

Table S1. Control points provided for by the different versions of the Eurepgap / GLOBALG.A.P. IFA FV protocol.

Version Eurepgap	<u>Eurepgap-Vers. Sept. 2001</u>	<u>Eurepgap-Vers. 2.1 Oct 2004</u>	<u>Eurepgap-Vers. 3.0-1 Jul 2007</u>
Control points	Requirements Tot. 107 Major 22 Minor 44 Recommendations 41	Requirements Tot. 204 Major 49 Minor 89 Recommendations 66	Requirements Tot. 236 Major 74 Minor 125 Recommendations 37
<u>Control points:</u>	<p><u>Complaints form</u> - 1 Maj</p> <p><u>Crop protection</u> (Basic elements of crop protection, Choice of chemicals, Advice on quantity and type of pesticide, Records of application, Safety training and instructions, Protective clothing/equipment, Pre-harvest interval, Spray equipment, Disposal of surplus application mix, Pesticide residue analysis, Pesticide storage, Empty pesticide containers, Obsolete pesticides) – 9 Maj, 30 min and 13 Rec</p> <p><u>Environment issues</u> (Impact of farming on the environment, Wildlife and conservation policy, unproductive sites) – 1Min and 3 Rec</p> <p><u>Fertilizer usage</u> (Nutrient requirement, Advice on quantity and type of fertilizer, Records of application, Timing and frequency of application, Application machinery, Fertilizer storage, Organic manure) – 2 Maj, 9 Min, 9 Rec</p> <p><u>Harvesting</u> (Hygiene, Packaging on-farm) –4 Min, 1 Rec</p> <p><u>Internal audit</u> – 1 Maj</p>	<p><u>Complaints form</u> - 2 Maj</p> <p><u>Crop protection</u> (Basic elements of crop protection, Choice of chemicals, Records of application, Pre-harvest interval, Application equipment, Disposal of surplus application mix, Plant protection product residue analysis, Crop protection, product storage and handling, Empty crop protection product containers, Obsolete plant protection product) – 15 Maj, 43 min and 6 Rec</p> <p><u>Environment issues</u> (Impact of farming on the environment, wildlife and conservation policy, unproductive sites) – 1 Min and 7 Rec</p> <p><u>Fertilizer use</u> (Advice on quantity and type of fertilizer, Records of application, Application machinery, Fertilizer storage, Organic fertilizer, Inorganic fertilizer) – 2 Maj, 15 Min, 4 Rec</p> <p><u>Harvesting</u> (Hygiene, Packaging/Harvesting containers on-farm, Produce packed at point of harvest) – 6 Maj, 1Min, 2 Rec</p>	<p><u>Complaints</u> - 2 Maj</p> <p><u>Environment and conservation</u> (Impact of farming on the environment and biodiversity, unproductive sites, Energy efficiency) – 1 Min e 7 Rec</p> <p><u>Fertilizer use</u> (Nutrient requirement, Advice on quantity and type of fertilizer, Records of application, Application machinery, Fertilizer storage, Organic fertilizer, Inorganic fertilizer) – 2 Maj, 19 Min, 2 Rec</p> <p><u>Harvesting</u> (General, Final produce packing at point of harvest) – 13 Maj, 4 Min</p> <p><u>Integrated pest management</u> (Choice of plant protection products, Records of application, Pre-harvest interval, Application equipment, Disposal of surplus</p>

	<p><u>Irrigation</u> (Predicting irrigation requirement, Irrigation method, quality of irrigation water, Supply Irrigation water) – 1 Maj, 6 Min</p> <p><u>Post-harvest treatments</u> (Post-harvest chemicals, Post-harvest washing) – 4 Maj, 3 Min, 2 Rec</p> <p><u>Records-Keeping</u> (Record Keeping) – 1 Min</p> <p><u>Site history and site management</u> (Site history, Rotations) - 2 Maj and 5 Min</p> <p><u>Soil and substrate management</u> (Soil type mapping, Cultivation, Soil erosion, Soil fumigation, Substrates) – 1 Maj, 4 Min, 5 Rec</p> <p><u>Traceability</u> - 1Maj- <u>Varieties and rootstocks</u> (Choice of a variety of rootstock, Seed quality, Pest and disease resistance/Tolerance, Seed treatments and dressings, Nursery stock, Genetically</p>	<p><u>Irrigation/fertigation</u> (Predicting irrigation requirement, Irrigation/fertigation method, quality of irrigation water, Supply Irrigation/fertigation water) – 1 Maj, 15 Rec</p> <p><u>Produce handling</u> (Hygiene, Post-harvest washing, Post-harvest treatments, On-farm facility for produce handling and/or storage personal hygiene) –13 Maj, 14 Min, 5 Rec</p> <p><u>Record keeping and internal self-assessment/internal inspection</u> - 3 Maj, 1 Min</p> <p><u>Site history and site management</u> - 2 Maj, 1 Min, 1 Rec</p> <p><u>Soil and substrate management</u> (Soil mapping, Soil erosion, Cultivation, Soil fumigation, substrates) – 1 Maj, 3 Min and 6 Rec</p> <p><u>Traceability</u> - 1Maj- <u>Varieties and rootstocks</u> (Choice of variety or rootstock, seed/rootstock quality, pest and disease resistance, Seed treatments and dressing, Propagation material, OGM) – 1 Maj, 6 Min, 4 Rec)</p>	<p>application mix, Plant protection product residue analysis, Plant protection products storage, Plant protection product handling, Empty plant protection product containers, obsolete plant protection product) – 23 Maj, 42 min e 5 Rec_</p> <p><u>Irrigation/fertigation</u> (Predicting irrigation requirement, Irrigation/fertigation method, quality of irrigation water, Supply Irrigation/fertigation water) – 1 Maj, 5 Min e 5 Rec_</p> <p><u>Produce handling</u> (Principles of hygiene, Personal hygiene, Sanitary facilities, Packing and storage areas, Quality control, Rodent and bird control, Post-harvest washing, Post-harvest treatments) – 20 Maj, 20 Min, 6 Rec</p> <p><u>Products Recall</u> – 1 Maj</p> <p><u>Propagation material</u> (Choice of a variety of rootstock) – 1 Rec</p> <p><u>Propagation material</u> (Quality and health, Pest and disease resistance, Chemical treatments and dressing, Sowing/planting, OGM) - 3 Maj, 8 Min and 2 Rec</p> <p><u>Record keeping and internal self-assessment/internal inspection</u> -2 Maj, 1 Min</p> <p><u>Site history and site management</u> (Rotations) - 1 rec</p> <p><u>Site history and site management</u> -2 Maj e 2 Min</p> <p><u>Soil and substrate management</u> (Soil fumigation, Substrates) – 1 Maj, 2 Min, 2 Rec</p> <p><u>Soil management</u> (Soil mapping, Soil erosion, Cultivation) – 1 Min e 2 Rec</p> <p><u>Traceability</u> - 1Maj</p>
--	--	--	---

	<p>Modified Organisms (GMO) – 1 Maj, 7 Min, 5 Rec</p> <p><u>Waste and Pollution management, Recycling and re-use</u> (Identification waste and pollutants, Waste and pollutions action plan) - 3 Rec</p> <p><u>Workers Health, Safety and Welfare</u> (Risk assessment, Training, Facilities and equipment, Pesticides handling, Hygiene, Welfare) - 1 Maj, 6 Min and 8 Rec</p>	<p><u>Waste and Pollution management, Recycling and re-use</u> (Identification waste and pollutants, Waste and pollutions action plan) - 6 Rec</p> <p><u>Worker Health, Safety and Welfare</u> (Risk assessment, Training, Facilities, Equipment and accident procedures, Crop protection product handling, Protective clothing/ equipment, Welfare, Visitors safety) - 2 Maj, 13 Min and 9 Rec</p>	<p><u>Waste and Pollution management, Recycling and re-use</u> (Identification waste and pollutants, Waste and pollutions action plan) - 1 Maj, 1 Min and 3 Rec</p> <p><u>Workers Health, Safety and Welfare</u> (Risk assessment, Training, Hazards and first aid, Protective clothing/ equipment, Workers welfare, subcontractors) - 4 Maj, 17 Min and 1 Rec</p>
<p>Version GLOBALG.A.P.</p> <p>Control points</p>	<p><u>GLOBALG.A.P. -Vers. 4.0 March 2011 e GLOBALG.A.P. Vers. 4.0-2 March 2013</u></p> <p>Requirements Tot. 232 Major 95 Minor 117 Recommendations 22</p>	<p><u>GLOBALG.A.P. -Vers. 5.0-2 Jul e Vers. 5.1 Feb. 2018</u></p> <p>Requirements Tot. 217 Major 89 Minor 110 Recommendations 18</p>	<p><u>GLOBALG.A.P. -Vers. 5.2 Feb. 2019</u></p> <p>Requirements Tot. 222 Major 93 Minor 114 Recommendations 15</p>
<p>Control points</p>	<p><u>Application equipment</u> - 1 Min, 1 Rec</p> <p><u>Complaints</u> - 1 Maj</p> <p><u>Environment and conservation</u> (Impact of farming on the environment and biodiversity, unproductive sites, Energy efficiency) – 1 Maj, 1 Min and 3 Rec</p> <p><u>Fertilizer use</u> (Nutrient requirement, Advice on quantity and type of fertilizer, Records of application, Application machinery, Fertilizer storage, Organic fertilizer, Inorganic fertilizer, nutrient content) – 2 Maj, 18 Min, 1 Rec -</p> <p><u>Food defense</u> - 1 Maj –</p> <p><u>GLOBALG.A.P. Status</u> - 1 Maj e 1 Min</p> <p><u>Harvesting</u> (General, Final produce packing at point of harvest) – 15 Maj, 3 Min</p>	<p><u>Application equipment</u></p> <p><u>Complaints</u></p> <p><u>Environment and conservation</u> (Impact of farming on the environment and biodiversity, unproductive sites, Energy efficiency, water collection/recycling)</p> <p><u>Fertilizer use</u> (Nutrient requirement, Advice on quantity and type of fertilizer, Records of application, Application machinery, Fertilizer storage, Organic fertilizer, Inorganic fertilizer, nutrient content)</p> <p><u>Food defense</u></p> <p><u>Food fraud mitigation</u></p> <p><u>Food safety policy declaration</u></p> <p><u>GLOBALG.A.P. Status</u></p> <p><u>Harvesting</u> (General, Final produce packing at point of harvest)</p> <p><u>Hygiene</u></p>	<p><u>Application equipment</u></p> <p><u>Complaints</u></p> <p><u>Environment and conservation</u> (Impact of farming on the environment and biodiversity, unproductive sites, Energy efficiency, water collection/recycling)_</p> <p><u>Fertilizer use</u> (Nutrient requirement, Advice on quantity and type of fertilizer, Records of application, Application machinery, Fertilizer storage, Organic fertilizer, Inorganic fertilizer, nutrient content)</p> <p><u>Food defense</u></p> <p><u>Food fraud mitigation</u></p> <p><u>Food safety policy declaration</u></p> <p><u>GLOBALG.A.P. Status</u></p> <p><u>Harvesting</u> (General, Final produce packing at point of harvest)</p> <p><u>Hygiene</u></p>

	<p><u>Integrated pest management</u> (Advice, Prevention activity, observation and monitoring, intervention, antiresistance advice) - 3 Maj, 2 Min -</p> <p><u>Irrigation/fertigation</u> (Predicting irrigation requirement, Irrigation/fertigation method, quality of irrigation water, Supply Irrigation/fertigation water) – 2 Maj, 6 Min e 4 Rec -</p> <p><u>Logo use</u> – 1 Maj –</p> <p><u>Pesticides</u> (Choice of plant protection products, Advice on quantity and type of pesticides, Records of application, Pre-harvest interval, Application equipment, Disposal of surplus application mix, Plant protection product residue analysis, Plant protection products storage, Plant protection product handling, Empty plant protection product containers, application of substances other than pesticides and fertilizers obsolete plant protection product) – 21 Maj, 36 min e 1 Rec –</p> <p><u>Pre-harvest</u> (Water quality used for the application of pesticides, application of organic fertilizers, pre-harvest checks) -2 Maj, 1 Min -</p> <p><u>Produce handling</u> (Principles of hygiene, Personal hygiene, Sanitary facilities, Packing and storage areas, Quality control, Rodent and bird control, Post-harvest washing, Post-harvest treatments) – 22 Maj, 17 Min, 5 Rec -</p> <p><u>Products Recall</u> – 1 Maj -</p> <p><u>Propagation material</u> (Quality and health, Chemical treatments and dressing, OGM) - 3 Maj, 7 Min e 1 Rec.</p>	<p><u>Integrated pest management</u> (Advice, Prevention activity, observation and monitoring, intervention, antiresistance advice)</p> <p><u>Logo use</u></p> <p><u>Mass balance</u></p> <p><u>Pesticides</u> (Choice of plant protection products, Advice on quantity and type of pesticides, Records of application, Pre-harvest interval, Application equipment, Disposal of surplus application mix, Plant protection product residue analysis, Plant protection products storage, Plant protection product handling, Empty plant protection product containers, application of substances other than pesticides and fertilizers obsolete plant protection product)</p> <p><u>Pre-harvest</u> (Water quality used on pre-harvest activities, Water quality used for the application of pesticides, application of organic fertilizers of animal origin, pre-harvest checks)</p> <p><u>Produce handling</u> (Principles of hygiene, Personal hygiene, Sanitary facilities, Packing and storage areas, Quality control, Rodent and bird control, Post-harvest washing, Post-harvest treatments)</p> <p><u>Products Recall</u></p> <p><u>Propagation material</u> (Quality and health, Chemical treatments and dressing, OGM)</p>	<p><u>Integrated pest management</u> (Advice, Prevention activity, observation and monitoring, intervention, antiresistance advice)___</p> <p><u>Labelling</u></p> <p><u>Logo use</u></p> <p><u>Mass balance</u></p> <p><u>Non-conforming products</u></p> <p><u>Pesticides</u> (Choice of plant protection products, Advice on quantity and type of pesticides, Records of application, Pre-harvest interval, Application equipment, Disposal of surplus application mix, Plant protection product residue analysis, Plant protection products storage, Plant protection product handling, Empty plant protection product containers, application of substances other than pesticides and fertilizers obsolete plant protection product)</p> <p><u>Pre-harvest</u> (Water quality used on pre-harvest activities, Water quality used for the application of pesticides, application of organic fertilizers of animal origin, pre-harvest checks)___</p> <p><u>Produce handling</u> (Principles of hygiene, Personal hygiene, Sanitary facilities, Packing and storage areas, Quality control, Rodent and bird control, Post-harvest washing, Post-harvest treatments)___</p> <p><u>Products Recall</u></p> <p><u>Propagation material</u> (Quality and health, Chemical treatments and dressing, OGM),</p>
--	--	---	---

	<p><u>Record keeping and internal self-assessment/internal inspection</u> -2 Maj, 1 Min -</p> <p><u>Site history and site management</u> -2 Maj e 2 Min -</p> <p><u>Soil management</u> (Soil mapping, Soil erosion, Cultivation) – 1 Min e 2 Rec –</p> <p><u>Soil and substrate management</u> (Soil fumigation, Substrates) – 1 Maj, 2 Min, 2 Rec -</p> <p><u>Subcontractors</u> – 2 Min –</p> <p><u>Traceability</u> - 1Maj -.</p> <p><u>Traceability and Segregation</u> (Production/parallel ownership) – 8 Maj –</p> <p><u>Waste and Pollution management, Recycling and re-use</u> (Identification waste and pollutants, Waste and pollutants action plan) - 1 Maj, 1 Min e 2 Rec -.</p> <p><u>Workers Health, Safety and Welfare</u> (Health and safety, Hygiene, Risk assessment, Training, Hazards and first aid, Protective clothing/ equipment, Workers welfare, subcontractors) - 4 Maj, 17 Min and 1 Rec.</p>	<p><u>Record keeping and internal self-assessment/internal inspection</u></p> <p><u>Site history and site management</u></p> <p>Site management (Risk assessment)</p> <p><u>Soil management</u> (Soil mapping, Soil erosion, Cultivation)</p> <p><u>Soil management</u> (Soil fumigation, Substrates)</p> <p><u>Subcontractors</u></p> <p><u>Traceability</u></p> <p><u>Traceability and Segregation</u> (Production/parallel ownership)</p> <p><u>Waste and Pollution management, Recycling and re-use</u> (Identification waste and pollutants, Waste and pollutions action plan)</p> <p><u>Water management</u> (Predicting irrigation requirement, efficient use of water in the company, quality of irrigation water, Supply Irrigation/fertigation water, water storage facilities)</p> <p><u>Workers Health, Safety and Welfare</u> (Health and safety, Risk assessment, Training, Hazards and first aid, Protective clothing/ equipment, Workers welfare)</p>	<p><u>Record keeping and internal self-assessment/internal inspection</u></p> <p><u>Site history and site management</u></p> <p><u>Site management</u> (Risk assessment)</p> <p><u>Soil management</u> (Soil mapping, Soil erosion, Cultivation)</p> <p><u>Soil management</u> (Soil fumigation, Substrates) _</p> <p><u>Subcontractors</u> _</p> <p><u>Traceability</u> _</p> <p><u>Traceability and Segregation</u> (Production/parallel ownership)</p> <p><u>Waste and Pollution management, Recycling and re-use</u> (Identification waste and pollutants, Waste and pollutions action plan)_</p> <p><u>Water management</u> (Predicting irrigation requirement, efficient use of water in the company, quality of irrigation water, Supply Irrigation/fertigation water, water storage facilities)_</p> <p><u>Workers Health, Safety and Welfare</u> (Health and safety, Risk assessment, Training, Hazards and first aid, Protective clothing/ equipment, Workers welfare)</p>
--	---	---	--