European Commission

DG Health and Food Safety

Potato Ring Rot and Brown Rot Surveys in the EU

Annual Report 2015/2016

Health and Food Safety

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EUROPEAN COMMISSION
DIRECTORATE-GENERAL FOR HEALTH AND FOOD SAFETY

Directorate F
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Potato ring rot and brown rot surveys in the EU

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EXECUTIVE SUMMARY

Substantial survey efforts are made in the European Union Member States for both Clavibacter michiganensis *spp.* sepedonicus *(causing potato ring rot) and* Ralstonia solanacearum *(causing potato brown rot).*

The number of ring rot outbreaks decreased in some Member States. Overall, the situation has slightly improved as the total number of findings in the ware potato production was further lowered compared to the previous season. However, ring rot incidence has increased in seed by approximately 60%. In Poland, where most ring rot in the EU occurs, the situation in seed production has further deteriorated and the number of findings has doubled compared to the previous growing period. The situation in Romania remains stable in seed and shows some improvement in ware potatoes. One outbreak in the ware potato production sector occurred in the Netherlands.

The overall brown rot incidence has only slightly increased in ware potatoes and for the second year, there were no findings in seed. Following the first outbreak in 2014 the organism is still present in Poland, whilst Czech Republic, Portugal, Spain and Hungary still need to manage with the continuous findings of the pathogen in ware potatoes. The situation appears to be very positive in the Netherlands and Romania with no brown rot detection during the last three growing periods. No substantial changes were noticed with regard to the presence of R. solanacearum *in surface water or hosts other than potato.*

Increased surveillance efforts in Member States affected by ring rot and brown rot in both seed and ware potatoes are necessary for further suppression and containment of both potato diseases.

1. INTRODUCTION

Member States (MS) are required by Council Directives 93/85/EEC and 98/57/EC to carry out surveys for *Clavibacter michiganensis* spp. *sepedonicus* and *Ralstonia solanacearum* - the bacteria that cause ring rot and brown rot respectively in potatoes. The results of these surveys must be submitted to the Commission annually. The following summary for the 2015/2016 season is based mainly on these reports. All MS have submitted reports which enable a general overview to be produced. A comparison across countries and years is also possible. Notifications of outbreaks submitted in accordance with Article 5(2) of the two Directives and interceptions between MS have been taken into account. With 28 reporting MS and Switzerland (see Section 4), the amount of material is substantial and the focus in this report is on the main aspects only.

The potato production area in 2015 was approximately 1.54 million ha in the 28 EU MS (see Table 1), which is somewhat less than in the preceding year. The seed production area decreased by 1.8%. Similarly to the last growing period, about 7% of the total area was seed potatoes. Ware and seed potatoes were produced in all MS, with the exceptions of Malta who produced no seed.

A considerable effort has been made by the MS in carrying out the surveys for both bacteria, based on survey programmes which are prepared and updated every year by individual MS. All production of seed potatoes for marketing is supervised by responsible bodies under the seed potato certification schemes. This is conducted by way of regular field inspections during the vegetation period and around harvesting (including cutting of tuber samples), followed by laboratory analysis of samples. Some MS apply similar controls to part of the farm saved seed production also. The criteria used to select ware potato lots for testing vary amongst countries but mainly include the following: focus on registered or bigger producers, high risk locations or production, source of seed potato used, findings in preceding years. In addition to the programme for laboratory testing, in some MS a significant number of lots were visually inspected and both suspected and randomly chosen tubers were cut to look for symptoms.

Generally, samples of 200 tubers are tested. In some cases like, for example, sampling of high grade seed, the size of sample taken for visual inspection was less than 200 tubers (DE, PL, UK). In many MS, samples taken from potato lots are tested for the presence of both bacteria in parallel. Some MS (BG, HR, CZ, EE, ES, DE, HU, LT, LV, NL, RO, SE, SI, SK), submitted descriptions of their sampling/testing methods confirming that they are using the methods of analysis as prescribed in the annexes to the control directives. In general, modern and sophisticated methods are used (IF, FISH, PCR, *real-time* PCR) as core screening tests, followed by plating methods and bioassay where needed. In the case of water testing, plating methods are used at first followed by complementary tests, if needed.

2. RING ROT (*CLAVIBACTER MICHIGANENSIS* SPP. *SEPEDONICUS*)

2.1. Survey density 2015/2016

Table 2 shows the total survey activity of testing and visual inspection of various categories of domestic potatoes, while Table 3 shows the amount of testing and inspection carried out on non-domestic potatoes, i.e. potatoes from other MS or from third countries.

Table 6 shows the overall number of tests for latent infection in all MS since 1994. In 2015/2016, the number of samples taken for analysis from their own production in 28 MS was 86,892 of which ca. 73% were seed. In addition to this, 6,157 samples of potatoes from other MS (of which ca. 4,547 samples of Dutch, German, Danish, French and UK seed) or third countries were analysed.

In many MS, numbers of samples analysed were similar to previous years, while in others, a slight or considerable trend to decrease sampling was observed in both seed and ware potatoes. In particular, Cyprus, Estonia, Finland, Lithuania and Luxemburg reduced 20% or more their seed potatoes testing. Czech Republic, Romania, Sweden and United Kingdom reduced significantly their ware potatoes testing. Croatia and Greece decreased their efforts in both seed and ware. By contrast an increase in testing was observed in seed tested in Netherlands, Romania, Sweden and United Kingdom and of ware potatoes tested in Cyprus and Denmark. France and Poland increased their efforts in both seed and ware.

Table 4 compares the sampling density for latent infection testing applied in MS – using a crude calculation of how many ha of potatoes each sample, on average, represents. From a statistical point of view this is not entirely correct, as the total number of samples needed to detect a certain level of infection (or "guarantee" freedom in the production to a predefined degree) in a country would vary, not only with the total hectarage grown, but also with the size of units (lots, farms) involved. Furthermore, a varying proportion of the total number of samples is used for targeted surveys, i.e. investigation of outbreaks and systematic sampling on farms with outbreaks in preceding years. In countries with many outbreaks, this can constitute a substantial proportion of the sampling. This indicator is also not so relevant for countries where system approaches are in use, e.g. with focus on the most critical points in the production chain or risk involved.

Nevertheless, with the data available, this calculation of sampling intensity can still be useful for an overall comparison of efforts across MS. These are shown in table 4 grouped into three categories: 1) where ring rot has been more or less established for a while or appeared recently in seed without an apparent, "imported" origin; 2) with only a few, sporadic outbreaks; and 3) where ring rot has never occurred. The average for each group is indicated with the overall EU average at the bottom of the Table. There are substantial variations within the groups.

The average sample density of seed potatoes in the first group was slightly improved to that of the previous growing period. Following the repeated outbreaks of ring rot, as of the last growing period Hungary has been included in this group. The Netherlands is dominating the picture with regard to the total number of analysed samples of seed potatoes (31.5% of all seed potato samples analysed in the EU are Dutch), with sampling density of 1.86 ha/sample (similar to that of the previous season at 1.9 ha/sample), and then Germany with sample density 1.46 ha/sample, both countries having densities close to the average in the first group (1.49 ha/sample). Sampling more intense than 1 ha/sample was observed for Poland, Romania, and Estonia. In most MS in this group, the average sampling density varied between 0.7-2 ha/sample, whilst Latvia, Spain, Slovakia, Finland, Sweden, had lower densities (2.16, 2.41, 2.05, 2.09, 2.39 and 8.27 respectively). Greece had the lowest density with 8.27 ha/sample.

For ware potatoes, the average sampling density (47.6 ha/sample) in the first group was slightly improved to that of the previous growing season (49.7 ha/sample).

However, most MS are below this density. Poland still dominates the picture as regards the total number of samples tested (some 39% of all ware potato samples analysed in the EU are Polish), with sampling density 35 ha/sample significantly increased compared to the previous season (42.6 ha/sample). In Spain, Sweden, and Greece the survey efforts were significantly lower compared to the previous growing season. Estonia increased somewhat its efforts in ware potatoes (ca. 30.7 ha/sample) when compared to the previous potato growing period (36.4 ha/sample). Latvia, Lithuania, Romania, Netherlands, Bulgaria, Slovakia, Finland, Hungary and Czech Republic remained within their usually applied standards of sampling densities close to or below 50 ha/sample.

As could be reasonably expected, the average sampling density is in general lower in groups two and three than in group one. The average sampling density in seeds in the second group is similar to that of the previous season whilst it has been slightly increased in ware. No significant changes were observed in either seed or ware potato sampling in the third group.

2.2. Detection/outbreaks

Table 6 shows the number of infected lots found in each MS since 1994. In total, 12 MS were affected in 2015/2016 none of which were recording the pathogen for the first time. Despite the slight decrease observed in the number of ring rot positives found in ware potatoes, the total number of findings was similar to that of the previous season because ring rot in seed potatoes increased by approximately 70% (see below).

Table 5 shows the incidence of ring rot in the MS where it occurred in the 2015 harvest. It is calculated as the number of positive lots as a percentage of samples analysed. The table also indicates the number of outbreaks or positive ring rot cases corresponding to the number of positive lots. Poland still dominates the picture when speaking of ring rot in the EU; some 89% of the contaminated lots were found there. The increased number of ware potato samples analysed in Poland resulted in a higher number of positive lots, but overall the disease incidence in ware potatoes was somewhat decreased compared to the last growing period (9.1% vs. 10.2% in 2014/2015). The number of contaminated seed potato lots was significantly increased compared to the previous seasons: 18 in total, giving an incidence level of 0.22% (vs. 0.1% in 2014/2015 and 0.07 in 2013/2014).

The overall picture regarding ring rot incidences in seed potatoes for the rest of the EU was similar to that of the previous growing period (0.02% vs. 0.018% in 2014/2015). However, the ring rot incidence in ware potatoes was further decreased to 0.66% compared to 1.1% in the previous season.

Five positive seed lots were found in Romania with ring rot incidence slightly increased compared to the previous growing period (0.4% vs 0.37% in 2014/2015). A decrease was observed in positive ware lots resulting in a decrease of ring rot incidence in ware potatoes (4.48% vs 6.3% in 2014/2015).

If Romania is excluded from the overall figures together with Poland, there were only 47 lots found contaminated in the 2015/2016 season (of which, six in seeds) and the overall incidence would be 0.31% in ware potatoes (indicating a decrease compared to the last growing season (0.49%). and 0.01 in seed.

The situation in the Baltics was somewhat improved mainly due to the decrease in the number of findings in ware potatoes giving incidence level 1.9% in Lithuania (2.5% last season), 1.2% in Latvia (2.7% last season) and zero in Estonia (0.6% last season). In some places of production using farm saved seed for many years, there are recurrent ring rot outbreaks. One finding occurred in seed potatoes produced in Estonia. There were no findings in seed in Lithuania and Latvia.

In the Nordic countries, ring rot was not found in Sweden (not found for the fourth consecutive year) whilst the disease has been eradicated in Denmark (not found for twelve years). Two findings occurred in Finland giving an incidence level of 0.5%.

After having sporadic outbreaks in both seed and ware potatoes until 2003, Austria found no ring rot for the twelfth year in a row while keeping its level of sampling stable for both seed and ware potatoes. After the first findings in ware potatoes last year, the situation in Hungary is not improving with six findings in ware potato production this year, counted in total as two outbreaks since the cases were related. Following the ring rot outbreaks in 2012, there have been no new outbreaks in Belgium and the United Kingdom.

Ring rot contamination seems still to be present in Germany, although for many years now with relatively few findings. This year, there was only one finding of the bacterium in ware potatoes (out of 2,675 lots of ware potatoes analysed); despite extensive investigations the origin of the infection could not be traced. For the third year in a row, there were no findings in seed. In the Netherlands, there was one finding of the bacterium in ware potatoes, possibly due to lack of or inappropriate cleaning of wooden crates used for storage and transport.

Czech Republic had four findings of ring rot in seed and two findings in ware potatoes, overall counted as six cases of outbreaks. Three findings occurred in ware potatoes in Slovakia; no findings occurred in seed. There were no findings in seed or ware potatoes in Spain and France. For the seventh consecutive year, Greece did not find ring rot including in Crete.

The level of ring rot contamination increased somewhat in Bulgaria as three cases of positive ware potatoes were reported (1 case in 2014/2015). One positive case of ring rot was identified in seed. The origin of the infection might be related to the use of non-certified seed and shared machinery. Italy did not find the bacterium for the seventh consecutive year; however sampling density continues to be low in both seed and ware potatoes.

Affected MS submitted more detailed information on applying the routine control measures taken as a consequence of findings. They also provided descriptions of measures taken in response to findings or interceptions in order to find the possible source and spread of the disease. Investigations carried out in MS with outbreaks (e.g. Bulgaria, Czech Republic, Estonia, Germany, Hungary, Lithuania, Latvia) allowed either to find or to suspect a reason for infection (as in most cases no definite source of infection could be found). In MS with a high number of findings (e.g. Poland, Romania), finding a possible source of infection was not possible in most cases. This was principally because of mixed seeds of uncertain origins, sharing machinery and storage facilities and use of farm saved seeds.

2.3. Interceptions

As indicated in Table 3, six interceptions of ring rot were reported during the last season, all in ware potatoes. The potatoes were from Poland (2), Belgium (1) and Turkey (3). This represents a worsening compared to the previous season where there were no interceptions. The figures of visual inspections and testing of marketed potatoes from other MS and third countries increased respectively by 23% and 17% compared to the previous season. In total, samples from 6,157 consignments were examined in the laboratory and 7,725 were visually inspected.

2.4. Conclusions on ring rot

Survey efforts are still substantial although somewhat uneven across the EU, even when taking into account the phytosanitary situation in various MS. The differences in surveillance efforts between MS were similar to the previous growing season, in particular regarding ware potatoes in all groups with average sampling density 60.5 ha/sample (63.7 ha/sample in the previous season). In the case of seed potatoes, most MS took one sample either from one lot or from 25 tonnes, which resulted in an overall average sampling density of 1.76 ha/sample, slightly improved to that observed in the previous season (1.91 ha/sample).

As has been observed over previous years, the situation seems to be under control in countries with a large potato production, including seeds, such as France, United Kingdom (both with no findings), Germany and the Netherlands, (both with only one finding in ware). Figure 1 shows the overall number of tests in seed potato and samples positive to ring rot in the EU since 2006. Five MS, Bulgaria, Czech Republic, Estonia, Poland and Romania found ring rot in seed in 2015/2016.

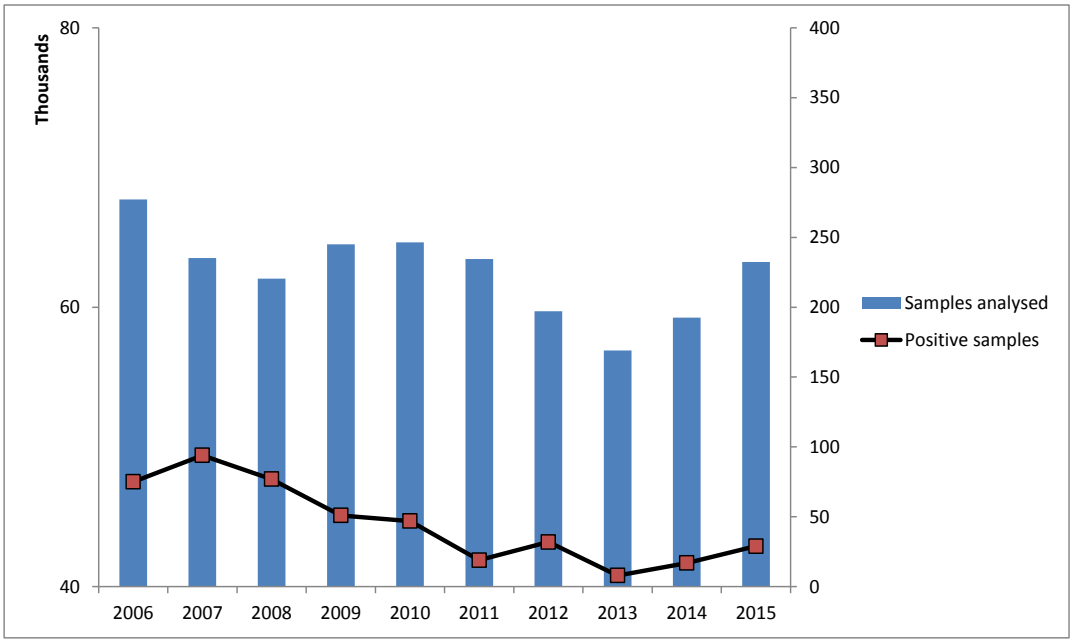

Figure 1. Overall number of tests in seed potato and samples positive to ring rot in the EU since 2006

When consistently applied, the control and precautionary measures prescribed in the control Directive, will eventually bring the disease under control and either eradicate it or reduce the amount of contamination to very low levels. It may be presumed that the pathogen has been eradicated from Austria and Denmark, as the current picture continues to be very promising.

Most contamination in the EU continues to be found in Poland, where sampling efforts increased. Only minor progress was observed in ware potatoes whilst ring rot incidence in seed doubled. The overall ring rot incidence is still very high for both seed and ware potatoes. Romania continued increasing its efforts and in seed achieved a better level of sampling and testing, but still has the second highest ring rot incidence. Figure 2 shows the overall number of tests in ware potato and samples positive to ring rot in the EU since 2006. In most ring rot cases found, no definite source of the contamination could be identified.

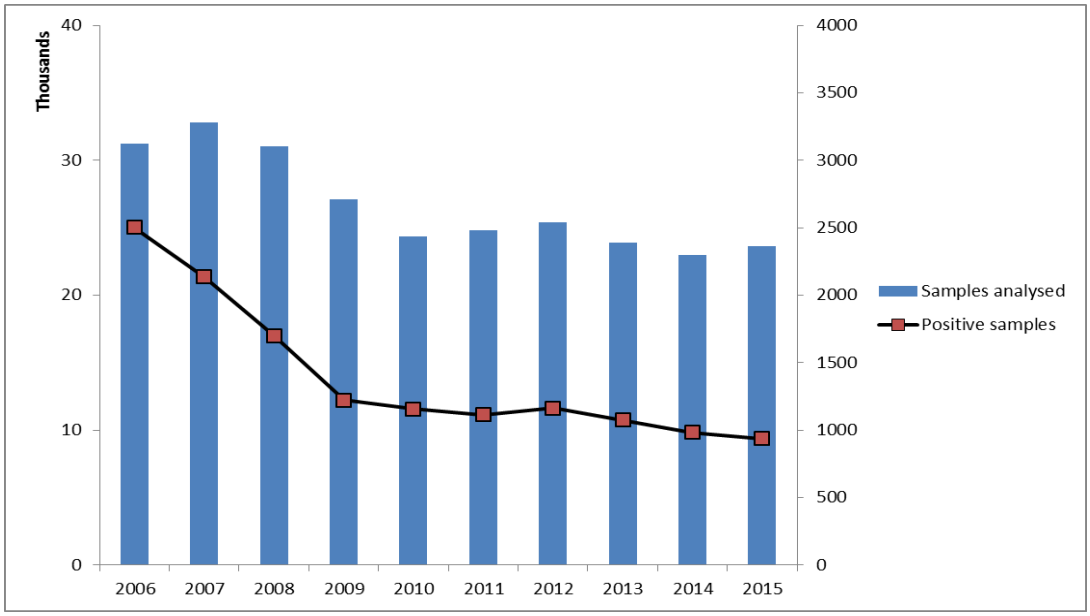

Figure 2. Overall number of tests in ware potato and samples positive to ring rot in the EU since 2006

Overall, the ring rot incidence worsened in seed and slightly improved in ware. Taking the EU as a whole, the situation has improved somewhat since the previous growing period as the total number of findings was lower and the overall ring rot incidence decreased somewhat in 2015 (4% vs. 4.3% observed in 2014).

3. BROWN ROT *(RALSTONIA SOLANACEARUM)*

3.1. Survey density 2015/2016

Table 7 shows the total survey activity of testing and visual inspection on various categories of domestic potatoes. Table 8 shows the survey activity in water and hosts other than potato and Table 9 shows the amount of testing and inspection carried out on non-domestic potatoes, i.e. potatoes from other MS or from third countries.

In potatoes

Table 12 shows the overall number of tests for latent infection in all MS since 1995. In 2015/2016, the numbers of samples taken for analysis from their own production in all MS amounted to 91,769 approximately 67% of which were seed. In addition to this, 6,157 samples of potatoes from other MS (mainly Dutch seed, but also German, Danish and British) or third countries were analysed.

In most MS, the numbers of samples analysed were similar to previous years. A significant increase in sampling was observed for seed potatoes in France, Poland Romania, Sweden and the Netherlands and for ware potatoes in Denmark, France

and Poland. By contrast, Czech Republic decreased further its sampling efforts in seed, whilst Greece, Romania and Sweden decreased further their sampling for ware. The Netherlands continue to apply a testing density of one sample of seed potatoes per lot. In case of "high risk profile" (e.g. outbreaks or clonal and/or contact links with contaminated material) and violations (e.g. prohibited use of surface water for irrigation) one sample per 25 tonnes was taken. For ware potatoes the "high risk profile" sampling rate is one sample per 150 tonnes.

The sampling density applied in MS for latent infection testing is calculated as for ring rot and shown in Table 10 where MS are grouped into three categories: 1) where brown rot has been, more or less, established for a while in potatoes, tomatoes or in wild hosts/water; 2) with only few, sporadic outbreaks; and 3) where brown rot has never occurred. The average for each group is indicated with the overall EU average at the bottom of the Table. For seed potatoes, the sampling density in group one is higher compared to the second and third groups. However, substantial variations between MS are observed within all groups. A similar situation is also observed in sampling density of ware potatoes.

Following its move to the first group, Poland applied the same sampling density for seed as that of the previous growing period (0.7 ha/sample) and increased the density for ware from 34 ha/sample to 20 ha/sample. Bulgaria, which was also moved to the first group, continued to apply sampling densities similar to those of the previous growing period, 1.9 ha/sample for seed and 31.5 ha/sample for ware potatoes. The average sampling density of seed potatoes in this group (1.8 ha/sample) was similar to that of the previous season (1.9 ha / sample). Some of the MS in the first group are close to or a little above this average, whilst Greece, Italy and United Kingdom are significantly below. Portugal Romania and Poland have the highest densities of seed potato testing, while Germany, Hungary and the Netherlands follow.

In ware potato production, the average sampling density of the MS in group 1 (41.8 ha/sample) increased significantly compared to the previous season (54.4 ha/sample). Poland and Slovakia continued their efforts and still have the highest sampling rates followed by Bulgaria, Romania, Greece, and the Netherlands. Further improvement in sampling densities of ware potatoes compared to the previous season could be noticed in Portugal.

Sampling rates, similar to those of the previous growing season, were applied for seed and ware potatoes in the second and third groups. In the second group the average sampling densities were 1.7 ha and 113 ha / sample for seed and ware potatoes respectively. Sweden continued improving its sampling density in seed potatoes. Ireland after an eighth season without findings has stabilised its surveying efforts. Survey efforts in the third group are also diverse; the average sampling densities were 3.8 ha and 42.9 ha / sample for seed and ware potatoes respectively. Estonia, Cyprus and Lithuania were considerably above the EU average for seed potatoes and Malta and Lithuania for ware.

In water and other hosts

Table 8 shows the survey activity in water and in hosts other than potato. The relevance of such sampling depends on the use of surface water for irrigation or spraying, the risk of flooding, the presence of wild hosts such as *Solanum dulcamara*, the growing of other hosts (e.g. tomato), and previous findings of the bacterium in the area. It is thus difficult from the information supplied to gauge and compare the efforts done in sampling water and other hosts. The geographical distribution of the samples is also essential if all relevant watercourses/production areas are to be covered. In table 8, "general survey" samples cannot be separated from samples taken to investigate outbreaks or delimit an infested watercourse.

The majority of MS conduct the surveys every year, focusing on cultivated and wild hosts. In some MS very little or no survey activity outside potatoes has taken place. An explanation for this is that in some of these countries, irrigation with surface water is uncommon or non-existent. In other MS, testing of water is an essential element in the surveying activity for the bacterium. Thus, Belgium, Czech Republic, Germany, Hungary, the Netherlands, and the United Kingdom continue to analyse a high number of water samples, as does Poland where the first findings of *R. solanacearum* in potato crop occurred in 2014. Most other MS also regularly check their water bodies.

3.2. Detection/outbreaks

Potatoes

Table 12 shows the number of infected lots found in each Member State since 1995. Six MS found brown rot during 2015/2016 season, all in ware potato lots. In Poland, the bacterium occurred for a second season with 0.01% incidence in ware potatoes. After its first outbreak in 2012 the bacterium was found again in Czech Republic (incidence 1.35%). In Romania, after three successive growing seasons with recurrent outbreaks (2010-2012), no findings have occurred during the last three growing periods. In Belgium, Hungary, Portugal, and Spain the pathogen occurred again.

Table 11 shows the incidence of brown rot in these MS. As for ring rot, it is calculated as the number of positive lots as a percentage of samples analysed. The overall incidence in the EU is in general very low, and much lower than for ring rot, with findings in ware potatoes only resulting in ca. 0.078% total EU disease incidence (0.076% in the last growing period).

In general, when compared to the last growing season the situation remained stable for most MS affected except Czech Republic and Spain where findings increased significantly. Brown rot outbreaks occurred again in ware potatoes in Belgium, Hungary, Portugal, and Poland. In contrast, after a single finding in 2008, Austria found no outbreaks for the seventh year in a row.

Following the ware potato findings of 2009 the bacterium was not found in the United Kingdom or in Sweden for the sixth consecutive year. In Ireland, intensive sampling of domestically produced potatoes and of all marketed seed potatoes prior to planting did not reveal infection, thus the 2007 findings in this country remain the only ones and the bacterium has been eradicated.

The situation has somewhat deteriorated in Hungary, where slightly decreased sampling density in ware potatoes revealed three positive lots. In this region of the EU, Czech Republic had seven new occurrences whilst in Slovakia all potato production remains free from brown rot since 2010. Eight more findings occurred in the ware potato production in Spain.

No brown rot outbreak occurred in the Netherlands during the last four growing seasons. It appears that the specific measures imposing restrictions on harvesting potatoes from flooded fields and the prohibition of irrigation of seed potato crops with surface water are successful. No brown rot findings occurred during the last growing season in Bulgaria, France, Germany and Greece.

Water and other hosts

Table 8 also shows the number of positive samples from water and other hosts apart from potato. As in the previous surveillance period the bacterium was found in seven MS either in water or in wild host plants (or both). There were no cases of infection in tomato crops. Of the samples taken from surface water in previously affected regions in Italy and Greece, none was found positive. In Belgium, no positive water samples were detected in the border of and outside the protected areas. In addition, of the 35 samples of *S. dulcamara* examined this year none was found to be positive.

In Germany, as in the previous years, the bacterium was found in watercourses showing permanent contamination. Infection was not detected in other plant hosts. However, the bacterium was detected for third time in a sample of material (waste water, abraded potato peel, potato fluid and sand) discarded from a potato starch plant.

In the Netherlands, a total of 24 water samples tested positive out of 1,310 samples taken. *R. solanacearum* was detected in 156 water samples tested in Hungary and in one sample of *S. dulcamara*. One more positive surface water sample was detected in Portugal; no samples from other hosts were taken. In France, the bacterium was found again in both surface water (five positives) and other hosts (two positives). In Spain, 72 samples of surface water were found positive. The bacterium was detected again in three samples taken in Czech Republic; no positive findings occurred in waste water samples. In United Kingdom the bacterium was not detected in samples taken from waste or surface water.

Again this year, there were no findings of the bacterium in Ireland or in Poland in surface or waste water discarded from potato packers or processing factories. The continued survey of waste and/or surface water in Austria, Romania, Slovakia and Slovenia, MS where brown rot findings occurred in the past, did not reveal any positive cases.

The bacterium was also found in *S. dulcamara* tested in France (2 positives) and Hungary (1 positive). Detailed information has also been provided for testing carried out in other hosts, including *S. nigrum*, *S. melongena, Silene* sp., *Bidens* sp., *Rumex obtusifolius*, *Urtica dioica*, and *Capsicum* sp. with no findings. The bacterium was not found in *Pelargonium* plants tested in Germany and United Kingdom.

3.3. Interceptions

No interceptions of potato consignments with brown rot were notified.

3.4. Conclusions on *R. solanacearum*

Survey efforts are still uneven across the EU, even when taking into account the phytosanitary situation in various MS. Figure 3 shows the overall number of tests in seed potato and samples positive to brown rot in the EU since 2006.

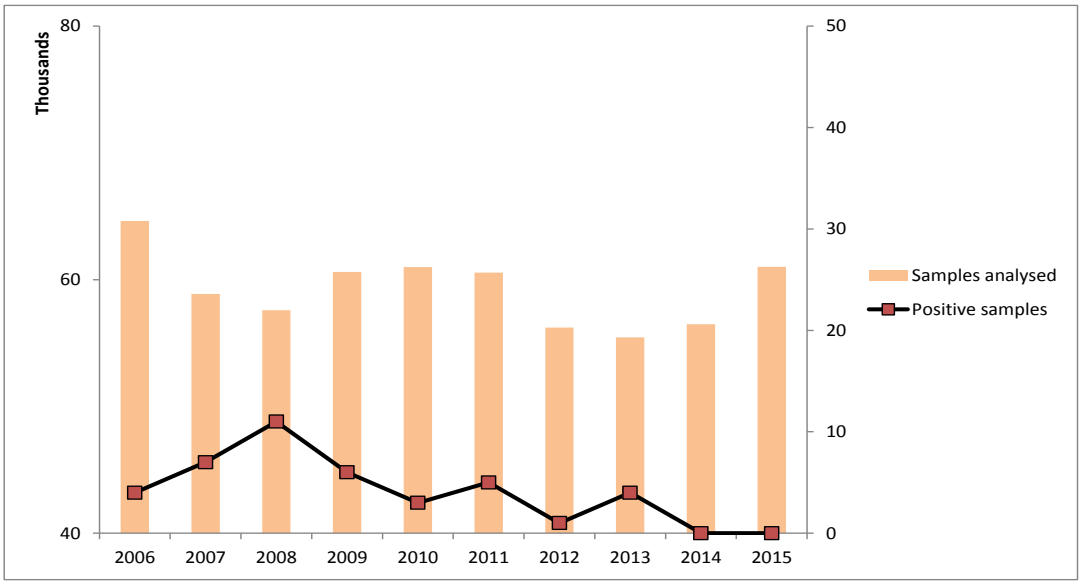

Figure 3. Overall number of tests in seed potato and samples positive to brown rot in the EU since 2006

In the case of seed potatoes, most MS take one sample either from one lot or from 25 tonnes, which resulted in an average sampling density of 1.8 ha/sample in the 2015/2016 season (2.0 in the previous season). In the case of ware potatoes, the average sampling density increased somewhat to 46.5 ha/sample (58.6 in the last season). Figure 4 shows the overall number of tests in ware potato and samples positive to brown rot in the EU since 2006.

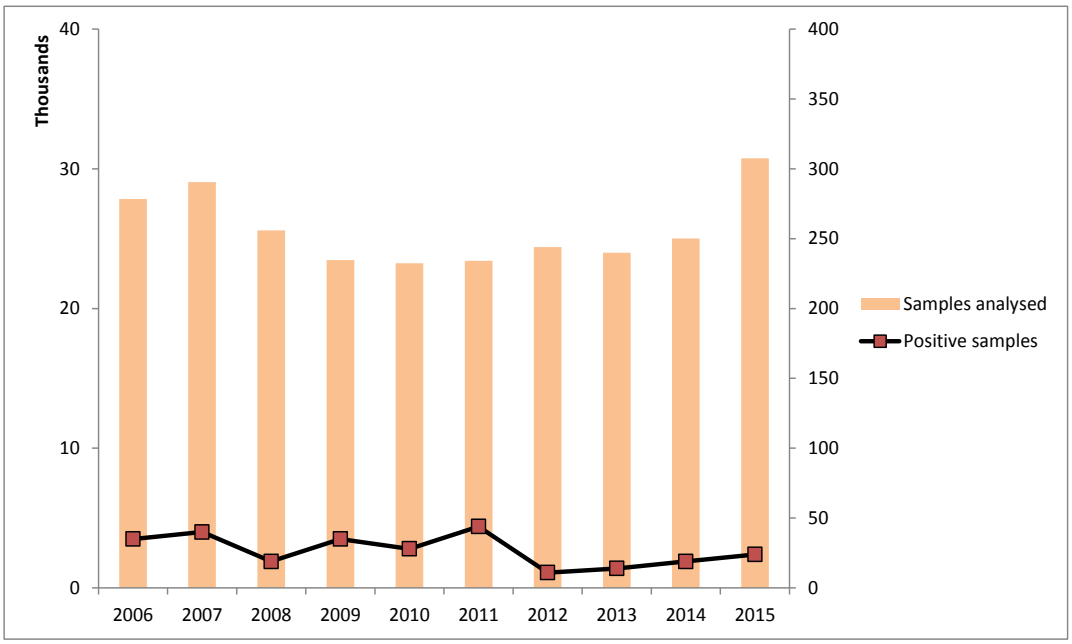

Figure 4. Overall number of tests in ware potato and samples positive to brown rot in the EU since 2006

In two countries with a small to medium potato production Czech Republic and Spain, the situation has deteriorated compared to the last growing season. In the Netherlands both seed and ware production remained without findings for the fourth year in a row. Although in some countries the pathogen is found in surface waters, limited irrigation or strict measures and control of contaminated watercourses result in reduced risk for contamination of crops. There were no outbreaks in tomatoes.

Except for Czech Republic and Spain, it seems that the situation has not worsened in any other MS. Findings during the previous growing season in Bulgaria, France, Germany and Greece were not repeated this season. Hungary, Poland and Portugal still need to manage with continuous findings of the pathogen. It is positive that the pathogen did not appear in Romania after it was last found in 2012.

The overall incidence in potatoes in the EU (0.078%) has slightly increased compared to the last growing season (0.076%). Contributing to this is the repetition of findings in Czech Republic and Spain and the increased sampling efforts carried out in the EU, particularly in the MS that have been a long-time affected by the disease.

4. SITUATION IN SWITZERLAND

Switzerland submitted survey results for seed potatoes (no data regarding ware potatoes production was received). Some 1,516 ha of seeds, both basic and certified, were cultivated in 2015. In total, 145 samples were taken; that gives the sampling density rate some 10 ha per sample (the EU average is less than 2 ha/sample). Samples are tested for the two bacteria in parallel; no positives were found. Both crops and tubers are routinely inspected during the vegetation period and after harvest. There are no data whether or not tests of surface water or of host plants other than potatoes are carried out for the presence of *R. solanacearum*.

Switzerland also checks consignments of imported potatoes, both seeds and ware. All imported seed lots are checked. During the last season, 286 samples of seeds (from Austria, Belgium, France Germany and the Netherlands) were visually inspected and then laboratory tested for both bacteria. No sample was positive. In addition, 788 samples of ware potatoes were visually inspected. The vast majority of them had originated from Germany, France, the Netherlands, Italy, Spain, Israel and Egypt. Again, no infection was found.

5. LIST OF TABLES

Table 1: Potato production area in the EU in 2015 (in ha)

(source: Member States)

Member State	Seed	Ware	Total
Austria	1.508,95	18.859,00	20.367,95
Belgium	2.284,85	78.620,44	80.905,29
Bulgaria	254,15	11.993,85	12.248,00
Croatia	52,81	7.500,00	7.552,81
Cyprus	75,11	5.000,00	5.075,11
Czech Republic	2.854,90	19.857,00	22.711,90
Denmark	4.785,00	37.174,00	41.959,00
Estonia	203,86	5.800,00	6.003,86
Finland	1.014,70	21.000,00	22.014,70
France	19.314,00	149.500,00	168.814,00
Germany	15.814,00	222.444,00	238.258,00
Greece	339,13	21.462,40	21.801,53
Hungary	198,00	18.000,00	18.198,00
Ireland	238,00	8.567,00	8.805,00
Italy	306,00	41.026,00	41.332,00
Latvia	354,11	26.445,84	26.799,95
Lithuania	124,54	15.578,00	15.702,54
Luxembourg	338,41	185,13	523,54
Malta	0,00	701,00	701,00
Netherlands	36.581,00	115.657,00	152.238,00
Poland	5.657,00	322.305,00	327.962,00
Portugal	9,10	27.334,00	27.343,10
Romania	713,18	44.388,11	45.101,29
Slovakia	488,63	5.506,35	5.994,98
Slovenia	30,29	3.280,00	3.310,29
Spain	2.257,15	63.816,26	66.073,41
Sweden	945,60	23.109,00	24.054,60
United Kingdom	14.397,50	115.202,00	129.599,50
Total	111.139,97	1.430.311,38	1.541.451,35

Surveys for *Clavibacter michiganensis* ssp. *sepedonicus* on the domestic production, harvest 2015

Member State	Type of potatoes	Hectarage	Laboratory testing			Visual checks		Comments
			Number of samples	Density (ha/sample)	Positive lots	Number of samples	Symptomatic samples	
Austria	Seed (pre-basic)	2,81	5	0,56	0	0	0	
	Seed (basic)	390,73	290	1,35	0	253	0	
	Seed (certified)	1.115,41	838	1,33	0	674	0	
	Seed (TOTAL)	**1.508,95**	**1.133**	**1,33**	**0**	**927**	**0**	
	Ware	10.588,00	71	265,62	0	76	0	
	Industrial	8.271,00			0	3	0	
	Other (TOTAL)	**18.859,00**	**71**	**265,62**	**0**	**79**	**0**	
Belgium	Breeding material		5	0,00	0	0	0	
	Seed (pre-basic)	34,26	43	0,80	0	9	0	All lots inspected & sampled during grading
	Seed (basic)	1.791,68	838	2,14	0	578	0	All parcels inspected during growth
	Seed (certified)	458,91	169	2,72	0	155	0	Sampling: pre-basic 10 samples/lot, basic S,SE 1sample/ha
	Seed (TOTAL)	**2.284,85**	**1.055**	**2,17**	**0**	**742**	**0**	(max 4samples/lot), Basic & Certified 1sample/lot
	Farm saved seed	0,00	308		0	168	**0**	1-2 samples/lot
	Ware/industrial potatoes	78.620,44	858	67,43	0	858	**0**	1 sample/lot
	Targeted surveys (ware)		0		0	0	**0**	
	Other (TOTAL)	**78.620,44**	**1.166**	**67,43**	**0**	**1.026**	**0**	
Bulgaria	Seed (pre-basic)			#DIV/0!	0		0	
	Seed (basic)	5,50	10	0,55	0	10	0	
	Seed (certified)	248,65	122	2,04	0	122	0	
	Seed (other)		1		1	1	1	Sample taken during trace back and forward actions
	Seed (TOTAL)	**254,15**	**133**	**1,91**	**1**	**133**	**1**	
	Ware	11.993,85	379	31,65	3	420	0	1. Yakoruda - 1.3 ha; 2. Peshetra - 0.39 ha; 3. Velkovtsi - 1.3 ha
	Industrial		1		1	1	0	Sample taken during inspection in Somokov/potatoes from Tran
	Other		1		0	0	0	Sample taken during trace back and forward actions
	Other (TOTAL)	**11.993,85**	**381**	**31,48**	**4**	**421**	**0**	
Croatia	Seed (certified)	52,81	13	4,06	0	14	0	
	Seed (TOTAL)	**52,81**	**13**	**4,06**	**0**	**14**	**0**	
	Farm saved seed		7	0,00	0	10	0	
	Ware incl. young pots	7.500,00	60	125,00	0	60	0	
	Industrial		40	0,00	0	29	0	
	Other (TOTAL)	**7.500,00**	**107**	**70,09**	**0**	**99**	**0**	
Cyprus	Seed (certified)	75,11	66	1,14	0	66	0	Two field inspections and one inspection during harvest;
	Seed (TOTAL)	**75,11**	**66**	**1,14**	**0**	**66**	**0**	all seed potato fields are inspected
	Ware	5.000,00	224	22,32	0	224	**0**	Fields are selected randomly form all potato producing areas
	Other (TOTAL)	**5.000,00**	**224**	**22,32**	**0**	**224**	**0**	
Czech Republic	Breeding material		24	0,00	0	0	0	
	Seed (pre-basic)	47,90	62	0,77	0	0	0	
	Seed (basic)	234,10	263	0,89	0	0	0	
	Seed (certified)	2.572,90	2.118	1,21	4	0	0	
	Seed (TOTAL)	**2.854,90**	**2.467**	**1,16**	**4**	**0**	**0**	
	Ware & Farm saved seed	16.084,00	311	51,72	0	351	0	
	Industrial	3.773,00	284	13,29	2	201	0	
	Samples of washing/waste water		62	0,00	0	0	0	
	Other (TOTAL)	**19.857,00**	**595**	**33,37**	**2**	**552**	**0**	
Denmark	Seed (pre-basic)	4.785,00	615	0,00	0	0	0	
	Seed (TOTAL)	**4.785,00**	**615**	**7,78**	**0**	**0**	**0**	
	Ware	37.174,00	448	0,00	0	0	0	
	Other (TOTAL)	**37.174,00**	**448**	**82,98**	**0**	**0**	**0**	

Member State	Type of potatoes	Hectarage	Laboratory testing			Visual checks		Comments
			Number of samples	Density (ha/sample)	Positive lots	Number of samples	Symptomatic samples	
Estonia	Seed (pre-basic)	1,79	6	0,30	0	0	0	
	Seed (basic)	0,90	1	0,90	0	0	0	
	Seed (certified)	201,17	242	0,83	1	0	0	
	Seed (TOTAL)	**203,86**	**249**	**0,82**	**1**	**0**	**0**	
	Ware	5.800,00	189	**30,69**	**0**	0	0	
	Other (TOTAL)	**5.800,00**	**189**	**30,69**	**0**	**0**	**0**	
Finland	Seed (pre-basic)	129,20	61	69,00	0	144	0	
	Seed (basic)	403,00	166	12,00	0	163	0	
	Seed (certified)	458,90	238	139,00	0	304	0	
	Other seed	23,60	21	5,00	0	0	0	
	Seed (TOTAL)	**1.014,70**	**486**	**2,09**	**0**	**611**	**0**	
	Ware	15.500,00	338	473,00	2	0	0	
	Industrial	5.500,00	80	68,00	0	0	0	
	Other (TOTAL)	**21.000,00**	**418**	**50,24**	**2**	**0**	**0**	
France	Seed (pre-basic)	2.400,00	3.448	0,70	0	2746	0	
	Seed (basic)	8.292,00	6.059	1,37	0	3747	0	100% of lots and fields visually inspected
	Seed (certified)	8.622,00	3.282	2,63	0	2984	0	
	Seed (TOTAL)	**19.314,00**	**12.789**	**1,51**	**0**	**9.477**	**0**	
	Ware	129.500,00	865	149,71	0	0	0	
	Industrial	20.000,00			0	0	0	
	Other (TOTAL)	**149.500,00**	**865**	**172,83**	**0**	**0**	**0**	
Germany	Breeding material		742	0,00	0	683	0	
	Seed (pre-basic)	521,00	1.241	0,42	0	1.229	0	
	Seed (basic)	5.722,00	3.589	1,59	0	3.100	0	
	Seed (certified)	9.571,00	4.768	2,01	0	4.400	0	
	Seed (in trade)		512	0,00	0	375	0	
	Seed (TOTAL)	**15.814,00**	**10.852**	**1,46**	**0**	**9.787**	**0**	
	Farm saved seed (own production)	180,00	273	0,66	0	243	0	
	Ware/industrial	222.264,00	2.402	92,53	1	44.670	0	
	Other (TOTAL)	**222.444,00**	**2.675**	**83,16**	**1**	**44.913**	**0**	
Greece	Seed (certified)	339,13	41	8,27	0	41	0	
	Seed (TOTAL)	**339,13**	**41**	**8,27**	**0**	**41**	**0**	At leat 2 visual inspections on fields during growing season
	Ware & Industrial outside Crete	19.482,40	320	60,88	0	320	0	
	Ware, Crete	1.980,00	177	11,19	0	177	0	Include FSS data
	Soil		18					
	Other (TOTAL)	**21.462,40**	**497**	**43,18**	**0**	**497**	**0**	
Hungary	Seed (pre-basic)	22,00	33	0,67	0	0	0	
	Seed (basic)	76,00	80	0,95	0	0	0	
	Seed (certified)	93,00	58	1,60	0	0	0	
	Seed (breeding stock)	7,00	11	0,64	0	0	0	
	Seed (TOTAL)	**198,00**	**182**	**1,09**	**0**	**0**	**0**	
	Ware	18.000,00	215	83,72	6	239	2	1-2 Outbreaks recurrent
	Other (TOTAL)	**18.000,00**	**215**	**83,72**	**6**	**239**	**2**	
Ireland	Seed (basic)	238,00	172	1,38	0	800	0	
	Seed (TOTAL)	**238,00**	**172**	**1,38**	**0**	**800**	**0**	
	Ware	8.567,00	306	28,00	0	250	0	
	Other (TOTAL)	**8.567,00**	**306**	**28,00**	**0**	**250**	**0**	

Member State	Type of potatoes	Hectarage	Laboratory testing			Visual checks		Comments
			Number of samples	Density (ha/sample)	Positive lots	Number of samples	Symptomatic samples	
Italy	Seed (certified)	306,00	27	11,33	0	1	0	
	Seed (TOTAL)	**306,00**	**27**	**11,33**	**0**	**1**	**0**	
	Ware	38.000,00	190	164,50	0	525	0	
	Industrial	3.026,00	41		0	69	0	
	Other (TOTAL)	**41.026,00**	**231**	**177,60**	**0**	**594**	**0**	
Latvia	Seed (pre-basic)	5,90	16	0,37	0	0	0	
	Seed (basic)	12,42	7	1,77	0	0	0	
	Seed (certified)	286,23	129	2,22	0	0	0	
	Seed (other)	49,56	12	4,13	0	0	0	Breeders' material
	Seed (TOTAL)	**354,11**	**164**	**2,16**	**0**	**0**	**0**	
	Ware		478		6	0	0	
	Industrial	26.445,84	60	49,71	0	0	0	
	Other		54		1	0	0	
	Other (TOTAL)	**26.445,84**	**592**	**44,67**	**7**	**0**	**0**	Outbreaks of *Cms* of previous years, where SPPS carries out supervision
Lithuania	Seed (pre-basic)	0,74	9	0,08	0	0	0	
	Seed (certified)	123,80	112	1,11	0	0	0	
	Seed (TOTAL)	**124,54**	**121**	**1,03**	**0**	**0**	**0**	
	Ware	15.578,00	774	20,13	15	188	**0**	
	Other (TOTAL)	**15.578,00**	**774**	**20,13**	**15**	**188**	**0**	
Luxembourg	Seed (pre-basic)	1,25	1	1,25	0	0	0	
	Seed (basic)	220,30	90	2,45	0	0	0	
	Seed (certified)	116,86	31	3,77	0	0	0	
	Seed (TOTAL)	**338,41**	**122**	**2,77**	**0**	**0**	**0**	
	Ware (TOTAL)	**185,13**	**5**	**37,03**	**0**	**0**	**0**	
Malta	**Seed (TOTAL)**	**0,00**	**0**	**0,00**	**0**	**0**	**0**	
	Ware	701,00	33	21,24	0	33	0	31 samples collected from open field potatoes
	Other (Tomatoes/Water)	365,00	84	4,35	0	80	0	13 sampling on greenhouse tomatoes 10 tomato seedlings for planting
	Other (TOTAL)	**701,00**	**33**	**21,24**	**0**	**33**	**0**	4 water samples collected from open water reservoirs
Netherlands	Breeding material (+in vitro)		316		0	316	0	
	Seed (pre-basic)	7.311,00	4.980	**5,25**	0	4980	0	
	Seed (basic)	21.171,00	9.970		0	9970	0	
	Seed certified	8.099,00	3.741	**2,16**	0	3741	0	
	Seed (export TC)		633		0	633		
	Seed (TOTAL)	**36.581,00**	**19.640**	**1,86**	**0**	**19.640**	**0**	
	Farm saved seed incl. clone/breed material & material for starch prod.	994,00	836		0	836	0	
	Ware	71.736,00	673	55,52	0	673	0	
	Industrial (for starch)	42.927,00	516		0	516	0	
	Ware other (targeted survey)		58		1	58	0	
	Other (TOTAL)	**115.657,00**	**2.083**	**55,52**	**1**	**2.083**	**0**	
Poland	Variety trials	89,00	879	0,10	0	34	0	
	Seed (pre-basic)	233,00	260	0,90	0	0	0	
	Seed (basic)	1.815,00	2.446	0,74	2	2	0	
	Seed (certified)	3.520,00	4.640	0,76	16	371	0	
	Seed (TOTAL)	**5.657,00**	**8.225**	**0,69**	**18**	**407**	**0**	
	Ware	274.026,00	6.472	42,34	772	4.333	4	
	Industrial	47.475,00	1.994	23,81	40	364	0	
	Other (Farm - saved seed potatoes)	804,00	742	1,08	28	60	0	
	Other (TOTAL)	**322.305,00**	**9.208**	**35,00**	**840**	**4.757**	**4**	

Member State	Type of potatoes	Hectarage	Laboratory testing			Visual checks		Comments
			Number of samples	Density (ha/sample)	Positive lots	Number of samples	Symptomatic samples	
Portugal	Seed (certified)	9,10	17	0,54	0	17	0	
	Seed (TOTAL)	**9,10**	**17**	**0,54**	**0**	**17**	**0**	
	Ware	27.334,00	196	139,46	0	196	0	
	Industrial	0,00	0	#DIV/0!	0	0	0	
	Other (TOTAL)	**27.334,00**	**196**	**139,46**	**0**	**196**	**0**	
Romania	Seed (pre-basic)	0,00	0	#DIV/0!	0	0	0	
	Seed (basic)	45,35	89	0,51	0	80	0	
	Seed (certified)	667,83	1.155	0,58	5	1.014	0	
	Seed (TOTAL)	**713,18**	**1.244**	**0,57**	**5**	**1.094**	**0**	
	Ware	43.665,00	1.200	36,39	55	1.073	0	
	Industrial	723,11	28	25,83	0	38	0	
	Other (managing outbreaks)	0,00	0	#DIV/0!	0	0	0	
	Other (TOTAL)	**44.388,11**	**1.228**	**36,15**	**55**	**1.111**	**0**	
Slovakia	Breeding material							
	Seed (pre-basic)	9,66	11	0,88	0	11	0	
	Seed (basic)	119,70	85	1,41	0	85	0	
	Seed (certified)	359,27	142	2,53	0	142	0	
	Seed (TOTAL)	**488,63**	**238**	**2,05**	**0**	**238**	**0**	
	Ware	5.506,35	264	20,86	3	298	**3**	
	Other (TOTAL)	**5.506,35**	**264**	**20,86**	**3**	**298**	**3**	
Slovenia	Seed (pre-basic)	0,81	14	0,06	0	18	0	
	Seed (basic)	12,17	6	2,03	0	25	0	
	Seed (certified)	17,31	4	4,33	0	21	0	
	Seed (TOTAL)	**30,29**	**24**	**1,26**	**0**	**64**	**0**	
	Ware	3.280,00	61	53,77	0	61	0	
	Other (TOTAL)	**3.280,00**	**61**	**53,77**	**0**	**61**	**0**	
Spain	Seed (pre-basic)	59,41	10	5,94	0	10	0	
	Seed (basic)	553,52	108	5,13	0	108	0	
	Seed (certified)	1.644,22	817	2,01	0	817	0	
	Seed (TOTAL)	**2.257,15**	**935**	**2,41**	**0**	**935**	**0**	
	Ware	63.816,26	427	149,45	0	467	0	Analysis with laboratory method specified in Directive 93/85/EC
	Industrial	0,00	0	#DIV/0!	0	0		
	Other	0,00	0	#DIV/0!	0	0	0	
	Other (TOTAL)	**63.816,26**	**427**	**149,45**	**0**	**467**	**0**	
Sweden	Seed (pre-basic)	0,00	0	#DIV/0!	0	0	0	
	Seed (basic)	181,40	96	1,89	0	160	0	
	Seed (certified)	764,20	299	2,56	0	160	0	
	Seed (TOTAL)	**945,60**	**395**	**2,39**	**0**	**320**	**0**	
	Ware	16.653,00	147	113,29	0	2.500	0	
	Industrial	6.456,00	0	#DIV/0!	0	0	0	
	Other (TOTAL)	**23.109,00**	**147**	**157,20**	**0**	**2.500**	**0**	
United Kingdom	Seed (pre-basic)	221,00	246	0,90	0	0	0	
	Seed (basic)	14.117,00	1.550	9,15	0	828	0	
	Seed (certified)	59,50	32		0	0	0	
	Seed (TOTAL)	**14.397,50**	**1.828**	**7,88**	**0**	**828**	**0**	
	Farm saved seed	600,00	0	#DIV/0!	0	28	0	
	Ware potatoes	114.602,00	253		0	179	0	
	Other (ware)	**115.202,00**	**253**	**455,34**	**0**	**207**	**0**	

TABLE 3: Surveys for *Clavibacter michiganensis* ssp. *sepedonicus* on potato "imports", 2015/2016 season

Member State	Commodity	Number of Samples	Positives	Number of visual checks	Positives	Remarks
Austria	Seed potatoes	101	0	0	0	Mainly from NL and DE
	Other potatoes	16	0	4	0	Mainly from EG
Belgium	Seed potatoes	508	0	508	0	Most from NL
	Other potatoes	264	0	264	0	Mainly from IL, NL, FR and DE
Bulgaria	Seed potatoes	101	0	126	0	Mainly from NL and DE
	Other potatoes	53	3	394	0	Mainly from TR: 3 positives from 2 lots
Croatia	Seed potatoes	93	0	232	0	Mainly from NL and DE
	Other potatoes	10	0	26	0	Mainly from CY, BA and ES
Cyprus	Seed potatoes	222	0	222	0	Mainly from NL
	Other potatoes	10	0	10	0	From IL
Czech Republic	Seed potatoes	39	0	33	0	Mainly from NL and DE
	Other potatoes	72	0	78	0	Mainly from DE, PL and ES
Denmark	Seed potatoes	0	0	0	0	
	Other potatoes	0	0	0	0	
Estonia	Seed potatoes	9	0	0	0	From DE and NL
	Other potatoes	11	0	0	0	From MA, FI, ES, IT, CY and DK
Finland	Seed potatoes	251	0	0	0	From DE, NL, DK, SE and UK
	Other potatoes	0	0	0	0	
France	Seed potatoes	138	0	128	0	Mainly from NL
	Other potatoes	3	0	196	0	From IL and MA
Germany	Seed potatoes	248	0	121	0	Majority from NL and DK
	Other potatoes	22	0	331	0	From EG
Greece	Seed potatoes	365	0	365	0	Most from NL
	Other potatoes	214	0	214	0	From EG and TR
Hungary	Seed potatoes	87	0	0	0	Most from NL, AT and DE
	Other potatoes	9	1	0	0	Most from PL, 1 positive from PL
Ireland	Seed potatoes	88	0	0	0	Mainly from UK, and NL
	Other potatoes	48	0	0	0	From IL and PL
Italy	Seed potatoes	209	0	294	0	
	Other potatoes	218	0	2.300	0	
Latvia	Seed potatoes	47	0	0	0	Mainly from DE and NL
	Other potatoes	10	0	0	0	Mainly from EE, SE and EG
Lithuania	Seed potatoes	29	0	2	0	From PL, DE, LV and NL
	Other potatoes	11	0	0	0	Mainly from MA
Luxembourg	Seed potatoes	67	0	0	0	From BE, DE, NL and F
	Other potatoes	0	0	0	0	
Malta	Seed potatoes	16	0	16	0	Mainly from NL
	Other potatoes	0	0	0	0	
Netherlands	Seed potatoes	139	0	139	0	Mainly from FR, DE and DK
	Other potatoes	151	0	151	0	Mainly from DE and BE
Poland	Seed potatoes	107	0	2	0	Mainly from DE and NL
	Other potatoes	151	1	358	0	From various MS, 1 positive from BE
Portugal	Seed potatoes	76	0	94	0	Mainly from NL and UK
	Other potatoes	30	0	30	0	From FR and ES
Romania	Seed potatoes	215	0	193	0	Most from NL and DE
	Other potatoes	36	1	96	0	Most from PL, 1 positive from PL
Slovakia	Seed potatoes	21	0	21	0	Mainly from DE and NL
	Other potatoes	74	0	74	0	Mainly from CZ, FR, and DE
Slovenia	Seed potatoes	12	0	4	0	Mainly from NL
	Other potatoes	19	0	14	0	Mainly from EG
Spain	Seed potatoes	395	0	583	0	Most from NL and UK
	Other potatoes	75	0	80	0	Most from NL , UK and FR
Sweden	Seed potatoes	12	0	0	0	From NL, DK, DE, and UK
	Other potatoes	0	0	22	0	From IL
United Kingdom	Seed potatoes	952	0	0	0	Most from NL, FR and DE
	Other potatoes	103	0	0	0	Mainly from ES, FR, IL and EG.
EU	**Seed potatoes**	**4.547**	**0**	**3.083**	**0**	
	Other potatoes	**1.610**	**6**	**4.642**	**0**	

TABLE 4: Density of sampling for laboratory testing for *Clavibacter michiganensis* ssp. *sepedonicus* on the domestic potato production, harvest 2015

Member State	Seed potatoes			Ware potatoes		
	Area (ha)	No. of samples	Sampling density (ha per sample)	Area (ha)	No. of samples	Sampling density (ha per sample)
Poland	5.657	8.225	0,69	322.305	9.208	35,00
Latvia	354	164	2,16	26.446	592	44,67
Lithuania	125	121	1,03	15.578	774	20,13
Romania	713	1.244	0,57	44.388	1.228	36,15
Germany	15.814	10.852	1,46	222.444	2.675	83,16
Netherlands	36.581	19.640	1,86	115.657	2.083	55,52
Bulgaria	254	133	1,91	11.994	381	31,48
Spain	2.257	935	2,41	63.816	427	149,45
Slovakia	489	238	2,05	5.506	264	20,86
Estonia	204	249	0,82	5.800	189	30,69
Finland	1.015	486	2,09	21.000	418	50,24
Sweden	946	395	2,39	23.109	147	157,20
Hungary	198	182	1,09	18.000	215	83,72
Greece	339	41	8,27	21.462	497	43,18
Czech Republic	2.855	2.467	1,16	19.857	595	33,37
TOTAL - GROUP 1	67.800	45.372	1,49	937.363	19.693	47,60
Denmark	4.785	615	7,78	37.174	448	82,98
United Kingdom	14.398	1.828	7,88	115.202	253	455,34
France	19.314	12.789	1,51	149.500	865	172,83
Belgium	2.285	1.055	2,17	78.620	1.166	67,43
Austria	1.509	1.133	1,33	18.859	71	265,62
Cyprus	75	66	1,14	5.000	224	22,32
Italy	306	27	11,33	41.026	231	177,60
TOTAL - GROUP 2	42.671	17.513	2,44	445.381	3.258	136,70
Croatia	53	13	4,06	7.500	107	70,09
Malta	0	0		701	33	21,24
Slovenia	30	24	1,26	3.280	61	53,77
Ireland	238	172	1,38	8.567	306	28,00
Luxembourg	338	122	2,77	185	5	
Portugal	9	17	0,54	27.334	196	139,46
TOTAL - GROUP 3	669	348	1,92	47.567	708	67,19
TOTAL EU	111.140	63.233	1,76	1.430.311	23.659	60,46

TABLE 5: Incidence of ring rot in Member States where it occurred in the 2015 harvest

Member State	Type	Total no. of samples	No. of positive lots	No. of Rr cases	Incidence seed	Incidence ware
Bulgaria	seed	133	1	1	0,752%	
	ware	381	4	3		1,050%
Czech Republic	seed	2.467	4	4	0,162%	
	ware	595	2	2		0,336%
Estonia	seed	249	1	1	0,402%	
	ware	189	0	0		0,000%
Finland	seed	486	0	0	0,000%	
	ware	418	2	2		0,478%
Germany	seed	10.852	0	0	0,000%	
	ware	2.675	1	1		0,037%
Hungary	seed	182	0	0	0,000%	
	ware	215	6	2		2,791%
Latvia	seed	164	0	0	0,000%	
	ware	592	7	7		1,182%
Lithuania	seed	121	0	0	0,000%	
	ware	774	15	15		1,938%
Netherlands	seed	19.640	0	0	0,000%	
	ware	2.083	1	1		0,048%
Poland	seed	8.225	18	18	0,219%	
	ware	9.208	840	840		9,123%
Romania	seed	1.244	5	1	0,402%	
	ware	1.228	55	45		4,479%
Slovakia	seed	238	0	0	0,000%	
	ware	264	3	3		1,136%
TOTAL EU-ring rot	seed	44.001	29	25	0,066%	
	ware	18.622	936	921		5,026%
TOTAL EU28	seed	63.233	29	25	0,046%	
	ware	23.659	936	921		3,956%
TOTAL EU27 (-PL)	seed	55.008	11	7	0,020%	
	ware	14.451	96	81		0,664%
TOTAL EU26 (-PL&RO)	seed	53.764	6	6	0,011%	
	ware	13.223	41	36		0,310%

TABLE 6: Surveys for *Clavibacter michiganensis* ssp. *sepedonicus* since 1994 on the domestic potato production

			Harvest																					
Member State			**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Austria	Number of	- seed		56	108	108	117	112	304	684	589	662	632	625	594	578	533	603	602	594	1.224	1.216	1.169	1.133
	Samples	- ware		1	83	83	65	78	79	95	97	91	87	88	96	91	87	99	104	105	75	73	68	71
	- positive	*- seed*							***2***		***1***													
	lots	*- ware*									***1***	***2***												
Belgium	Number of	- seed	120	526	408	351	534	700	1.082	697	1.726	3.930	4.948	3.346	2.535	1.040	925	1.168	1.073	1.038	959	1.135	1.122	1.055
	Samples	- ware	115		114	93	39	242	302	404	476	1.204	2.284	1.691	689	1.188	1.466	1.313	1.282	1.178	1.218	1.228	1.170	1.166
	- positive	*- seed*									***7***													
	lots	*- ware*							***2***		***14***	***7***									***2***			
Bulgaria	Number of	- seed													443	285	275	213	297	301	195	179	169	133
	Samples	- ware													552	672	467	531	466	497	594	503	453	381
	- positive	*- seed*													***2***	***5***	***2***		***1***		***1***			***1***
	lots	*- ware*													***14***	***29***	***9***	***2***	***17***	***9***	***23***	***18***	***1***	***4***
Croatia	Number of	- seed																			32	35	40	13
	Samples	- ware																			132	135	170	107
Cyprus	Number of	- seed										145	108	115	115	108	169	102	94	124	124	67	127	66
	Samples	- ware										167	178	350	346	270	326	266	223	224	170	140	116	224
Czech Republic	Number of	- seed										3.740	3.611	3.378	2.699	2.993	3.129	2.959	2.694	2.814	2.768	2.670	2.872	2.467
	Samples	- ware										2.790	2.133	1.428	1.425	1.177	1.035	799	715	663	648	882	749	595
	- positive	*- seed*										***2***	***2***		***4***			***4***	***4***	***2***	***1***		***5***	***4***
	lots	*- ware*										***11***	***8***	***3***	***3***	***7***	***5***	***2***	***2***	***6***	***2***	***4***	***9***	***2***
Denmark	Number of	- seed	1.732	1.656	1.622	855	1.270	1.480	1.420	1.389	1.371	978	996	985	662	991	780	697	536	541	650	552	579	615
	Samples	- ware	188	225	229	392	379	338	263	335	428	323	309	390	361	367	262	195	148	192	200	242	200	448
	- positive	*- seed*	***8***			***1***	***2***	***6***				***2***												
	lots	*- ware*	***8***	***5***	***7***	***5***	***8***	***3***		***3***	***1***	***1***												
Estonia	Number of	- seed										108	161	263	324	278	228	357	331	413	287	315	339	249
	Samples	- ware										312	242	369	358	269	263	252	170	222	169	171	173	189
	- positive	*- seed*												***1***			***2***							***1***
	lots	*- ware*										***7***	***12***	***13***	***4***	***5***	***4***		***1***	***1***	***1***		***1***	
Finland	Number of	- seed	1.478	1.633	1.189	1.443	1.464	1.731	1.676	1.686	1.596	1.461	1.116	1.482	1.430	1.355	1.379	1.334	1.422	729	743	729	711	486
	Samples	- ware	914	1.000	1.221	1.905	2.051	1.350	1.535	1.947	1.243	769	1.147	1.693	853	1.238	1.497	1.107	903	970	569	541	437	418
	- positive	*- seed*							***3***															
	lots	*- ware*	***33***	***?***	***106***	***68***	***29***	***22***	***16***	***11***	***16***	***23***	***34***	***18***	***16***	***23***	***17***	***5***	***11***	***7***	***2***	***5***	***3***	***2***
France	Number of	- seed	*2.481*	2.299	2.785	7.446	3.257	7.157	7.011	7.610	6.762	5.921	8.979	8.246	8.333	8.386	8.459	9.193	12.057	9.082	9.315	9.041	9.325	12.789
	Samples	- ware		45	215	323	308	363	1657	1078	1216	744	1020	988	960	955	949	993	883	901	943	899	620	865
	- positive	*- seed*					***1***								***2***									
	lots	*- ware*			***1***							***3***										***1***		
Germany	Number of	- seed	3.488	3.877	5.081	10.987	12.352	12.174	12.102	11.301	11.275	11.850	12.554	11.746	10.860	11.044	10.562	11.175	11.157	10.943	10.629	10.246	10.824	10.852
	Samples	- ware	1.250	530	892	2.966	4.195	4.569	5.261	4.578	4.920	4.886	5.304	3.652	3.126	2.825	2.670	2.427	2.421	2.072	2.258	2.039	2.749	2.675
	- positive	*- seed*	***5***	***7***	***19***	***37***	***28***	***36***	***44***	***16***	***6***	***5***	***8***	***4***	***1***	***3***	***2***	***1***	***6***	***1***	***3***			
	lots	*- ware*	***10***	***9***	***45***	***55***	***49***	***106***	***76***	***58***	***58***	***69***	***19***	***25***	***7***	***4***	***5***	***3***	***3***	***2***	***1***		***8***	***1***
Greece	Number of	- seed			152	138	130	73	77	60	69	83	59	60	77	119	120	130	121	86	77	77	84	41
	Samples	- ware	37	114	31	515	966	466	742	688	796	681	675	352	363	332	371	537	429	475	416	520	632	497
	- positive	*- seed*				***4***																		
	lots	*- ware*				***95***	***243***	***183***	***117***	***41***	***75***	***75***		***10***	***31***	***10***	***2***							
Hungary	Number of	- seed										616	566	244	215	214	205	153	197	149	167	191	183	182
	Samples	- ware										688	362	357	317	345	344	300	198	200	162	173	232	215
	- positive	*- seed*											***1***											
	lots	*- ware*																					***3***	***6***
Ireland	Number of	- seed	266	251	234	250	236	215	308	125	120	146	110	145	188	712	736	786	480	432	359	244	197	172
	Samples	- ware	130	213	242	252	215	260	309	378	381	402	229	341	339	261	518	169	295	340	277	344	344	306
Italy	Number of	- seed			51	439		49	23	167	189	170	213		318	154	214	58	28	27	29	40	25	27
	Samples	- ware			172	1.067	68	54	123	274	282	271	366		236	414	239	334	299	216	282	271	268	231
	- positive	*- seed*																						
	lots	*- ware*															***2***							
Latvia	Number of	- seed										183	185	139	207	163	178	163	145	142	143	140	171	164
	Samples	- ware										128	752	500	596	1.410	979	759	711	804	769	713	636	592
	- positive	*- seed*										***10***	***2***		***1***									
	lots	*- ware*										***12***	***74***	***44***	***57***	***147***	***74***	***33***	***24***	***23***	***21***	***23***	***17***	***7***
Lithuania	Number of	- seed										209	404	124	153	187	196	180	152	155	169	128	157	121
	Samples	- ware										613	304	989	1.705	1.439	1.210	623	850	883	949	773	847	774
	- positive	*- seed*										***1***				***1***			***1***					
	lots	*- ware*										***42***	***12***	***78***	***110***	***52***	***40***	***13***	***40***	***30***	***39***	***12***	***21***	***15***
Luxembourg	Number of	- seed	12	*111*	253	254	133	208	168	399	183	227	225	148		79	190	303	244	150	113	178	222	122
	Samples	- ware	5		5	4	22	0	0	0	4	4	8	6		12	0	1		0	0	0	0	5
Malta	Number of	- seed										0	0	0	0	0	0	0	0	0	0	0	0	0
	Samples	- ware										0	0	0	0	154	34	43	41	34	39	39	32	33
Netherlands	Number of	- seed	2.943	3.275	3.601	4.246	4.816	3.806	62.775	59.352	57.245	20.972	61.199	38.402	28.087	21.982	21.629	22.890	20.809	22.677	19.745	18.418	18.643	19.640
	Samples	- ware		300	1.829	2.941	2.267	3.833	6.613	4.454	6.603	5.886	8.950	3.055	2.263	3.458	3.877	3.178	2.330	2.555	3.121	3.426	2.067	2.083
	- positive	*- seed*					***1***		***2***	***3***	***1***		***4***			***1***	***1***		***7***	***1***	***1***	***0***		
	lots	*- ware*						***3***	***5***	***2***		***1***				***1***	***1***	***6***	***3***	***16***	***8***	***3***		***1***
Poland	Number of	- seed										7.685	8.186	5.927	6.197	7.552	6.992	7.224	6.892	8.173	8.143	7.243	7.975	8.225
	Samples	- ware										11.818	15.291	15.243	13.785	12.643	10.421	9.543	8.389	8.597	9.073	7.535	7.955	9.208
	- positive	*- seed*										***309***	***310***	***93***	***59***	***70***	***45***	***28***	***9***	***15***	***17***	***5***	***8***	***18***
	lots	*- ware*										***2.607***	***3.416***	***2.937***	***2.224***	***1.750***	***1.449***	***1.027***	***899***	***909***	***937***	***917***	***815***	***840***
Portugal	Number of	- seed	5		100	34	84	188	108	65	39	38	45	37	8	10	6	2	0	0	0	0	15	17
	Samples	- ware	109	127	364	286	259	68	209	233	162	135	94	100	133	102	132	166	141	110	88	95	121	196
Romania	Number of	- seed													470	586	526	507	930	688	456	633	1.080	1.244
	Samples	- ware													790	1.020	1.621	1.358	1.432	1.569	1.415	1.729	1.602	1.228
	- positive	*- seed*													***6***	***13***	***25***	***16***	***19***		***9***	***1***	***4***	***5***
	lots	*- ware*													***33***	***92***	***85***	***124***	***151***	***104***	***120***	***89***	***101***	***55***
Slovakia	Number of	- seed										350	813	455	266	417	369	251	245	228	217	297	231	238
	Samples	- ware										283	226	696	201	333	333	266	231	201	262	306	306	264
	- positive	*- seed*											***3***	***4***								***1***		
	lots	*- ware*										***8***	***20***	***32***	***1***	***11***	***6***	***5***	***5***	***4***	***1***	***3***	***2***	***3***
Slovenia	Number of	- seed										56	60	41	37	35	36	36	31	36	36	28	28	24
	Samples	- ware										82	92	95	102	81	69	63	72	83	91	91	69	61
Spain	Number of	- seed	216	617	911	748	647	609	471	424	726	641	1.374	1.179	1.105	1.909	1.782	1.766	1.896	1.745	1.113	1.064	1.002	935
	Samples	- ware	89	119	139	159	152	340	161	314	368	419	340	663	641	757	821	785	723	696	498	417	421	427
	- positive	*- seed*	***4***	***7***	***2***				***2***	***2***	***4***	***3***	***2***			***1***		***2***				***1***		
	lots	*- ware*	***1***	***5***	***3***	***2***		***2***	***10***	***5***	***7***	***5***	***2***	***8***	***2***		***2***	***2***			***1***			
Sweden	Number of	- seed		354	401	204	275	222	249	330	344	413	428	394	452	363	403	388	386	350	339	309	263	395
	Samples	- ware		515	434	903	620	485	488	864	712	529	499	532	462	394	438	404	331	482	362	55	202	147
	- positive	*- seed*								***2***														
	lots	*- ware*	***14***	***5***	***12***	***8***	***1***	***2***	***4***	***13***	***8***	***7***	***1***			***4***				***1***					
United Kingdom	Number of	- seed	103	118	191	351	137	389	1.148	1.282	1.279	906	1.883	1.832	1.929	1.982	2.024	1.860	1.813	1.831	1.687	1.720	1.704	1.828
	Samples	- ware	195	208	236	356	171	235	232	301	255	326	505	491	541	567	610	613	594	561	595	555	360	253
	- positive	*- seed*										***1***												
	lots	*- ware*											***2***								***6***			
EU TOTAL	Number of	- seed	12.844	14.773	17.087	27.854	25.452	29.113	88.922	85.571	83.513	61.490	108.855	79.313	67.704	63.522	62.045	64.498	64.632	63.448	59.719	56.895	59.257	63.233
	Samples	- ware	3.032	3.397	6.206	12.245	11.777	12.681	17.974	15.943	17.943	33.551	41.397	34.069	31.240	32.774	31.039	27.124	24.381	24.830	25.375	23.895	22.999	23.659
	- positive	*- seed*	***17***	***14***	***21***	***42***	***32***	***42***	***53***	***23***	***19***	***333***	***332***	***102***	***75***	***94***	***77***	***51***	***47***	***19***	***32***	***8***	***17***	***29***
	lots	*- ware*	***66***	***24***	***174***	***233***	***330***	***321***	***230***	***133***	***180***	***2.880***	***3.600***	***3.168***	***2.502***	***2.135***	***1.701***	***1.222***	***1.156***	***1.112***	***1.164***	***1.075***	***981***	***936***

NOTE: in order to compare across years and Member States, findings of ring rot are indicated as number of positive lots. This information has, however, not been available in some of the older data and the number indicated is then the number of infected farms or of positive samples. Therefore, the figures for positive findings must be used with caution.

Surveys for *Ralstonia solanacearum* on the domestic 2015 potato crop

Surveys for Ralstonia solanacearum on the domestic 2015 potato crop

Member State	Type of potatoes	Hectarage	Laboratory testing			Visual inspections				Comments
			no. of samples	density (ha/sample)	no. positive lots	tuber samples	no. positive	crop inspections	no. positive	
Austria	Seed (pre-basic)	2,81	5	0,56	0	0	0	10	0	
	Seed (basic)	390,73	290	1,35	0	253	0	580	0	
	Seed (certified)	1.115,41	838	1,33	0	674	0	806	0	
	Seed (TOTAL)	**1.508,95**	**1.133**	**1,33**	**0**	**927**	**0**	**1.396**	**0**	
	Ware potatoes	10.588,00	71	265,62	0	76	0	17	0	
	Industrial	8.271,00			0	3	0	15	0	
	Other (TOTAL)	**18.859,00**	**71**	**265,62**	**0**	**79**	**0**	**32**	**0**	
Belgium	Breeding material		5	0,00	0	0	0	0	0	All lots inspected & sampled during grading
	Seed (pre-basic)	34,26	43	0,80	0	9	0	2/field	0	All plots visually inspected during growth
	Seed (basic)	1.791,68	838	2,14	0	578	0	2/field	0	
	Seed (certified)	458,91	169	2,72	0	155	0	2/field	0	
	Seed (TOTAL)	**2.284,85**	**1.055**	**2,17**	**0**	**742**	**0**	2/field	**0**	
	Farm saved seed		308		0	168	0	0	0	1-2 samples/lot
	Ware/industrial potatoes	78.620,44	858	61,61	1	858	0	0	0	1 sample/lot
	Targeted surveys (ware)		110		0	110	0	0	0	
	Other (TOTAL)	**78.620,44**	**1.276**	**61,61**	**1**	**1.136**	**0**	**0**	**0**	
Bulgaria	Seed (pre-basic)	0,00		#DIV/0!	0		0	0	0	
	Seed (basic)	5,50	10	0,55	0	10	0	3	0	
	Seed (certified)	248,65	122	2,04	0	122	0	113	0	
	Seed (other)		1		0	1		0		Sample taken during trace back and forward actions
	Seed (TOTAL)	**254,15**	**133**	**1,91**	**0**	**133**	**0**	**116**	**0**	
	Ware	11.993,85	380	31,56	0	421	0	422	0	
	Industrial		1		0	1	0	0	0	
	Other (TOTAL)	**11.993,85**	**381**	**31,48**	**0**	**422**	**0**	**422**	**0**	
Croatia	Seed (certified)	52,81	20	2,64	0	24	0	30	0	
	Seed (TOTAL)	**52,81**	**20**	**2,64**	**0**	**24**	**0**	**30**	**0**	
	Farm saved seed			#VALUE!	0		0		0	
	Industrial		40		0	29	0	0	0	
	Ware potatoes incl.young pots	7.500,00	60		0	60		101	0	
	Other (TOTAL)	**7.500,00**	**100**	**75,00**	**0**	**89**	**0**	**101**	**0**	
Cyprus	Seed (certified)	75,11	66	1,14	0	66	0	132	0	Two field inspections in the leaves and one tuber at harvest; all fields inspected
	Seed (TOTAL)	**75,11**	**66**	**1,14**	**0**	**66**	**0**	**132**	**0**	
	Ware potatoes	5.000,00	224	22,32	0	224	0	224	0	Fields are selected randomly from all potato producing areas
	Other (TOTAL)	**5.000,00**	**224**	**22,32**	**0**	**224**	**0**	**224**	**0**	
Czech Republic	Breeding material		1	0,00	0	0	0	0	0	
	Seed (pre-basic)	47,90	0	#DIV/0!	0	0	0	0	0	
	Seed (basic)	234,10	263	0,89	0	0	0	0	0	
	Seed (certified)	2.572,90	0	#DIV/0!	0	0	0	0	0	
	Seed (TOTAL)	**2.854,90**	**264**	**10,81**	**0**	**0**	**0**	**0**	**0**	
	Ware & Farm saved seed	16.084,00	322	49,95	2	350	0	318	0	
	Industrial	3.773,00	198	19,06	5	61	0	35	0	
	Other (TOTAL)	**19.857,00**	**520**	**38,19**	**7**	**411**	**0**	**353**	**0**	
Denmark	Seed (pre-basic)				0	0	0	0	0	
	Seed (basic)	4.785,00	615	7,78	0	0	0	0	0	
	Seed (certified)					0	0	0	0	
	Seed (TOTAL)	**4.785,00**	**615**	**7,78**	**0**	**0**	**0**	**0**	**0**	
	Ware potatoes	37.174,00	448	82,98	0	0	0	0	0	
	Other (TOTAL)	**37.174,00**	**448**	**82,98**	**0**	**0**	**0**	**0**	**0**	

Member State	Type of potatoes	Hectarage	Laboratory testing			Visual inspections				Comments
			no. of samples	density (ha/sample)	no. positive lots	tuber samples	no. positive	crop inspections	no. positive	
Estonia	Seed (pre-basic)	1,79	6	0,30	0	0	0	0	0	
	Seed (basic)	0,90	1	0,90	0	0	0	0	0	
	Seed (certified)	201,17	242	0,83	0	0	0	0	0	
	Seed (TOTAL)	**203,86**	**249**	**0,82**	**0**	**0**	**0**	**0**	**0**	
	Ware potatoes	5.800,00	189	30,69	0	0	0	0	0	
	Other (TOTAL)	**5.800,00**	**189**	**30,69**	**0**	**0**	**0**	**0**	**0**	
Finland	Seed (pre-basic)	129,20	61	2,12	0	144	0	0	0	
	Seed (basic)	403,00	166	2,43	0	163	0	0	0	
	Seed (certified)	458,90	238	1,93	0	304	0	0	0	
	Other seed	23,60	0	#DIV/0!	0	0	0	0	0	
	Seed (TOTAL)	**1.014,70**	**465**	**2,18**	**0**	**611**	**0**	**0**	**0**	
	Ware	15.500,00	338	45,86	0	0	0	0	0	
	Industrial	5.500,00	80	35,23	0	0	0	0	0	
	Other (TOTAL)	**21.000,00**	**418**	**50,24**	**0**	**0**	**0**	**0**	**0**	
France	Seed (pre-basic)	2.400,00	3.448	0,70	0	2746	0	8238	0	
	Seed (basic)	8.292,00	6.059	1,37	0	3747	0	11241	0	
	Seed (certified)	8.622,00	3.282	2,63	0	2984	0	5968	0	
	Seed (TOTAL)	**19.314,00**	**12.789**	**1,51**	**0**	**9.477**	**0**	**25.447**	**0**	
	Ware potatoes	129.500,00	865	149,71	0	0	0	0	0	
	Industrial	20.000,00			0	0	0	0	0	
	Other (TOTAL)	**149.500,00**	**865**	**172,83**	**0**	**0**	**0**	**0**	**0**	
Germany	Breeding material	0,00	742	0,00	0	683	0	275	0	
	Seed (pre-basic)	521,00	1.241	0,42	0	1.229	0	3.357	0	
	Seed (basic)	5.722,00	3.589	1,59	0	3.100	0	7.615	0	
	Seed (certified)	9.571,00	4.768	2,01	0	4.400	0	8.860	0	
	Seed (samples from trade -DE)	0,00	512	0,00	0	375	0	0	0	
	Seed (TOTAL)	**15.814,00**	**10.852**	**1,46**	**0**	**9.787**	**0**	**20.107**	**0**	
	Farm saved seed (own prod.)	180,00	273	0,07	0	243	0	0	0	
	Ware/industrial potatoes	222.264,00	2.402		0	44.670	0	0	0	
	Other (TOTAL)	**222.444,00**	**2.675**	**83,16**	**0**	**44.913**	**0**	**0**	**0**	
Greece	Seed (certified)	339,13	41	8,27	0	41	0	36	0	
	Seed (TOTAL)	**339,13**	**41**	**8,27**	**0**	**41**	**0**	**36**	**0**	
	Ware outside Crete	19.482,40	309	63,05	0	309	2	0	0	
	Ware, Crete	1.980,00	177	11,19	0	177	0	0	0	
	Industrial		11	0,00	0	11	0	0	0	
	Other (TOTAL)	**21.462,40**	**497**	**43,18**	**0**	**497**	**2**	**0**	**0**	
Hungary	Seed (pre-basic)	22,00	33	0,67	0	0	0	7	0	
	Seed (basic)	76,00	80	0,95	0	0	0	26	0	
	Seed (certified)	93,00	58	1,60	0	0	0	43	0	
	Seed (breeding stock)	7,00	11	0,64	0	0	0	7	0	
	Seed (TOTAL)	**198,00**	**182**	**1,09**	**0**	**0**	**0**	**83**	**0**	
	Ware	18.000,00	215	83,72	3	239	2	429	0	3 Outbreaks
	Other (TOTAL)	**18.000,00**	**215**	**83,72**	**3**	**239**	**2**	**429**	**0**	
Ireland	Seed (pre-basic)			#DIV/0!	0	0	0	0	0	
	Seed (basic)	238,00	172	1,38	0	800	0	3	0	
	Seed (TOTAL)	**238,00**	**172**	**1,38**	**0**	**800**	**0**	**3**	**0**	
	Ware	8.567,00	306	28,00	0	250	0	0	0	
	Other (TOTAL)	**8.567,00**	**306**	**28,00**	**0**	**250**	**0**	**0**	**0**	

Member State	Type of potatoes	Hectarage	Laboratory testing			Visual inspections				Comments
			no. of samples	density (ha/sample)	no. positive lots	tuber samples	no. positive	crop inspections	no. positive	
Italy	Seed (certified)	306,00	27	11,33	0	32	0	233	0	
	Seed (TOTAL)	**306,00**	**27**	**11,33**	**0**	**32**	**0**	**233**	**0**	
	Ware	38.000,00	189	163,79	0	514	0	374	0	
	Industrial	3.026,00	43		0	64	0	75	0	
	Other (TOTAL)	**41.026,00**	**232**	**176,84**	**0**	**578**	**0**	**449**	**0**	
Latvia	Seed (pre-basic)	5,90	16	0,37	0	0	0	0	0	
	Seed (basic)	12,42	7	1,77	0	0	0	0	0	
	Seed (certified)	286,23	129	2,22	0	0	0	0	0	
	Seed (other)	49,56	12	4,13	0	0	0	0	0	Breeders material
	Seed (TOTAL)	**354,11**	**164**	**2,16**	**0**	**0**	**0**	**0**	**0**	
	Ware potatoes	26.445,85	478	49,16	0	0	0	0	0	
	Industrial		60		0	0	0	0	0	
	Other		54							Outbreaks of CMS of previous years
	Other (TOTAL)	**26.445,85**	**592**	**44,67**	**0**	**0**	**0**	**0**	**0**	
Lithuania	Seed (pre-basic)	0,74	9	0,08	0	0	0	0	0	
	Seed (basic)	0,00	0	#DIV/0!	0	0	0	0	0	
	Seed (certified)	123,80	112	1,11	0	0	0	2	0	
	Seed (TOTAL)	**124,54**	**121**	**1,03**	**0**	**0**	**0**	**2**	**0**	
	Ware potatoes	15.578,00	774	20,13	0	188	0	39	0	
	Other (TOTAL)	**15.578,00**	**774**	**20,13**	**0**	**188**	**0**	**39**	**0**	
Luxembourg	Seed (pre-basic)	1,25	1	1,25	0	0	0	12	0	
	Seed (basic)	220,30	90	2,45	0	0	0	140	0	
	Seed (certified)	116,86	31	3,77	0	0	0	94	0	
	Seed (TOTAL)	**338,41**	**122**	**2,77**	**0**	**0**	**0**	**246**	**0**	
	Ware	185,13	5	37,03	0	0	0	8	0	
	Other (TOTAL)	**185,13**	**5**	**37,03**	**0**	**0**	**0**	**0**	**0**	
Malta	Seed (certified)	0,00	0	#DIV/0!		0	0	0	0	
	Seed (TOTAL)	**0,00**	**0**	**#DIV/0!**	**0**	**0**	**0**	**0**	**0**	
	Ware potatoes	701,00	33	21,24	0	33	0	31	0	31 samples from open field potatoes
	Other (TOTAL)	**701,00**	**33**	**21,24**	**0**	**33**	**0**	**31**	**0**	
Netherlands	Breeding material (+in-vitro)		316		0	316	0	0	0	
	Seed (pre-basic)	7.311,00	4.980	1,87	0	4.980	0	0	0	
	Seed (basic)	21.171,00	9.970		0	9.970	0	0	0	
	Seed (certified)	8.099,00	4.374	1,85	0	4.374	0	0	0	
	Seed (TOTAL)	**36.581,00**	**19.640**	**1,86**	**0**	**0**	**0**	**0**	**0**	
	Farm saved seed incl. material for starch prod.	994,00	836		0	836	0	0	0	
	Ware	71.736,00	673	51,22	0	673	0	0	0	
	Industrial for starch	42.927,00	516		0	516	0	0	0	
	Targeted survey/investigations		233		0	233	0	0	0	
	Other (TOTAL)	**115.657,00**	**2.258**	**51,22**	**0**	**0**	**0**	**0**	**0**	
Poland	Variety trials	89,00	879	0,10	0	34	0	26	0	
	Seed (pre-basic)	233,00	260	0,90	0	0	0	55	0	
	Seed (basic)	1.815,00	2.446	0,74	0	2	0	556	0	
	Seed (certified)	3.520,00	4.640	0,76	0	371	0	1.762	0	
	Seed (TOTAL)	**5.657,00**	**8.225**	**0,69**	**0**	**407**	**0**	**2.399**	**0**	
	Ware	274.026,00	8.051	34,04	2	4.487	0	2.019	0	
	Farm saved seed	804,00	742	1,08		60	0	193	0	
	Industrial	47.475,00	7.292	6,51	0	364	0	517	0	
	Other (TOTAL)	**322.305,00**	**16.085**	**20,04**	**2**	**4.911**	**0**	**2.729**	**0**	

Member State	Type of potatoes	Hectarage	Laboratory testing			Visual inspections				Comments
			no. of samples	density (ha/sample)	no. positive lots	tuber samples	no. positive	crop inspections	no. positive	
Portugal	Seed (certified)	9,10	17	0,54	0	17	0	24	0	
	Seed (TOTAL)	**9,10**	**17**	**0,54**	**0**	**17**	**0**	**24**	**0**	
	Ware	27.334,00	196	139,46	3	196	0	288	0	Two positives in Central Region. One positive in one island.
	Industrial	0,00	0	#DIV/0!	0	0	0	0	0	
	Other (TOTAL)	**27.334,00**	**196**	**139,46**	**3**	**196**	**0**	**288**	**0**	
Romania	Seed (pre-basic)	0,00	0	#DIV/0!	0	0	0	0	0	
	Seed (basic)	45,35	89	0,51	0	80	0	15	0	
	Seed (certified)	667,83	1.155	0,58	0	1.014	0	149	0	
	Seed (TOTAL)	**713,18**	**1.244**	**0,57**	**0**	**1.094**	**0**	**164**	**0**	
	Ware	43.665,00	1.200	36,39	0	1.073	0	0	0	
	Industrial	723,11	28	25,83	0	28	0	0	0	
	Other (TOTAL)	**44.388,11**	**1.228**	**36,15**	**0**	**1.101**	**0**	**0**	**0**	
Slovakia	Breeding material			#VALUE!	0		0		0	
	Seed (pre-basic)	9,66	11	0,88	0	11	0	22	0	
	Seed (basic)	119,70	85	1,41	0	85	0	124	0	
	Seed (certified)	359,27	142	2,53	0	142	0	186	0	
	Seed (TOTAL)	**488,63**	**238**	**2,05**	**0**	**238**	**0**	**332**	**0**	
	Ware potatoes	5.506,35	264	20,86	0	298	0	191	0	
	Other (TOTAL)	**5.506,35**	**264**	**20,86**	**0**	**298**	**0**	**191**	**0**	
Slovenia	Seed (pre-basic)	0,81	14	0,06	0	18	0	78	0	
	Seed (basic)	12,17	6	2,03	0	25	0	75	0	
	Seed (certified)	17,31	4	4,33	0	21	0	63	0	
	Seed (TOTAL)	**30,29**	**24**	**1,26**	**0**	**64**	**0**	**216**	**0**	
	Ware potatoes	3.280,00	61	53,77	0	61	0	0	0	
	Other		0	#DIV/0!	0	0	0	0	0	
	Other (TOTAL)	**3.280,00**	**61**	**53,77**	**0**	**61**	**0**	**0**	**0**	
Spain	Seed (pre-basic)	59,41	10	5,94	0	10	0	186	0	
	Seed (basic)	553,52	108	5,13	0	108	0	1.105	0	
	Seed (certified)	1.644,22	817	2,01	0	817	0	2.063	0	
	Seed (TOTAL)	**2.257,15**	**935**	**2,41**	**0**	**935**	**0**	**3.354**	**0**	
	Ware(inc. farm cons. & potato waste)	63.816,26	440	145,04	8	468	0	404	0	Positives:4 in CyL, 3 in Estremadura, 1 in Rioja
	Industrial	0,00	0		0		0		0	
	Other (TOTAL)	**63.816,26**	**440**	**145,04**	**8**	**468**	**0**	**404**	**0**	
Sweden	Seed (pre-basic)	0,00	0	#DIV/0!	0	0	0	0	0	
	Seed (basic)	181,40	96	1,89	0	160	0	0	0	
	Seed (certified)	764,20	299	2,56	0	160	0	0	0	
	Seed (TOTAL)	**945,60**	**395**	**2,39**	**0**	**320**	**0**	**0**	**0**	
	Ware	16.653,00	147	157,20	0	2.500	0	0	0	
	Industrial	6.456,00			0	0	0	0	0	
	Other (TOTAL)	**23.109,00**	**147**	**157,20**	**0**	**2.500**	**0**	**0**	**0**	
United Kingdom	Seed (pre-basic)	221,00	246	0,90	0	1	0	577	0	
	Seed (basic)	14.117,00	1.550	9,11	0	815	0	2.480	0	
	Seed (certified)	59,50	32		0	0	0	65	0	
	Seed (TOTAL)	**14.397,50**	**1.828**	**7,88**	**0**	**816**	**0**	**3.122**	**0**	
	Farm saved seed	600,00	0	#DIV/0!	0	28	0	0	0	
	Ware potatoes	114.602,00	253		0	179	0	549	0	
	Other (TOTAL)	**115.202,00**	**253**	**455,34**	**0**	**207**	**0**	**549**	**0**	

TABLE 8: Surveys for *Ralstonia solanacearum* in water and non-potato hosts in 2015

Member State	Water sampling				Tomatoes or other hosts						Comments
	Waste water/soil (processing)		Surface water		Other hosts		Tomatoes				
	no. of samples	no. positive	no. of samples	no. positive	no. samples	no. positive	no. inspections	no. plants inspected	no. lab. tests	no. positive	
Austria	0	0	8	0	8	0	19	72.920	10	0	Other hosts - different host plants including tomatoes intended for production. Water samples from rivers
Belgium	50	0	400	0	35	0	0	0	0	0	Other hosts: *Solanum dulcamara* in rivers ouside P.A.
Bulgaria	0	0	19	0	8	0	42	9,62	1	0	Other hosts: *Solanum nigrum*
Croatia	10	0	2	0	0	0	41	33,64	48	0	
Cyprus	0	0	0	0	0	0	0	0	0	0	
Czech Republic	62	0	214	3	238	0	22	0			Other hosts: Urtica dioica, Silene, Bidens, Solanum nigrum, Rumex obtusifolius
Denmark	0	0	0	0	0	0	0	0	0	0	Irrigation has no significance in Denmark
Estonia	0	0	0	0	0	0	0	0	0	0	Irrigation has no significance in Estonia
Finland	0	0	0	0	0	0	0		0	0	Irrigation has no significance in Finland
France	0	0	113	5	290	2	0		0	0	Other hosts: Solanum dulcamara and Urtica dioica
Germany	134	2	65	20	293	0	2	0.1 ha	0	0	Hosts include: S.dulcamara(18), *Pelargonium* (62), Tomato plants (20), Urtica dioica(2), Others (191), Sludge (1); 2 positives in soil tara
Greece	0	0	10	0	143	0	63	765.049	73	0	6 surface water (river) samples from Preveza, samples from Messenia
Hungary	0	0	563	156	16	1	29	8,6 ha	6	0	*1 positive in S. dulcamara. Pelargonium (6 visual inspections) all negative*
Ireland	23	0	1	0	0	0	0	0	0	0	*Potato washers (13), processing plants (3), holding tanks (3), drains (4) and rivers (1)*
Italy	0	0	66	0	58	0	320	ND	180	0	Capsicum annum, Sol. Melongena
Latvia	0	0	26	0	26	0	0	0	0	0	Other hosts: *S. dulcamara* (19) and *S. nigrum (7)*
Lithuania	0	0	24	0	0	0	0	0	0	0	
Luxembourg	0	0	0	0	0	0	0	0	0	0	
Malta	0	0	4	0	70	0	0	0	10	0	Tomatoes: 57 samples from open field tomato crops and 13 samples collected from greenhouses. 4 water samples from open water reservoirs.
Netherlands	0	0	1.310	24	30	0	0	0	100	0	
Poland	0	0	4.676	0	36	0	367	37.335.716	0	0	
Portugal	0	0	7	1	0	0	0	0	0	0	1 positive sample in irrigation water.
Romania	0	0	2	0	1	0	109	24851,7	0	0	Other hosts: Solanum dulcamara
Slovakia	0	0	20	0	4	0	9	12.37 ha	3	0	Other hosts: *Solanum dulcamara*
Slovenia	1	0	14	0	0	0	202	1.800.830	2	0	
Spain	0	0	157	72	2	0	54	28,612,075	4.551	0	Positives in rivers: Henares (Castilla La Mancha); Adaja, Camesa, Cega, Orbigo and Tormes (Castilla y Léon)
Sweden	0	0	0	0	0	0	0	0	0	0	Irrigation has no significance in Sweden
United Kingdom	43	0	609	0	9	0	0	0	0	0	Other hosts: *Solanum dulcamara (7), Pelargonium* spp (2).
TOTAL EU	**323**	**2**	**8.310**	**281**	**1.267**	**3**	**1.279**		**4.984**	**0**	

TABLE 9: Surveys for *Ralstonia solanacearum* on potato "imports", 2015/2016 season

Member State	Commodity	Number of samples	Positives	Number of visual checks	Positives	Remarks
Austria	Seed potatoes	101	0	0	0	Mainly from NL and DE
	Other potatoes	16	0	8	0	Mainly from EG
Belgium	Seed potatoes	508	0	508	0	Most from NL, FR and LU
	Other potatoes	264	0	264	0	Mainly from DE, FR, NL, IL and MA
Bulgaria	Seed potatoes	101	0	126	0	Mainly from NL and DE
	Other potatoes	53	0	394	0	Mainly from TR
Croatia	Seed potatoes	93	0	232	0	Mainly from NL and DE
	Other potatoes	26	0	326	0	Mainly from EG
Cyprus	Seed potatoes	222	0	222	0	Mainly from NL and DE
	Other potatoes	0	0	0	0	
Czech Republic	Seed potatoes	39	0	37	0	Mainly from DE and NL
	Other potatoes	65	0	75	0	Mainly from DE, PL and ES
Denmark	Seed potatoes	0	0	0	0	
	Other potatoes	0	0	0	0	
Estonia	Seed potatoes	9	0	0	0	Mainly from DE and NL
	Other potatoes	9	0	0	0	Mainly from MA and FI
Finland	Seed potatoes	251	0	0	0	Most from DE, NL, DK, and SE
	Other potatoes	0	0	0	0	
France	Seed potatoes	138	0	138	0	Mainly from NL
	Other potatoes	3	0	196	0	From IL and MA
Germany	Seed potatoes	248	0	121	0	Mainly from NL, DK, FR and UK
	Other potatoes	22	0	331	0	Mainly from EG
Greece	Seed potatoes	365	0	365	0	Most from NL
	Other potatoes	214	0	214	0	From EG
Hungary	Seed potatoes	87	0	0	0	Most from NL and DE
	Other potatoes	9	0	0	0	Mainly from PL
Ireland	Seed potatoes	88	0	0	0	Mainly from UK and NL
	Other potatoes	48	0	0	0	From IL and PL
Italy	Seed potatoes	212	0	286	0	Mainly from NL
	Other potatoes	220	0	2.306	0	Mainly from EG
Latvia	Seed potatoes	47	0	0	0	Mainly from DE and NL
	Other potatoes	10	0	0	0	
Lithuania	Seed potatoes	29	0	2	0	From various MS
	Other potatoes	11	0	0	0	
Luxembourg	Seed potatoes	67	0	0	0	From BE, DE and NL
	Other potatoes	0	0	0	0	
Malta	Seed potatoes	16	0	16	0	Mainly from NL and UK
	Other potatoes	0	0	0	0	
Netherlands	Seed potatoes	139	0	139	0	Mainly from DE, DK and FR
	Other potatoes	151	0	151	0	
Poland	Seed potatoes	107	0	3	0	Mainly from DE and NL
	Other potatoes	156	0	359	0	From various MS; includes EG and MO
Portugal	Seed potatoes	76	0	94	0	Mainly from NL and UK
	Other potatoes	30	0	30	0	From FR and ES
Romania	Seed potatoes	215	0	193	0	Most from NL and DE
	Other potatoes	36	0	96	0	Largely from PL
Slovakia	Seed potatoes	21	0	21	0	Mainly from NL, DE and CZ
	Other potatoes	74	0	74	0	Mainly from CZ, FR, DE and NL
Slovenia	Seed potatoes	12	0	4	0	Mainly from NL
	Other potatoes	19	0	14	0	Mainly from EG
Spain	Seed potatoes	395	0	583	0	Most from NL and UK
	Other potatoes	75	0	80	0	Most from NL , UK and FR
Sweden	Seed potatoes	5	0	0	0	From NL
	Other potatoes	0	0	22	0	Mainly from IL
United Kingdom	Seed potatoes	952	0	0	0	Most from NL and FR
	Other potatoes	103	0	0	0	Mainly from FR, ES, EG, and IL
EU	**Seed potatoes**	**4.543**	**0**	**3.090**	**0**	
	Other potatoes	**1.614**	**0**	**4.940**	**0**	

TABLE 10: Density of sampling for laboratory testing for *Ralstonia solanacearum* on the domestic potato production, harvest 2015

Member State	Seed potatoes			Ware potatoes		
	Area (ha)	No. of samples	Sampling density (ha per sample)	Area (ha)	No. of samples	Sampling density (ha per sample)
Bulgaria	254	133	1,9	11.994	381	31,5
Netherlands	36.581	19.640	1,9	115.657	2.258	51,2
Germany	15.814	10.852	1,5	222.444	2.675	83,2
Spain	2.257	935	2,4	63.816	440	145,0
Hungary	198	182	1,1	18.000	215	83,7
Poland	5.657	8.225	0,7	322.305	16.085	20,0
Portugal	9	17	0,5	27.334	196	139,5
Romania	713	1.244	0,6	44.388	1.228	36,1
Slovakia	489	238	2,1	5.506	264	20,9
Greece	339	41	8,3	21.462	497	43,2
Italy	306	27	11,3	41.026	232	176,8
Belgium	2.285	1.055	2,2	78.620	1.276	61,6
United Kingdom	14.398	1.828	7,9	115.202	253	455,3
TOTAL - GROUP 1	79.300	44.417	1,8	1.087.755	26.000	41,8
Austria	1.509	1.133	1,3	18.859	71	265,6
Czech Republic	2.855	264	10,8	19.857	520	38,2
France	19.314	12.789	1,5	149.500	865	172,8
Ireland	238	172	1,4	8.567	306	28,0
Slovenia	30	24	1,3	3.280	61	53,8
Sweden	946	395	2,4	23.109	147	157,2
TOTAL - GROUP 2	24.892	14.777	1,7	223.172	1.970	113,3
Croatia	53	20	2,6	7.500	100	75,0
Cyprus	75	66	1,1	5.000	224	22,3
Denmark	4.785	615	7,8	37.174	448	83,0
Estonia	204	249	0,8	5.800	189	30,7
Finland	1.015	465	2,2	21.000	418	50,2
Latvia	354	164	2,2	26.446	592	44,7
Lithuania	125	121	1,0	15.578	774	20,1
Luxembourg	338	122	2,8	185	5	
Malta	0	0		701	33	21,2
TOTAL - GROUP 3	6.949	1.822	3,8	119.384	2.783	42,9
EU	111.140	61.016	1,8	1.430.311	30.753	46,5

TABLE 11: Incidence of brown rot in Member States where it occurred in the 2015 harvest

Member State		Total no. of samples	No. of positive lots	No. of Br cases	Incidence seed	Incidence ware
Belgium	seed	1.055	0	0	0,000%	
	ware	1.276	1	1		0,078%
Czech Republic	seed	264	0	0	0,000%	
	ware	520	7	7		1,346%
Hungary	seed	182	0	0	0,000%	
	ware	215	3	3		1,395%
Poland	seed	8.225	0	0	0,000%	
	ware	16.085	2	2		0,012%
Portugal	seed	17	0	0	0,000%	
	ware	196	3	3		1,531%
Spain	seed	935	0	0	0,000%	
	ware	440	8	8		1,818%
TOTAL EU-brown rot	seed	10.678	0	0	0,000%	
	ware	18.732	24	17		0,128%
TOTAL EU28	seed	61.016	0	0	0,000%	
	ware	30.753	24	24		0,078%

TABLE 12: Surveys for *Ralstonia solanacearum* since 1995 on the domestic potato production

Member State			Harvest 1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Austria	Number of Samples	- seed	54	108	120	117	112	298	653	589	662	632	625	594	578	533	603	602	594	1.224	1.216	1.169	1.133
		- ware	73	83	87	65	78	81	94	92	91	87	88	96	91	87	99	104	105	75	73	68	71
		- seed																					
		- ware														***1***							
Belgium	Number of Samples	- seed	1.251	854	342	500	700	1.082	701	1.043	3.731	4.948	3.346	2.535	1.040	925	1.168	1.073	1.038	959	1.135	1.122	1.055
		- ware	89	193	101	73	499	408	411	649	1.123	1.629	1.527	663	1.285	1.375	1.446	1.406	1.268	1.281	1.322	1.282	1.276
	- positive lots	- seed					***1***																
		- ware					***8***			***11***			***1***			***1***							***1***	***1***
Bulgaria	Number of Samples	- seed												443	412	275	213	295	301	195	179	169	133
		- ware												552	618	474	533	443	484	612	518	454	381
	- positive lots	- seed																					
		- ware																				***2***	
Croatia	Number of Samples	- seed																		32	35	51	20
		- ware																		132	135	159	100
Cyprus	Number of Samples	- seed									145	108	115	115	89	169	102	94	124	124	67	127	66
		- ware									167	178	350	346	270	326	266	223	224	170	140	116	224
Czech Republic	Number of Samples	- seed									3.740	355	246	246	306	379	385	300	451	475	2.671	391	264
		- ware									150	131	116	163	153	173	101	338	386	784	929	523	520
	- positive lots	- seed																					
		- ware																		***1***			***7***
Denmark	Number of Samples	- seed	346	440	460	282	237	528	240	248	291	996	740	662	430	780	697	536	541	650	552	579	615
		- ware	68	190	144	42	30	150	167	316	283	393	390	361	348	262	195	148	192	200	242	200	448
Estonia	Number of Samples	- seed									102	161	263	324	278	228	357	331	413	287	315	339	249
		- ware									312	242	369	358	269	263	252	170	222	169	171	173	189
Finland	Number of Samples	- seed		50	60	91	101	38	80	100	150	150	150	150	150	150	146	205	305	358	325	401	465
		- ware		102	140	86	0	0	0	100	68	80	122	60	55	25	166	846	970	569	541	437	418
France	Number of Samples	- seed	7.342	5.187	16.384	5.759	8.809	7.821	7.613	6.762	5.445	8.979	8.246	8.333	8.386	8.459	9.193	12.179	9.082	9.315	9.041	9.325	12.789
		- ware	45	215	323	308	456	1.701	1.078	1.216	744	1.020	988	960	955	949	993	883	901	943	895	624	865
	- positive lots	- seed						***1***	***2***				***1***			***1***	***1***					***0***	
		- ware						***41***		***1***				***1***			***1***		***1***		***1***	***1***	
Germany	Number of Samples	- seed	2.190	4.661	10.758	11.164	11.871	11.816	11.124	10.837	10.772	12.559	11.746	10.860	11.044	10.562	11.183	11.052	10.943	10.630	10.246	10.824	10.852
		- ware	198	670	2.417	3.732	4.688	5.152	4.629	4.555	5.617	5.164	3.652	3.126	2.825	2.667	2.427	2.421	2.058	2.258	2.039	2.690	2.675
	- positive lots	- seed		***3***								***1***					***1***		***1***		***3***		
		- ware		***3***	***2***	***15***	***11***		***5***	***1***	***1***				***1***	***3***		***1***				***2***	
Greece	Number of Samples	- seed		152	138	132	73	77	60	69	83	59	60	77	119	120	130	121	86	77	77	84	41
		- ware	114	31	515	922	466	742	688	796	681	733	352	363	332	351	545	429	475	416	520	622	497
	- positive lots	- seed			***1***									***3***	***1***								
		- ware							***19***	***10***	***4***	***5***		***3***			***3***	***1***	***1***		***1***	***2***	
Hungary	Number of Samples	- seed									616	566	244	215	214	205	153	197	149	167	191	183	182
		- ware									688	362	357	317	345	344	300	198	200	162	173	232	215
	- positive lots	- seed									***10***				***3***	***9***		***1***			***1***		
		- ware									***14***		***24***	***2***	***13***	***3***	***5***	***5***	***5***	***1***	***9***	***3***	***3***
Ireland	Number of Samples	- seed		234	250	236	215	308	125	120	146	110	145	188	712	736	786	480	432	359	244	197	172
		- ware	350	242	252	215	260	309	378	381	372	229	341	339	528	518	169	295	340	277	344	344	306
	- positive lots	- seed													***1***								
		- ware													***2***								
Italy	Number of Samples	- seed				189	77	68	176	262	170	291		361	154	39	54	10	27	29	40	25	27
		- ware			327		54	148	274	307	338	311		229	384	243	326	299	203	283	296	268	232
	- positive lots	- seed							***1***														
		- ware			***2***				***1***			***1***							***1***				
Latvia	Number of Samples	- seed									183	185	139	207	163	178	163	145	142	143	140	171	164
		- ware									140	752	508	596	1.410	979	759	711	804	772	713	636	592
Lithuania	Number of Samples	- seed									209	404	124	153	187	196	180	152	155	169	128	157	121
		- ware									613	304	989	1.705	1.439	1.210	623	850	883	951	773	847	774
Luxembourg	Number of Samples	- seed	111	253	254	133	208	62	399	439	227	225	178		79	190	303	244	150	113	178	222	122
		- ware		5	4		0	0	0	300	4	8	6		12		1						5
Malta	Number of Samples	- seed									0	0		0	0	0	0	0	0	0	0	0	0
		- ware									0	0	66	0	154	34	43	41	34	39	39	32	33
Netherlands	Number of Samples	- seed	45.406	58.920	67.151	55.008	64.403	64.430	59.352	57.245	58.484	61.199	42.819	28.843	21.813	22.069	22.890	20.809	22.477	19.230	17.642	18.643	19.640
		- ware	10.543	5.273	4.126	9.457	5.273	8.024	6.088	6.603	7.250	8.796	3.055	2.263	3.211	2.900	2.680	1.520	1.687	2.392	3.002	2.261	2.258
	- positive lots	- seed	***52***	***8***	***30***	***2***	***26***	***13***	***11***	***6***	***3***	***1***	***1***		***2***	***1***	***1***						
		- ware	***40***	***7***	***32***	***138***	***73***	***15***	***11***	***11***	***4***			***4***			***1***	***1***	***4***				
Poland	Number of Samples	- seed									7.489	8.188	5.920	6.192	7.550	6.517	7.231	6.908	8.201	8.143	7.243	7.983	8.225
		- ware									11.520	15.152	14.922	13.548	12.538	10.385	9.542	8.543	8.601	9.081	7.549	9.961	16.085
	- positive lots	- seed																					
		- ware																				***3***	***2***
Portugal	Number of Samples	- seed		10	34	32	170	17	65	39	38	45	37	8	10	6	2	0	0	0	0	15	17
		- ware		686	286	413	257	196	233	162	135	94	100	133	102	132	166	141	113	88	95	121	196
	- positive lots	- seed																					
		- ware		***43***	***1***	***84***	***49***	***20***	***7***	***5***	***6***	***4***	***2***	***10***	***7***	***1***		***8***	***19***		***1***	***2***	***3***
Romania	Number of Samples	- seed												470	586	526	507	930	688	456	633	1.080	1.244
		- ware												790	1.020	1.621	1.358	1.432	1.569	1.415	1.726	1.602	1.228
	- positive lots	- seed																***2***	***2***	***1***			
		- ware																	***2***	***2***			
Slovakia	Number of Samples	- seed									350	884	545	266	417	369	251	245	228	217	297	229	238
		- ware									285	277	696	201	333	333	266	231	201	262	306	306	264
	- positive lots	- seed																					
		- ware									***9***	***4***	***8***	***4***	***9***	***4***	***5***	***3***					
Slovenia	Number of Samples	- seed									56	60	41	37	35	36	36	31	36	36	28	28	24
		- ware									82	92	95	102	81	69	63	72	61	91	91	69	61
	- positive lots	- seed																					
		- ware																***1***	***2***				
Spain	Number of Samples	- seed	1.009	979	773	647	609	457	423	723	632	1.374	1.179	1.102	1.909	1.765	1.765	1.896	1.760	1.138	1.064	1.002	935
		- ware	25	132	171	152	386	178	243	353	389	326	637	660	768	890	794	723	703	503	641	416	440
	- positive lots	- seed	***1***	***4***								***1***		***1***					***2***				
		- ware	***2***	***4***			***11***	***3***	***4***	***13***	***7***	***4***	***6***	***11***	***8***	***6***	***18***	***8***	***9***	***7***	***2***	***3***	***8***
Sweden	Number of Samples	- seed	81	395	38	81	70	249	300	308	195	168	175	260	218	226	228	312	350	14	41	263	395
		- ware		14	8	11	2	190	525	243	192	192	212	245	45	51	163	168	159	113	360	202	147
		- seed																					
		- ware															***2***						
United Kingdom	Number of Samples	- seed		191	448	171	398	1.653	1.282	1.246	928	1.883	1.832	1.983	1.982	1.957	1.873	1.841	1.882	1.687	1.720	1.704	1.828
		- ware	227	236	306	171	234	232	305	266	339	505	491	541	567	610	606	594	569	352	363	360	253
	- positive lots	- seed															***3***						
		- ware	***1***				***4***						***2***										
EU TOTAL	Number of Samples	- seed	57.790	72.434	97.210	74.542	88.053	88.904	82.593	80.030	94.844	104.529	78.915	64.624	58.861	57.595	60.599	60.988	60.555	56.227	55.448	56.483	61.016
		- ware	11.732	8.072	9.207	15.647	12.683	17.511	15.113	16.339	31.501	36.965	30.334	27.825	29.037	25.581	23.461	23.229	23.412	24.390	23.996	25.005	30.753
	- positive lots	- seed	***53***	***15***	***31***	***2***	***27***	***14***	***14***	***6***	***13***	***3***	***2***	***4***	***7***	***11***	***6***	***3***	***5***	***1***	***4***	***0***	***0***
		- ware	***42***	***57***	***37***	***237***	***152***	***79***	***47***	***52***	***45***	***18***	***43***	***35***	***40***	***19***	***35***	***28***	***44***	***11***	***14***	***19***	***24***

NOTE: in order to compare across years and Member States, findings of R. solanacearum are indicated as number of positive lots. This information has, however, in some cases not been available and the number indicated is then the number of infected fields, of infected farms or of positive samples. Therefore, the figures for positive findings must be used with caution.

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