p>WC.3 Measures must be in place to reduce the risk of liver fluke entering the crop NEW</p>	<ul style="list-style-type: none"> ■ WC.3.a There is demonstrable evidence of strategies to manage the risk of liver fluke, including: <ul style="list-style-type: none"> – control risk from ingress of surface water – preventative action to exclude mud snails from production beds – effective physical barriers are in place to prevent all livestock gaining access to production sites 	
<p>WC.4 Where there is a risk of leakage from foul drains contaminating the crop, drains under the grower's control must be tested annually for leaks, and immediately if a leak is suspected NEW</p>		
<p>WC.5 Where there is evidence that surface water (run-off from surrounding land or flooding from watercourses) or livestock/wildlife have entered the crop and pose a risk to food safety, follow up actions are implemented and recorded NEW</p>	<ul style="list-style-type: none"> ■ WC.5.a Record and do not harvest where there is evidence that surface water (run-off from surrounding land or flooding from watercourses) has entered the crop 	<div style="text-align: center;">R</div> <ul style="list-style-type: none"> ■ Incident records and remedial actions ■ Training programme
	<ul style="list-style-type: none"> ■ WC.5.b Staff involved in production are trained to report significant incursions into the crop by livestock and wildlife 	
	<ul style="list-style-type: none"> ■ WC.5.c Incursion into the crop by livestock or wildlife that requires remedial action including non-harvesting of crop must be recorded 	


STANDARDS	HOW YOU WILL BE MEASURED	
AIM: Water management controls are in place to protect food safety and to protect neighbouring water courses		
<p>WC.6 Additional, watercress specific controls are in place to manage water quality in production beds NEW</p>	<ul style="list-style-type: none"> ■ WC.6.a All water used in crop production and associated activities (including inhouse propagation and washing of substrate) must be sourced from boreholes, artesian wells or springs, or be potable ■ WC.6.b Water sources are protected from contamination ■ WC.6.c Water sources and distribution systems are mapped ■ WC.6.d All water entering production beds must be tested a minimum of four times a year (tests distributed across the production season) or in the case of sources which run intermittently, across the period when they are flowing ■ WC.6.e The following water testing criteria is applied: Generic E. coli <ul style="list-style-type: none"> - Target: <10 cfu/100ml - Investigate: 10-100 cfu/100ml - Unacceptable: >100 cfu/100ml Where the result is 10-100 cfu/100ml, re-test, record the result and if not returned to the target level, investigate the source of contamination and record the result of the investigation Where the result is >100 cfu/100ml, crop production using that source shall stop and water be tested for presence of Salmonella and E. coli O157 ■ WC.6.f Test results must be trended and kept for a minimum of 5 years 	<div style="text-align: center; border: 1px solid black; border-radius: 50%; width: 30px; height: 30px; margin: 0 auto; display: flex; align-items: center; justify-content: center;">R</div> <ul style="list-style-type: none"> ■ Maps of water source/distribution system ■ Water test results ■ Trending of test results ■ Records of investigations

GUIDANCE

Context: since watercress is very often eaten raw, the microbial quality of the water in which it is grown is particularly important. If the water is contaminated with microbial pathogens it can pose a direct risk to human health. Sources of water must therefore be of high microbial quality eg boreholes, artesian wells and springs. Open water sources which are vulnerable to microbial contamination e.g. rivers, ponds and reservoirs pose an unacceptable risk.

Watercress differs from land crops in that the crop is grown in water from planting to harvest (as distinct from intermittent application of water as in irrigation). Watercress therefore has its own standards for the quality of water as contained in the Industry Guide for Hygienic Crop Production which is recognised by the FSA. Where there is overlap between the generic standards and the crop's own standards, the strictest will apply.

STANDARDS	HOW YOU WILL BE MEASURED	
WC.7 The water in production beds must be flowing NEW		
WC.8 Members hold a valid Environmental Permit where required for discharge of water from watercress beds NEW	<ul style="list-style-type: none"> ■ WC.8.a A valid Environmental Permit is in place for discharge of waste water from watercress beds 	<div style="text-align: center;">R</div> <ul style="list-style-type: none"> ■ Environmental Permit
	<ul style="list-style-type: none"> ■ WC.8.b The business is compliant with any conditions of the Environmental Permit 	
<p>GUIDANCE</p> <p><i>Context: watercress farms discharge water from the beds to rivers and streams which in some cases are of high conservation status. The discharges can have serious effects on aquatic habitats and are regulated by the Environment Agency by means of environmental permitting.</i></p> <p><i>For further information, see: www.gov.uk/guidance/risk-assessments-for-your-environmental-permit</i></p>		
AIM: Suitable controls are in place for management of crop inputs to protect food safety and traceability		
WC.9 Bought-in propagation material is produced in accordance with the principles of Good Agricultural Practice REVISED	<ul style="list-style-type: none"> ■ WC.9.a Batches of bought-in propagation material are produced in accordance with 'The Industry Guide to Good Hygiene Practice for Watercress' and this is verified through a certificate or declaration from supplier 	<div style="text-align: center;">R</div> <ul style="list-style-type: none"> ■ Certificate/declaration for bought-in propagation material
<p>GUIDANCE</p> <p><i>Context: propagation material (seeds, seedlings and cuttings) is a potential source of human pathogens and hence a potential route for contamination of the crop to occur. Isolating bacteria from contaminated seeds has proved extremely challenging with available technologies and microbial testing of seeds cannot be relied on to ensure seeds are free of contamination.</i></p>		
WC.10 Seed must be stored in such a way as to prevent contamination by insects and other animals. Seed must be inspected before use and any damaged seed must not be used NEW	<ul style="list-style-type: none"> ■ WC.10.a Storage facilities must be kept in good repair and be checked regularly for infestation 	<div style="text-align: center;">R</div> <ul style="list-style-type: none"> ■ Records of seed inspection
WC.11 Traceability systems allow for retrospective traceability of all seeds, seedlings and cuttings REVISED	<ul style="list-style-type: none"> ■ WC.11.a Documented traceability records effectively identify all seed, seedling and cutting by batch 	<div style="text-align: center;">R</div> <ul style="list-style-type: none"> ■ Traceability records
	<ul style="list-style-type: none"> ■ WC.11.b Batch information recorded effectively links all seed, seedling and cutting back to source 	
<p>GUIDANCE</p> <p><i>Context: propagation material (seeds, seedlings and cuttings) is a potential source of human pathogens and hence a potential route for contamination of the crop to occur. Isolating bacteria from contaminated seeds has proved extremely challenging with available technologies and microbial testing of seeds cannot be relied on to ensure seeds are free of contamination. Batch identification and record of original source of each batch of propagation material is required, whether bought in or produced within the business.</i></p>		

STANDARDS	HOW YOU WILL BE MEASURED	
<p>WC.12 The source of each batch of substrate material must be known and recorded. Any treatments must be recorded NEW</p>		<p>R</p> <ul style="list-style-type: none"> ■ Substrate traceability records ■ Records of substrate treatment
<p>WC.13 Each batch of substrate material used for propagation must be verified as free from pathogens NEW</p>	<p>■ WC.13.a Each batch of substrate is tested against the following parameters (either inhouse or by supplier):</p> <ul style="list-style-type: none"> – Generic E. coli: <100 cfu/g – Salmonella: absence 	<p>R</p> <ul style="list-style-type: none"> ■ Substrate test results of certificate of conformity
<p>GUIDANCE <i>Context: the substrate used for propagation or for production beds can be a potential pathway for human pathogens to enter and contaminate the crop. Peat, for example, can have variable levels of E. coli present. Substrate for production beds (gravel) may contain soil and plant debris, particularly where recycled material from within the business is used .</i></p>		
<p>WC.14 Bed substrate must be stored in a manner that prevents contamination NEW</p>		
<p>GUIDANCE <i>Refer to Industry Guide to Good Hygiene Practice: Watercress for further information.</i></p>		
<p>WC.15 Fertilisers containing organic materials must have undergone suitable treatment and meet required criteria REVISED</p>	<p>■ WC.15.a Fertiliser is tested against the following parameters (either inhouse or by supplier):</p> <ul style="list-style-type: none"> – Target <100 cfu/g generic E. coli – Absence of E. coli 0157, Salmonella and Listeria monocytogenes 	<p>R</p> <ul style="list-style-type: none"> ■ Method of treatment ■ Test result or certificate of compliance from producer
<p>GUIDANCE <i>Context: natural fertilisers derived from animal products used in some growing systems are a potential source of contamination of the growing crop. Such fertilisers must have undergone treatment to achieve a high level of potential pathogen reduction.</i></p>		
<p> WHERE TO FIND HELP <ul style="list-style-type: none"> ■ AHDB Industry Guide to Good Hygiene Practice: Watercress: https://ahdb.org.uk/knowledge-library/industry-guide-to-good-hygiene-practice-watercress </p>		



CERTIFICATION BODIES

Your routine point of contact with the scheme is through your certification body.

certification bodies are licensed by Red Tractor to manage membership applications and to carry out assessment and certification against the standards. The table below shows which certification bodies apply to each enterprise.

Certification Body	Beef and Lamb	Dairy	Combinable Crops and Sugar Beet	Fresh Produce	Pigs	Poultry		
						Chickens	Turkey	Duck
NSF	✓	✓	✓	✓	✓	✓		
SAI Global	✓	✓	✓	✓		✓	✓	✓
Lloyd's Register	✓	✓	✓	✓	✓			
NIFCC (Northern Ireland)		✓				✓		
QWFC (Wales)		✓						



■ **NSF Certification**
 Hanborough Business Park,
 Long Hanborough, Oxford OX29 8SJ
 T. 01993 885610
 E. agriculture@nsf.org
 www.nsf-foodeurope.com



■ **SAI Global Assurance Services Ltd**
 PO Box 6236, Milton Keynes MK1 9ES
 T. 01908 249973
 E. agrifood@saiglobal.com
 www.saiglobal.com/assurance



■ **Lloyd's Register**
 6 Redheughs Rigg, Edinburgh EH12 9DQ
 T. 0131 335 6643
 E. redtractor-ca@lr.org
 www.lr.org/uk



■ **NIFCC [Northern Ireland]**
 1A Lissue Walk, Lissue Industrial Estate
 (East), Lisburn, Northern Ireland BT28 2LU
 T. 028 9263 3017
 E. info@nifcc.co.uk
 www.nifcc.co.uk



■ **QWFC [Wales]**
 PO Box 8, Gorseland, North Road,
 Aberystwyth SY23 2WB
 T. 01970 636688
 E. info@wlbpc.co.uk
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BUILDING TRUST AND ADVANCING BRITISH AGRICULTURE FOR OVER TWO DECADES

In the wake of damaging food scares, Red Tractor was founded with a clear mission to rebuild public trust in the food produced by British farmers.

Since 2000, we have worked with consumers, our farmer members, food processors and retailers to create the UK's largest and most comprehensive food standards scheme.

Today, it is Britain's most-trusted food assurance scheme, with more than three-quarters of shoppers viewing it as independent and trustworthy.

The Red Tractor symbol is a hallmark of quality British food and drink that is easily recognised by shoppers and diners.

We are proud to work with 50,000 farmer members to produce food and drink to world-leading standards worth £14bn to the UK economy.

The progress we have made does not mean our journey is at an end. Red Tractor will always strive to support and advance British agriculture in producing food that is traceable, safe and farmed with care.