

The spread of the potato blight in the Russian Empire, 1846 to 1852*

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Abstract

Recent scholarship has immensely increased our understanding of the spread of the potato blight in Western Europe in the 1840s, but its presence in Eastern Europe and in Russia has been neglected. The aim of this paper is first to look at the spread of the potato blight in the Baltic provinces from whence it started to spread throughout the Russian Empire. Second, this study shows the impact of the disease on the agricultural policies of the central government at St Petersburg as well as on the scope of potato cultivation. The main consequence of the potato blight was a delay in the adoption of mass potato cultivation and consumption in Russia of at least a decade. The potato was supposed to shield the peasants against famine but the arrival of blight caused economic crisis.

One of the main driving forces behind the spread of potato crops in Europe was the belief that the potato could solve the problem of frequent cereal crop failures.¹ Well into the mid-nineteenth century, a crop failure affected some part of the Russian Empire in virtually every year. Thus the need to find a solution to subsistence crises was permanently on the agenda for St Petersburg.² The first order issued by Catherine II in 1765 on the introduction of the potato crop in the Russian Empire strongly emphasized the great benefits and reliability of the potato in the event of cereal crop failures and bread shortages.³ In issuing her order, Catherine II was obviously inspired by the Prussian potato edicts of Frederick II from the 1740s and 1750s.⁴ Furthermore, in the eighteenth-century literature from the Baltic provinces,

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¹ A. Bourke, *The visitation of God? The potato and the Irish famine* (1993), pp. 12–14; C. Ó Gráda, *Black '47 and beyond. The great Irish famine in history, economy, and memory* (1999), pp. 20–1.

² N. M. Druzhinin, *Gosudarstvennye krest'jane i reforma P. D. Kiseleva, II, Realizatsija i posledstvija reformy [State peasants and the reform of P. D. Kiselev, II, Realization and aftermath of the reforms]* (1958), p. 223.

³ *Polnoe sobranie zakonov Rossiiskoi imperii* [hereafter PSZ], *sobranie pervoe [Complete law collection of*

the Russian Empire, first part] (1830), no. 12,406 (31 May 1765). For the order of 1765 see V. S. Lehnovich, *K istorii kul'tury kartofelja v Rossii [On the history of the potato culture in Russia]*, in *Materialy po istorii zemledelija SSSR, II [Materials on the agriculture of USSR, II]* (1956), pp. 279–93.

⁴ See A. Humm, 'Friedrich II. und der Kartoffel-anbau in Brandenburg-Preussen', in F. Göse (ed.), *Friedrich der Große und die Mark Brandenburg. Herrschaftspraxis in der Provinz* (2012), pp. 183–215.

the potato was frequently mentioned as a means to solve the annual famine season suffered by the peasantry.⁵

However, in the first half of the nineteenth century the diet in Russia was still so overwhelmingly based on grain that even as late as the 1840s it was still not self-evident to the peasantry that the potato was a highly nutritious food which could substitute for bread in the event of grain shortages or famine.⁶ In 1840 the Emperor Nicholas I returned to the idea that the potato could be a means to combat famines. The promotion of potato growing has been seen as the most determined effort made to encourage innovation in agriculture under Nicholas I.⁷

In 1846, however, a devastating potato disease hit the Russian Empire. By 1849, thirty-three Russian provinces were already affected and by 1851 the epidemic had spread over the whole of European Russia up to the Urals in the east and possibly to some places in Siberia and Ussuri Krai.⁸ This was a huge shock to Russia. Until the autumn of 1846 the potato in Russia had been free from any major diseases.⁹ There had been instances of potato crop failures but only due to adverse weather conditions.¹⁰ Most likely this dangerous new disease started to spread in Russia from the Baltic provinces to the province of St Petersburg and then to Finland and other bordering regions.¹¹ The reported course of the disease and its description¹² leaves no doubt that it was part of the same potato (late) blight epidemic (*Phytophthora infestans* [Mont.] de Bary) that had begun to spread from Belgium in 1845 and caused the Great Famine of 1846–49 in Ireland.¹³

The potato blight has been given plenty of attention in the context of the Great Famine and also, more recently, in relation to continental Europe, but its existence in Eastern Europe

⁵ See e.g. J. B. v. Fischer, *Liefländisches Landwirthschaftsbuch auf die Erdgegend von Lief- Est- und Curland* (1753), p. 322; P. Fr. Körber, 'Ueber die jährliche Hungersnoth der lief- und ehstländischen Bauern', in *Der nordischen Miscellaneen*, 8 (1784), p. 86; W. C. Friebe, 'Erster Anfang zur Cultur der liefländischen Bauern', in *Der nordischen Miscellaneen*, 18/19 (1789), pp. 540–3; K. P. M. Snell, *Beschreibung der russischen Provinzen an der Ostsee* (1794), p. 155; J. Kahk, *Die Krise der feudalen Landwirtschaft in Estland (das zweite Viertel des 19. Jahrhunderts)* (1969), p. 31; L. Dumpe, 'Hunger und Notnahrung in Lettland', in K. D. Sievers (ed.), *Hunger und Elend in Ländern des Mare Balticum. Zum Pauperismus im Ostseeraum zwischen 1600 und 1900* (1998), pp. 62–3.

⁶ See R. E. F. Smith, D. Christian, *Bread and salt. A social and economic history of food and drink in Russia* (1984), pp. 8, 200, 278.

⁷ W. M. Pinter, *Russian economic policy under Nicholas I* (1967), pp. 176, 178.

⁸ M. Prishvin, *Kartofel' v polevoj i ogorodnoj kul'ture [The potato in the field and garden]* (1908), pp. 14, 212–13.

⁹ 'Geschichte des Kartoffelbaues in Russland', in

Archiv für wissenschaftliche Kunde von Russland 7 (1849), p. 588; 'Kartofel' v Rossii [The potato in Russia], in *Sovremennik: Literaturnyj Zhurnal* 16 (1849), p. 105; Lehnovich, *K istorii*, p. 388.

¹⁰ E.g. 'Benutzung der erfrorenen und faulenden Kartoffeln', in *Das Inland* 39, 27 Sept. 1839, col. 609–10.

¹¹ 'Geschichte des Kartoffelbaues', p. 588. Mikhail Prishvin also argued that the potato blight started from the Baltic provinces: Prishvin, *Kartofel'*, p. 14.

¹² E.g. J. H. Zigra, 'Ueber die Kartoffelkrankheit in Esthland im Jahre 1846', in *Das Inland*, 9, 5 Mar. 1847, col. 184–6; C. v. Mercklin, 'Kartoffelkrankheit in Livland', in *Correspondenzblatt des Naturforschenden Vereins zu Riga*, 2 (1847), no. 15, pp. 74–6.

¹³ A. Schanbacher, '"The all-absorbing horror of the day": Wahrnehmung und Deutung der Kartoffelkrankheit in Westeuropa 1845–1847', in M. Jakubowski-Tiessen, J. Sprenger (eds), *Natur und Gesellschaft. Perspektiven der interdisziplinären Umweltgeschichte* (2014), 219–42; H. H. Lamb, *Weather, climate and human affairs. A book of essays and other papers* (sec. edn, 2011), p. 168; J. C. Zadoks, 'The Potato murrain on the European continent and the Revolution of 1848', in *Potato Research* 51 (2008), pp. 6, 9.

(beyond Germany) has been but scantily discussed.¹⁴ Mikhail Prishvin and Vadim Lehnovich have contributed a short overview of the spread of the potato blight (in Russian known as *fitofor*), in Russia.¹⁵ The emergence of this disease in the Baltic provinces in the 1840s, from whence it started to spread, has been mentioned even more briefly.¹⁶

This paper argues that the potato blight had a much larger impact on the Russian Empire than has been assumed in the current historiography, even if it did not cause famine in Russia, blight appearing at a time when the potato had yet to be adopted as a staple food. The first part of the paper studies early reports of the potato blight in the Baltic provinces and looks at the expectations that the Russian central government had of potato crops in the 1840s. The second part discusses the longer-term impact that the disease had on potato cultivation in the Russian Empire in the mid-nineteenth century.

I

In the Russian Empire the potato blight came to notice in the summer of 1846 in the province of Estland before the flowering of the early potato varieties.¹⁷ Direct reports on the effect of the blight on potato crops came from the westernmost island and northern part of Estland in the autumn of 1846.¹⁸ In the province of Livland the botanist Karl Eugen von Mercklin found traces of the disease in the potatoes harvested around Riga and Courland (Libau and Goldingen) in the autumn of 1846.¹⁹ In mid-September 1846 diseased potatoes were found for sale in a Tallinn market and following the subsequent report and recommendations from the Department of Medical Affairs the provincial government of Estland banned the selling of diseased potatoes in the markets of Tallinn.²⁰ The official brief on the sowing and harvesting of potato crops in 1846 compiled in the provincial government of Estland included a note stating that the disease had

¹⁴ C. Ó Gráda *et al.* (eds), *When the potato failed. Causes and effects of the 'last' European subsistence crisis, 1845–1850* (2007); P. M. Solar, 'The potato famine in Europe', in C. Ó Gráda (ed.), *Famine 150: commemorative lecture series* (1997), pp. 113–27; Zadoks, 'Potato Murrain', pp. 5–45. Zadoks mentions twice that the blight reached Ukraine and Western Russia but other studies on Europe have not mentioned Eastern Europe. However, the Baltic and Russian case has been acknowledged most recently by A. Schanbacher, *Kartoffelkrankheit und Nahrungskrise in Nordwestdeutschland 1845–1848* (2016).

¹⁵ Prishvin, 'Kartofel'; Lehnovich, *K istorii*.

¹⁶ Kahk, *Die Krise*, p. 164; M. Svarāne, 'Kurzemes un Vidzemes zemnieku saimniecības XIX gs. 40.–50. gados (pēc pagastu arhīvu materiāliem) [Peasant farming of Courland and Livland in the 1840s–1850s (on the materials of parish archives)]', in *Latvijas agrārā vēsture (XVI–XIX gs.). Lauksaimniecība un tirgus feodālisma laikā [Agrarian history of Latvia (16th–19th c.). Agriculture and market in the feudal period]* (1966), pp. 140–1; Kersti Lust, *Võitlus näljaga: 19. sajandi näljahädad Eesti*

külas. Dokumentide kogumik [Struggle with hunger: Relief to the needy during times of famine in nineteenth-century Estonia. Document collection] (2015), p. 28.

¹⁷ Zigra, 'Ueber die Kartoffelkrankheit in Esthland', col. 184.

¹⁸ Estonian Historical Archives [hereafter EHA], 29-1-6495, fo. 371, Aufgabe in Aussaat und Erndte in Kartoffeln auf den gutherrlichen Gütern in dem Insularwieckschen Districte für das Jahr 1846; EHA, 29-1-4107, Acta betreffend die Kartoffelkrankheit in den Jahren 1846 und 1847.

¹⁹ C. E. v. Mercklin, *Die Kartoffelkrankheit in den Ostseeprovinzen Kur-, Liv- und Ehstland in den Jahren 1846 und 1847. Anatomisch-physiologische Untersuchungen* (1848), pp. 5–6, 54. Mercklin also published the first report on the detection of the potato blight in Livland in October 1846 in *Correspondenzblatt des Naturforschenden Vereins zu Riga*, 1846, no. 13.

²⁰ EHA, 29-1-4107, fos. 1–2, Administration of medical affairs of Estland to the civil governor of Estland, 18 Sept. 1846; fo. 3, Civil governor of Estland to the police administration of Tallinn, 18 Sept. 1846.

hit potatoes in some locations, but it is not mentioned as the main cause of the decrease in the potato harvest. A long-lasting summer drought had damaged the growth and yield of potato crops.²¹ Therefore, the potato harvest of 1846 did not seem to have had major losses caused by disease at this point.²² This great drought apparently halted the spread of the blight that year, since the organism needs humidity and water to spread and infect a new plant.²³

The first observations of diseased potato plants in 1847 were made in the Järva district in Estland in the second half of July, when the leaves of the plants wrinkled up and died; spots were later also found on the tubers. Eventually most of the district was struck by the disease so that the potato harvest of 1847 only doubled the number of seed potatoes in size; on some estates not even the seed potatoes were recovered.²⁴ In Estland, besides the district of Järva, the districts of Viru and Harju in the outskirts of Tallinn were also hit by the disease. However, the district physician of Harju found only two cases of potatoes sold with signs of the disease in September 1847.²⁵

In the province of Livland the spread of the potato disease began in late July 1847 in the district of Tartu (initially on the manors of Rojel and Ellistfer).²⁶ The district magistrate of Tartu sent the first alarmed note to the provincial government of Livland on the 'most dangerous manifestations' of the potato disease in the district at the beginning of August in 1847.²⁷ From the district of Tartu the disease quickly spread to the districts of Cēsis, Viljandi and later Pärnu. According to estimations, in the district of Viljandi the disease caused the destruction of at least two-thirds of the harvest and half of the expected crop in the district of Pärnu. By the second half of August of 1847 the first reports on the disease were coming also from the districts of Valga, Võru, Valmiera, and Riga. In many places the potato was harvested before ripening for fear of the disease spreading. In the district of Riga a small quantity of potatoes was harvested only on sandy soils in September 1847.²⁸ According to accounts from

²¹ EHA, 29-1-6495, fo. 377, Sowing and harvest of the potatoes in the province of Estland in 1846.

²² In Estland the potato yield ratio of 1846 was 3.8 to 1 (in 1845 it was 4.5 to 1). At the same time in the district of Saare-Lääne struck by the disease in Estland the yield ration was barely two to one in 1846: EHA, 29-1-6495, fo. 371. Cf. Zigra, 'Ueber die Kartoffelkrankheit in Esthland', col. 184; 29-1-6495, fos. 353, 355, 369, 375v, Sowing and harvest reports of 1846 on the potato from the districts of Ida-Harju, Maa-Lääne, Lõuna-Järva and Lõuna-Harju; 296-4-1408, fo. 82v, District magistrate of Valmiera to the civil governor of Livland, 16 Nov. 1846.

²³ As was similarly the case in the Netherlands in 1846: M. Bergman, 'The potato blight in the Netherlands and its social consequences (1845-1847)', in *International Rev. of Social History* 12 (1967), p. 394; see also Lamb, *Weather*, p. 168; A. Schanbacher, 'Vulnerabilität, Kartoffelkrankheit und Nahrungskrise vor Ort: Das Fürstentum Osnabrück 1845-1847', in D. Collet *et al.* (eds), *Handeln in Hungerkrisen. Neue Perspektiven auf soziale und klimatische Vulnerabilität* (2012), pp. 117, 119.

²⁴ EHA, 31-1-309, fo. 488, District magistrate of

Lõuna-Järva to district physician of Järva, 4 Oct. 1847; 31-1-309, fo. 536, District magistrate of Ida-Järva to district physician of Järva, 8 Aug. 1847; 29-1-4762, fo. 9, Aufgabe der Größe der Aussaat und Erndte der Kartoffeln auf den gutsherrlichen Gütern in dem Districte Süd-Jerwen für das Jahr 1847; EHA, 29-1-4762, fo. 16, District magistrate of Ida-Järva to the civil governor of Estland, 27 Nov. 1847.

²⁵ EHA 31-1-309, fo. 611-611v; EHA, 29-1-4762, fos. 17, 20, Versläge über die Aussaat und Ernte der Kartoffeln pro 1847; EHA, 31-1-309, fos. 47r-v, 712, District physician of Harju to the administration of medical affairs of Estland, 15 Sept. and 4 Dec. 1847.

²⁶ Latvian State Historical Archives [hereafter LSHA], 1-4-1119, fos. 3v-5, Civil governor of Livland to the Baltic governor-general, 25 Aug. 1847.

²⁷ LSHA, 1-4-1119, fos. 1, 10, District magistrate of Tartu to the Baltic governor-general, 2 and 23 Aug. 1847.

²⁸ LSHA 1-4-1119, fos. 3v-4, 11v, Civil governor of Livland to the Baltic governor-general, 25 Aug. and 30 Sept. 1847. In the district of Cēsis the first traces of the blight was found on 2 Aug. 1847.

1847, travellers between Riga and Tartu could see field after field covered only by black and rotten potato plants.²⁹

1847 was the year of the greatest devastation caused by this disease in the Baltic provinces. According to the statistics report of the province the total potato harvest yield in 1847 was only 46 per cent in Livland (317,149 tchetverts) and 60 per cent in Estland (254,818 tchetverts) of the average of the previous five years.³⁰ This was a substantial shortfall in potato yields (comparable to the loss in Flanders or Württemberg but not comparable to Ireland where, in 1846–47, 75–86 per cent of the crop was lost).³¹

The symptoms described of the disease in Estland and Livland were similar to those characteristic of the *phytophthora infestans*: first, a few black or brown spots appear (especially during flowering) which start to expand until the whole plant above ground is affected, turns black and withers in the course of a few days, ‘as if caught by night frost’.³² This process stops the growth of tubers, on which brown spots also appear.³³ A stench of rot or mould comes to pervade the fields.³⁴ Generally the damage caused by the blight on sandy soil is milder and this connection was noted in the very early days of the spread of the blight in the Baltic provinces.³⁵

In January 1847 the journal of the Ministry of the Internal Affairs already noted that the potato disease ‘coincides with the one occurring in Ireland, England, Germany and elsewhere’.³⁶ At the same time, the journal wrongly indicated that it was the ‘Curl’ disease which was spreading through England and Ireland.³⁷ In March 1847 the horticulturist Johann Hermann Zigra wrote in the *Das Inland* weekly, distributed in all three Baltic provinces, that according to the observations by botanists and agronomists, the potato disease that had started to spread in Estland was an epidemic that began in Ireland and had expanded eastwards, that has been identified in all areas of Western Europe, but also in America, the

²⁹ Mercklin, *Die Kartoffelkrankheit in den Ostseeprovinzen*, p. 56.

³⁰ H. Sepp et al. (eds), *Eesti majandusajalugu [Economic history of Estonia]* (1937), p. 387.

³¹ E. Vanhaute, ‘“So worthy and example to Ireland”. The subsistence and industrial crisis of 1845–1850 in Flanders’, in Ó Gráda et al. (eds), *When the pottao failed*, pp. 130, 143; G. Mahlerwein, ‘The consequences of the potato blight in South Germany’, in *ibid.*, pp. 215–6; T. M. Devine, ‘Why the Highlands did not starve. Ireland and Highland Scotland during the potato famine’, also *ibid.*, p. 111.

³² The description of ‘as if caught by night frost’ was a very popular characterization of the disease in Livland at that time, e.g.: Mercklin, *Die Kartoffelkrankheit in den Ostseeprovinzen*, pp. 35, 56; LSHA, 1-4-1119, fo. 3v. Cf. T. P. McIntosh, *The potato: Its history, varieties, culture and diseases* (1927), pp. 194–5; A. O. Hannukala, ‘History and consequences of migrations, changes in epidemiology and population structure of potato late blight, *phytophthora infestans*, in Finland from 1845 to 2011’ (Ph.D thesis, Jokioinen 2012), p. 11.

³³ LSHA, 1-4-1119, fo. 10, District magistrate of Tartu

to the Baltic governor-general, 23 Aug. 1847; EHA, 31-1-309, fo. 47r–v, District physician of Harju to the administration of medical affairs of Estland, 4 Dec. 1847; EHA, 31-1-309, fos. 488, 536, The reports to the district physician of Järva and the district magistrates of Lõuna-Järva and Ida-Järva, 4 and 8 Oct. 1847.

³⁴ LSHA, 1-4-1119, fo. 1, District magistrate of Tartu to the Baltic governor-general, 2 Aug. 1847; 1-4-1119, fo. 3v; Mercklin, *Die Kartoffelkrankheit in den Ostseeprovinzen*, p. 56. Cf. R. N. Salaman, *The history and social influence of the potato* (1949), p. 290.

³⁵ *Revalsche Wöchentliche Nachrichten*, 24 Feb. 1847; cf. Bergman, ‘Potato blight’, p. 394.

³⁶ Zigra, ‘Ueber die Kartoffelkrankheit in Esthland’, col. 184.

³⁷ *Revalsche*; EHA, 29-1-4107, fos. 11–17, Baltic governor-general to the civil governor of Estland, 4 Febr. 1847. Although the potato disease called ‘curl’ that started to spread in the 18th c. was a rather loosely used term for different potato diseases, in fact, the ‘curl’ differed so radically from the blight that they cannot be confused: McIntosh, *Potato*, p. 181; Bourke, *Visitation*, pp. 27, 130, 147.

potato's native land.³⁸ Thus, the simultaneous spread of the disease in Western Europe and its unprecedented character were understood in the Baltic provinces from early on.³⁹

As happened in the rest of Europe, the causes and course of the spread of the disease began to be studied in the Baltic provinces: whether the blight spread faster among early or late sown potatoes, on lower or higher grounds, on new soil or on older fields, on fertilized or unfertilized fields (it was found that the proportion of potato harvest affected by this disease was particularly low on well-fertilized fields).⁴⁰ It was clear that the spread of and damage caused by the potato blight was at that time similar on both demesne and peasant lands. Naturally, an attempt was made to find out which potato varieties suffered the most (the number of potato varieties grown in Livland was already over 80 at the beginning of the 1840s and by the end of this decade it had reached 95).⁴¹ No clear connections were detected anywhere. The cause of the potato disease remained a mystery.⁴² Furthermore, there was a debate on the causes of the blight in the Baltic provinces; the factors discussed included were pests, parasites, a fungus, or the effect of bad air.⁴³ Johann Hermann Zigra claimed that the higher the humidity, the greater the potato rot, and concluded that humid air and land were to be blamed.⁴⁴ It soon became clear that all suggested chemicals for curing the disease were useless and brought nothing but large unnecessary expenditures.⁴⁵ In August 1847 the civil governor of Livland reported to the Baltic governor-general that based on the accounts of local professors, the director of the Imperial Botanical Gardens and reports from abroad, the problem was a lack of proper expertise on how to stop the spread of the disease.⁴⁶

In the summer of 1847 St Petersburg received reports not only from the Baltic provinces but also from other parts of the Russian Empire on the devastation caused by the blight, which had its greatest impact in the westernmost provinces: Grodno, Kaunas, Vilnius, Minsk, Mogilev, Vitebsk, Pskov and Novgorod.⁴⁷ By the 1850s, it had spread to a greater or lesser extent over all European Russia.⁴⁸ In Finland, the first confirmed report on the emergence of the potato blight in Vyborg comes from the autumn of 1845; this was a year before it was noticed in Estland. However, it seems that the actual spread of the disease from southern

³⁸ J. H. Zigra, 'Ueber die Kartoffelkrankheit', in *Das Inland*, 10, 10 Mar. 1847, col. 206–8; Mercklin, *Die Kartoffelkrankheit in den Ostseeprovinzen*, pp. 4–5.

³⁹ See also N. L. Derks, 'Ueber die Kartoffelfäule', in *Das Inland*, 1, 7 Jan. 1847, col. 4–6; 'Ueber die Annahme, daß Pilze die Ursache des Uebels der Kartoffelkrankheit seien, und die Vorschläge, dieselben durch Beitzmittel etc. zu entfernen', in *Das Inland*, 37, 15 Sept. 1847, col. 793.

⁴⁰ EHA, 29-1-4762, fo. 9, Aufgabe der Größe der Aussaat und Erndte der Kartoffeln auf den gutsherrlichen Gütern in dem Districte Süd-Jerwen für das Jahr 1847.

⁴¹ EHA, 1185-1-100, fo. 138, Livonian Public Benefit and Economics Society to the civil governor of Livland, 9 Dec. 1841; 'Geschichte des Kartoffelbaues', p. 583; 31-1-309, fo. 47r-v; 31-1-309, fo. 488, District magistrate of Lõuna-Järva to the district physician of Järva, 4

Oct. 1847; cf. Lehnovich, *K istorii*, pp. 388–9; Bourke, *Visitation*, p. 148.

⁴² The blight was misunderstood until the 1860s and the Frenchman Alexis Millardet discovered a remedy only in 1882: Ó Grada, *Black '47*, p. 21. For the debates on different theories see: Bourke, *Visitation*, pp. 130–9; Schanbacher, 'All-absorbing horror', pp. 227–9.

⁴³ 'Ueber die Annahme', col. 792–6; J. H. Zigra, 'Bemerkungen über die Kartoffelkrankheit', in *Das Inland*, 43, 27 Oct. 1847, col. 1017; Mercklin, *Die Kartoffelkrankheit in den Ostseeprovinzen*, pp. 39–44.

⁴⁴ Zigra, 'Bemerkungen', col. 1017–8.

⁴⁵ Zigra, 'Bemerkungen', col. 1018; Mercklin, *Die Kartoffelkrankheit in den Ostseeprovinzen*, pp. 29–34.

⁴⁶ LSHA, 1-4-1119, fo. 4; see also *Revalsche*.

⁴⁷ Mercklin, *Die Kartoffelkrankheit in den Ostseeprovinzen*, p. 55.

⁴⁸ Lehnovich, *K istorii*, p. 389.

Finland started only in the late summer of 1847 and therefore it could still have originated in Estland.⁴⁹

In 1848 the potato disease had not completely disappeared from the Baltic provinces, but it had weakened. According to the reports by the district magistrates of Estland in 1848, the potato blight was still observable but on a smaller scale than the previous year and the potato harvest was expected to be much better than that of 1847. Potato growing was damaged in 1848 by a long-lasting summer drought and early frosts, which might have also helped stop the spread of the blight. The overall potato yield ratio in Estland was 3.9 to 1, which was quite similar to other years and twice as high as that of 1847.⁵⁰ The potato harvest in Livland in 1848 was also similar to that in the years before 1847.⁵¹ In 1849 the spread and damage caused by the potato blight were once again stronger. It was another excessively humid summer due to incessant rain, and the weather also inhibited the growth of the potato crop in Estland.⁵² In November 1849 the civil governor of Livland noted that according to reports 'the potato disease had again spread almost everywhere' so that in some regions hardly any potato harvesting was done.⁵³

The potato blight was observed locally in the Baltic provinces also over the following years (1850, 1851, and 1852).⁵⁴ In one of the reports circulated in St Petersburg, the potato disease was declared to have disappeared by 1850 in the province of Estland.⁵⁵ This was, however, premature as the disease remained in Estland until at least 1852 in the southern Harju district and especially in the southern Järva district (small-scale damage caused by the potato disease in the southern Järva district was also reported in 1855 and 1857).⁵⁶ In 1851 the Ministry of State Domains in St Petersburg announced that over the very dry summer of the previous year the potato disease had been spotted only in the west and in certain northern provinces. It had already disappeared in other provinces previously hit by the disease.⁵⁷ By the mid-1850s the potato blight epidemic seemed to have largely ended.⁵⁸

⁴⁹ Hannukkala, 'History and consequences', pp. 42–3; A. M. Soininen, *Vanha maataloutemme. Maatalous ja maatalousväestö Suomessa perinnäisen maatalouden loppukaudesta 1720-luvulta 1870-luvulle* [The Old Agriculture. Agriculture and the Rural Population in Finland from the End of the 1720s to the 1870s] (1974), p. 185.

⁵⁰ EHA, 29-1-7337, fos. 5, 7, 13, 26, 28, Akte betreffend die Aussaat und Ernte der Kartoffeln pro 1848.

⁵¹ H. Strods, *Latvijas lauksaimniecības vēsture no vissenākajiem laikiem līdz XX gs. 90. gadiem* [Agrarian history of Latvia from the ancient times to the 1990s] (1992), p. 131.

⁵² EHA, 29-3-718, fos. 4, 7, 11, 22, Akte betreffend die Aussaat und Ernte der Kartoffeln, 1849–59.

⁵³ EHA, 2054-1-1199, not paginated, Civil governor of Livland to the Baltic governor-general, 21 Nov. 1849;

Svarāne, 'Kurzemes un Vidzemes', p. 141.

⁵⁴ See e.g. A. Rost, T. Mäeväli (eds), *Die Kirchenchronik von Kusal* (2014), p. 195.

⁵⁵ Lehnovich, *K istorii*, p. 390.

⁵⁶ EHA, 29-3-718, Akte betreffend die Aussaat und Ernte der Kartoffeln, 1849–59.

⁵⁷ Lehnovich, *K istorii*, p. 390. On the contrary, Prishvin has brought out that in 1851 the potato blight was the harshest all over Russia: Prishvin, *Kartofel'*, pp. 13–4, 213.

⁵⁸ C. E. v. Mercklin, *Nachträgliche Bemerkungen zur Kartoffelkrankheit* (Moscow 1856), p. 3. Also in Finland the first wave of the potato blight lasted until the mid-1850s (the years of 1847, 1848, and 1851 were the severest): Soininen, *Vanha maataloutemme*, p. 185.

II

The potato blight hit the Russian Empire at a very bad moment for the central government. It was one more catastrophic factor to add to the severe cholera epidemic, a general shortfall in grain supply, devastating fires, and the political upheavals in Europe that coincided in the closing years of the 1840s, especially in 1848.⁵⁹ The 1840s saw very poor cereal harvests in many regions but the year 1848 brought the most serious crop failure in the whole empire during the reign of Nicholas I. The Russian economy suffered a great crisis and more than a million people died in the years 1847–51.⁶⁰ However, it is hard to assess to what extent the potato blight played a role in this mortality crisis. Cholera reached its highest intensity in the regions where the potato cultivation was one of the lowest in European Russia; the Don Cossack region, Astrakhan', and Saratov.⁶¹

One thing is clear; the potato blight deflated the great hope held for the potato as a solution to the frequent failures of other crops. As recently as 1840 St Petersburg had launched a new campaign for the promote potato growing all over the Empire.⁶² The introduction of the potato crop was officially presented as the direct will and 'fatherly foresight' of Emperor Nicholas in the 1840s.⁶³ However, the potato campaign should be attributed to the Minister of State Domains, Pavel Kiselev, who saw the potato crop as an important instrument for the subsistence of the peasantry and the relief of poverty. Within the administrative hierarchy, potato cultivation issues fell under his Ministry. The economic policy of Kiselev, who had held the post since 1838, was focused on advancing Russian agriculture, the central aim being to find solutions for the systemic poverty and hunger among the peasantry.⁶⁴ Since the potato as an alternative staple food had been sanctioned by the Russian authorities in 1765 and 1797, Kiselev obviously just returned to a stalled solution from the past.⁶⁵

The orders from the early 1840s clearly indicate that the renewed interest of the government was a response to the cereal crop failures in some Russian provinces in 1839 and 1840.⁶⁶ The promotion of potato growing was seen as the best means for ensuring provisions for the people (*obezpechenija narodnago prodovol'stvija*) in times of grain harvest failures.⁶⁷ Kiselev stated it very clearly, 'The main goal of potato cultivation is ensuring food provision for the population

⁵⁹ A. S. Nifontov, *Rossija v 1848 godu* (1949), pp. 19–26.

⁶⁰ A. S. Ermolov, *Nashi neurozhai i prodovol'stvennyi vopros*, part 1 (1909), pp. 55–6; R. E. McGrew, *Russia and the cholera, 1823–1832* (1965), p. 5.

⁶¹ C. E. Henze, *Disease, health care and government in late imperial Russia. Life and death on the Volga, 1823–1914* (2011), p. 163.

⁶² Smith, Christian, *Bread and salt*, pp. 280, 283; Druzhinin, *Gosudarstvennye krest'jane*, pp. 53, 236, 247; H. Strods, 'Kartupeļu audzēšanas sākums Latvijā XVII gs. beigās – XIX gs. pirmā pusē [The beginning of the potato cultivation in Latvia from the end of the 17th c. to the first half of the 19th c.]', in *Latvijas PSR Zinātņu Akadēmijas Vēstis* 10 (1958), p. 55; 'Kartofel' v Rossii', p. 104; 'Geschichte des Kartoffelbaues', p. 585.

⁶³ E.g. EHA, 1185-1-100, fo. 149r–v, Economic

department of the ministry of the internal affairs to the civil governor of Estland, 24 Feb. 1841; 29-1-6495, fos. 39–41, P. Kiselev to the civil governor of Estland, 17 July 1841.

⁶⁴ Druzhinin, *Gosudarstvennye krest'jane*, pp. 51, 235.

⁶⁵ E. Iu. Ivanova-Malofeeva, *Reforma gosudarstvennoj derevnii v Tambovskoj gubernij (seredina 30-h – sredina 50-h gg. XIX v.)* (2005), p. 84.

⁶⁶ PSZ, *Sobranie vtoroe [Second Part]* (1830–1884), no. 15296, 16 Feb. 1842; EHA, 29-1-6495, fo. 7, List of the circular letters from the ministry of state domains in 1840; A. P. Zablotskii-Desyatovskii, *Graf P. D. Kiselev i ego vremja*, II (1882), pp. 102–3.

⁶⁷ E.g. EHA, 1185-1-100, fo. 149–149v; 29-1-6495, fos. 6v, 75, P. Kiselev to civil governor of Estland, 31 Jan. 1841 and 31 Mar. 1842.

in the case of cereal crop failures or high prices of grain. The question of developing the potato as a raw material or as processed food is secondary.⁶⁸ In his order of 1842, Nicholas I mentioned the potential positive effect of potato crops on the transition to four-field farming as one of the reasons for introducing them.⁶⁹ Indeed, the potato was seen as an improver of land and the diversification of field cultures.⁷⁰ The potato growing campaign also focused on the use of potato as fodder (with particular emphasis on this after 1843–44).⁷¹ Kiselev had been speaking of further uses for the potato as goals in themselves from at least 1842. The potato started to be regarded not only as a human and animal foodstuff but as the basis of industries, focused on its reprocessing into starch, syrup, etc.⁷²

One of the main goals was the development of potato growing not only in gardens, but also in fields and in side plots.⁷³ In July 1840 a secret committee led by the Minister of War Count Chernyshev ordered that state peasants should sow enough seed potatoes to achieve a net gain of one tchetvert (131 kg) per 'revisional soul'.⁷⁴ However, in the order issued by the Emperor on 8 August, the potato production aimed for on state estates was set at half tchetvert (or one *os'moj*) per soul.⁷⁵ In 1841 Kiselev established his potato growing target for the Russian Empire as follows: each peasant (on both private and state estates) should plant enough seed potatoes so that the expected annual harvest would ensure at least half of the yearly food consumption for his family (the whole farm) to secure food in the event of a cereal crop failure.⁷⁶ In 1843 this was set as an all-Russian norm of 1 tchetverik (i.e. one eighth of a tchetvert) per soul.⁷⁷

The expansion of potato cultivation and the reaching of expected harvest targets were seen as objectives by the central government, but which could not be achieved without systematic organization and contribution from local government. All officials and landlords responsible for potato growing had to work towards this goal. The central government repeatedly emphasized the need for government measures to promote potato cultivation in Russia.⁷⁸ According to an order by Nicholas I of 16 February 1842, the provincial governments had to continue with

⁶⁸ EHA, 29-1-6495, fo. 40; 1185-1-100, fo. 133, Civil governor of Livland to the Livonian Public Benefit and Economics Society, 22 Nov. 1841.

⁶⁹ PSZ, *Sobranie vtoroe*, no. 15,296, 16 Feb. 1842; LSHA, 3-1-1928, fo. 14, P. Kiselev to the civil governor of Livland, 31 Mar. 1842; EHA, 29-1-6495, fo. 75, P. Kiselev to the civil governor of Estland, 31 Mar. 1842.

⁷⁰ M. Confino, *Systèmes agraires et progrès agricole: L'assolement triennal en Russie aux XVIIIe–XIX siècles* (1969), p. 304.

⁷¹ Druzhinin, *Gosudarstvennye krest'jane*, p. 53.

⁷² LSHA, 3-1-1928, fo. 13, P. Kiselev to the administration of state domains of Livland, 31 Mar. 1842; EHA, 29-1-6495, fo. 136, P. Kiselev's circular letter to the civil governors, 26 Mar. 1843; PSZ, *Sobranie vtoroe*, no. 16,538, 15 Feb. 1843; EHA, 203-1-282, fo. 2, Nicholas I to P. Kiselev, 15 Feb. 1843, a copy; 'Geschichte des Kartoffelbaues', p. 586.

⁷³ LSHA, 3-1-1928, fo. 13; EHA, 203-1-218, fos. 50–1, Administration of state domains of Estland to the state estates, 21 May 1842; Druzhinin, *Gosudarstvennye*

krest'jane, p. 235.

⁷⁴ S. V. Tokarev, *Krest'janskije kartofel'nye buntj* [*The peasants' potato riots*] (1939), p. 24; Zablotskii-Desyatovskii, *Graf P. D. Kiselev*, p. 105.

⁷⁵ Prishvin, *Kartofel'*, p. 8; Zablotskii-Desyatovskii, *Graf P. D. Kiselev*, pp. 106–7. The same amount was noted by the minister of state domains in his circular letter of 28 Aug. 1840: Tokarev, *Krest'janskije*, p. 25.

⁷⁶ EHA, 29-1-6495, fos. 40–1; 1185-1-100, fo. 133, Civil governor of Livland to the Livonian Public Benefit and Economics Society, 22 Nov. 1841.

⁷⁷ PSZ, *Sobranie vtoroe*, no. 16,538, 15 Feb. 1843. By 1850 the sowing norm of 1 tchetverik potatoes per soul was achieved in 16 provinces out of 48, incl. the Baltic provinces: I. D. Koval'chenko, *Russkoe krepostnoe krest'janstvo v pervoj polovine XIX v.* [*Russian serf peasantry in the first half of the 19th c.*] (1967), pp. 389–91 (appendix table 3).

⁷⁸ E.g. EHA, 29-1-6495, fos. 40, 53r–v, Ministry of state domains to the civil governor of Estland, 14 Nov. 1841.

the implementation of measures and monitor potato cultivation even in the provinces where peasants were already growing potatoes.⁷⁹ Still, in 1843 the civil governor of Estland expressed his fears that local Estonian peasants would not adopt the potato crop and would lose interest in its cultivation unless additional measures were applied. As he wrote in his letter to the Estland nobility, 'So there remain fears that due to the distrust already generated amongst the peasantry, reluctant towards innovations ("highly unresponsive" crossed out) potato cultivation will slowly wear off or maybe disappear totally'.⁸⁰

A strong emphasis was laid on education to encourage people to accept the potato as an alternative staple food. According to the regulation issued by the Emperor in 1840, brief but clear guidelines explaining the growing, storage and use of the potato had to be printed and disseminated.⁸¹ Kiselev also regarded the advocacy of potato growing as highly important. As he noted in 1847, improvements in agriculture were never successful or enduring if implemented by force; peasants should be persuaded of the advantages of improved agriculture.⁸²

In 1840, following the wishes of the Emperor, a brief instruction brochure on potato cultivation (*Kratkoe nastavlenie o poseve, uborke, khranении i upotreblении kartofelja*) was compiled and printed according to an order by the Ministry of State Domains.⁸³ It provided farmers with instructions on how to plant, harvest and store potatoes and even guidelines on different ways to prepare and use them. From January 1841, on Kiselev's orders, these instructions were actively disseminated all over the Russian Empire.⁸⁴ In the Baltic provinces (in Tallinn) the brochure was translated and printed in German.⁸⁵ In the case of the crown estates of the Baltic provinces, copies were sent separately from St Petersburg.⁸⁶ However, distribution was never on a massive scale. The civil governor of Estland, for example, sent less than 20 copies in German to each district magistrate for private estates, and not for free distribution, but for sale at a price of 15 silver kopecks each. According to the orders by the civil governor of Estland, the brochure had to be distributed amongst landlords (rather than the peasantry).⁸⁷ It is not known that it was translated into the local languages (Estonian or

⁷⁹ PSZ, *Sobranie vtoroe*, no. 15,296, 16 Feb. 1842.

⁸⁰ '[...] daß der bereits angeregte Eifer für die gute Sache bey unserem für den Neuerungen so wenig empfänglichen abgeneigten Landvolke, allmählig wieder erkalten und vielleicht sogar gänzlich nachlassen könnte': EHA, 29-1-6495, fo. 155v, Civil governor of Estland to the head of the nobility of Estland, 2 Sept. 1843, a draft.

⁸¹ EHA, 29-1-6495, fo. 7, List of the circular letters by the ministry of state domains in 1840; Prishvin, *Kartofel'*, p. 9.

⁸² Druzhinin, *Gosudarstvennye krest'jane*, p. 236.

⁸³ *Kratkoe nastavlenie o poseve, uborke, khranении i upotreblении kartofelja* (St Petersburg 1841). Already in the spring of 1840, before the publication of this brochure, the ministry of the internal affairs disseminated another manuscript on potato cultivation ('*Kratkoe nastavlenie o pazvedenii kartofelja*'). The latter was translated into German in Livland but was not published. However, it also appeared in the Gazette of the

province of Olonets: *Oloneckija Gubernskaja Vedomosti*, 18, 4 May 1840; EHA, 1185-1-89, fo. 78, Kurze Anleitung über den Kartoffelbau.

⁸⁴ EHA, 29-1-6495, fo. 6, P. Kiselev to the civil governor of Estland, 31 Jan. 1841; 1185-1-100, fo. 142, P. Kiselev to the civil governor of Livland, 31 Jan. 1841; 902-1-1133, not paginated, Civil governor of Estland to the district magistrate of Maa-Viru, 20 Mar. 1841.

⁸⁵ *Kurze Belehrung über die Aussaat, Ernte, Aufbewahrung und den Gebrauch der Kartoffeln. (Zufolge Allerhöchsten Befehls im 3. Departement der Reichs-Domänen angefertigt im Jahre 1841)* (Reval [1841]).

⁸⁶ EHA, 203-1-214, fo. 92, Ministry of state domains to the administration of state domains of Estland, 26 Feb. 1841.

⁸⁷ EHA, 29-1-6495, fo. 27, Circular letter of the civil governor of Estland to all the district magistrates, 21 Mar. 1841; 29-1-6495, fo. 32, District magistrate of Maa-Viru to the civil governor of Estland, 25 Apr. 1841.

Latvian). The income from sales and the reports by the district magistrate from late spring that same year show that the copies sold out quickly.⁸⁸ Besides the German version, a few Russian copies of the brochure were sent out for free distribution.⁸⁹

The introductory lines of the brochure emphasize that the potato could be a solution to famines in the event of a shortage of grain. Furthermore, it stresses that the potato is a healthy and nutritious food item for human consumption; it can be used as fodder, for vodka production and converted into sugar and starch. Potatoes could be grown everywhere, even on clay, sandy, and chalky soils. Unlike grains, seed potatoes did not have to be high quality. Practically all seed potatoes (except frostbitten ones) can be planted. Furthermore, one seed potato can be cut into several pieces as long as each piece contains 1–2 potato eyes. They could be picked for consumption even before harvest time.⁹⁰

One of the main arguments by Kiselev in the early 1840s was that potatoes are more resistant to failure than other field crops.⁹¹ Until the epidemic of 1847 potatoes were advocated as an almost perfect foodstuff, the cultivation of which had no drawbacks. Potato crops were clearly seen as more resilient to the ‘harmful changes in the atmosphere’ as they needed less rainfall due to their large leaves and bigger roots, which suffer less during droughts. It was claimed that as long as good and timely cultivation was observed, the weather had little impact on potato crops. The potato was only sensitive to frost, which had to be considered when planning harvesting. Even if the crop was affected by frostbite and excessive rainfall caused tuber rot, this did not necessarily imply harvest failure. Guidelines were provided on how to make potato flour from frostbitten potatoes which might be even more long lasting than grain flour. It was also possible to partially use rotten potatoes and old seed potatoes for fodder and distilling.⁹²

The leading agricultural society in the Baltic provinces, the Livonian Public Benefit and Economics Society (*die Livländische Gemeinnützige und Ökonomische Sozietät*) gave a more balanced overview of the potato in 1841. The Society emphasized that keeping in mind the longitudes of Livland, the potato offered the best yield from any given, but it also demanded the greatest care and effort. The potato could ensure food provision on a large scale only if grown ‘by a diligent farmer with care and attention’.⁹³ Thus the Society highlighted one of the most problematic drawbacks of potato cultivation. The expansion of more labour-intensive potato cultivation on the estates also meant a greater need for peasants’ labour in the form of *corvée*, even though, as pointed out by Juhan Kahk, the *corvée* regulations that had been established at the beginning of the century did not foresee potato harvesting work.⁹⁴ The

⁸⁸ EHA, 29-1-6495, fo. 72, District magistrate of Alutaguse to civil governor of Estland, 8 Mar. 1842; 29-1-6495, fos. 33, 35, 46, 47, Civil governor of Estland to the district magistrates of Maa-Viru, Ranna-Viru, Lõuna-Järva, Maa-Lääne 13 June, 20 June, 5 Aug. and 19 Aug. 1841.

⁸⁹ EHA, 902-1-1133, not paginated, Civil governor of Estland to the district magistrate of Maa-Viru, 20 Mar. 1841; 29-1-6495, fo. 6.

⁹⁰ *Kurze Belehrung*, pp. 3–4, 8; 1185-1-89, fos. 76, 81v.

⁹¹ EHA, 29-1-6495, fo. 6.

⁹² EHA, 1185-1-89, fos. 76, 79, 82v–83v; 1185-1-100, fo. 133; see also A. Hueck, *Darstellung der landwirtschaftlichen Verhältnisse in Esth-, Liv- und Curland* (1845), pp. 210–1; ‘Benutzung der erfrorenen’, col. 609–10.

⁹³ EHA, 1185-1-100, fos. 134v–5r, President of the Livonian Public Benefit and Economics Society to the civil governor of Livland, 9 Dec. 1841.

⁹⁴ J. Kahk, *Murrangulised neljakümnendad [The Upheaval Forties]* (1978), pp. 26, 28. See also Strods, *Latvijas*, p. 105.

potato brought the need to negotiate even more intense seasonal corvée or forced landowners to hire more labour.⁹⁵

However, the Society did not regard the labour-intensive nature of potato growing as the biggest problem but rather the fact that seed potatoes needed storage (especially in large quantities and keeping different varieties separately) and protecting them from degradation was much more difficult than grain seed storage. The potato needs a good dry cellar which protects it from the cold, which 'our peasantry rarely have access to'.⁹⁶ In fact, even manors were not always ready to provide the peasantry with storage for seed potatoes through the winter and so prevent rot.⁹⁷ The Society concluded that as opposed to wheat and rye, of high nutritional value, the potato cannot fully substitute for bread amongst 'the classes who perform strong physical labour'.⁹⁸

III

Any idealized perception of the potato was crushed by the blight that started to spread in 1846.⁹⁹ The potato blight, with its rapid spread and devastating consequences, was unexpected across Europe.¹⁰⁰ In 1841 the Livonian Public Benefit and Economics Society had claimed that if the potato was cultivated under more or less favourable conditions 'the harvest will not fall below the level of three potatoes to one seed potato'.¹⁰¹ The average yield in Livland in 1847 was only 1.5 potatoes per seed potato due to the blight. It was the lowest figure in Livland ever (the average between 1842 and 1846 had been 3.27 per seed).¹⁰²

As early as August 1847 the civil governor of Estland expressed concerns that the spread of the potato disease would lead to 'a dangerous crisis' and a setback in potato growing amongst the peasantry, as 'peasants' reluctance to adopt innovations related to economic methods is already well known'.¹⁰³ The civil governor's greatest fear was the large losses in food provision (*Volksversorgung*), which would mostly affect peasants. If during previous years the potato harvest had been rather poor on peasants' lands but at least average on estate fields, then due to the potato disease the estates would lose the necessary income for supporting peasants. Several landlords from the district of Viljandi estimated in private conversations with the civil governor that their direct losses resulting from the potato disease of 1847 reached 8–10,000 silver roubles each.¹⁰⁴

⁹⁵ Confino, *Systèmes agraires*, p. 304.

⁹⁶ EHA, 1185-1-100, fos. 135, 137.

⁹⁷ E.g. LSHA, 3-1-1929, fo. 62v, Third parish judge of the district of Cēsis to the civil governor of Livland, 3 Nov. 1842; Rost, Mäeväli (eds), *Die Kirchenchronik*, p. 190.

⁹⁸ EHA, 1185-1-100, fo. 136. It is not, of course, true since the potato supports life better than grain when eaten as the sole element of the diet: N. Nunn and N. Qian, 'The potato's contribution to population and urbanization: Evidence from a historical experiment', in *Quarterly J. Economics*, 126 (2011), p. 599.

⁹⁹ For the moods after realizing that the European

potato disease had reached Russia, see e.g. I. Reshetnikov, 'O bolezni kartofelja' ['About the potato disease'], in *Sovremennik: Literaturnyj Zhurnal* 16 (1849), pp. 98–100.

¹⁰⁰ Salaman, *History and social influence*, p. 289; E. Vanhaute, R. Paping, C. Ó Gráda, 'The European subsistence crisis of 1845–1850: a comparative perspective', in Ó Gráda *et al.* (eds), *When the potato failed*, p. 20.

¹⁰¹ EHA, 1185-1-100, fo. 136v.

¹⁰² Strods, *Latvijas*, p. 131.

¹⁰³ LSHA, 1-4-1119, fo. 5.

¹⁰⁴ LSHA, 1-4-1119, fos. 5, 11v.

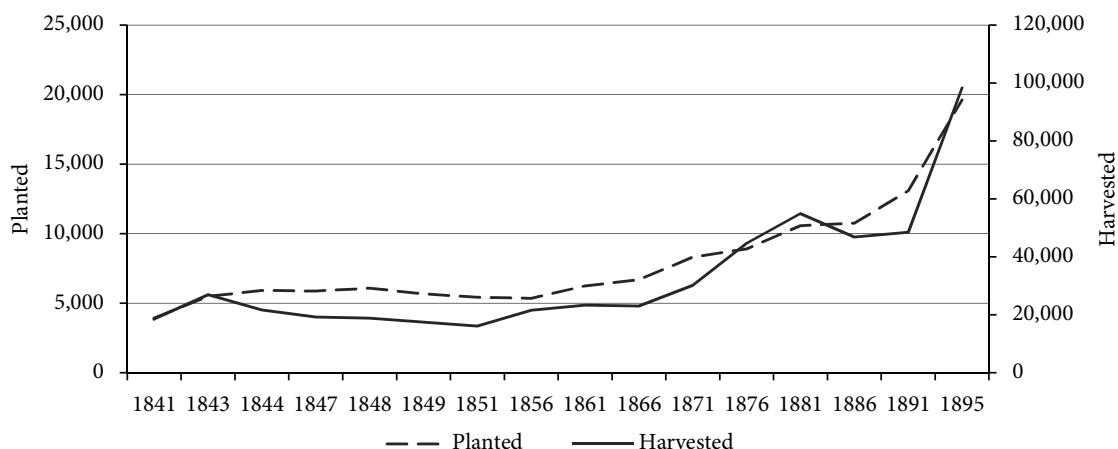


FIGURE 1: The total amount of potato planting and harvesting in the 50 provinces of European Russia, 1841–95 (in thousand tchetverts).

Source: The figure is based on the data presented by M. Prishvin, *Kartofel' v polevoj i ogorodnoj kul'ture* [*The potato in the field and garden*] (1908), pp. 13–14.

Walter McKenzie Pinter has pointed out that in Russia potato sowing rose only until the mid-1840s and that throughout the later years of Kiselev's administration it remained virtually unchanged.¹⁰⁵ At the beginning of the potato campaign in 1840 the amount of potatoes planted in Russia was about 1 million tchetverts; by 1844 it had increased over six times to 6 million tchetverts but after that it remained at this level (or below) until the 1860s (see Figure 1). The average total amount of potato planting in Russia was smaller in 1851–60 than it had been from 1841 to 1850 (5.5 million and 5.75 million tchetverts respectively).¹⁰⁶ The amount of potatoes planted and harvested in many of the regions of European Russia not only stalled in the late 1840s and early 1850s, but fell until it started to grow again gradually in the late 1850s.¹⁰⁷ This rapid slowdown and even decline in potato growing was mostly due to the setback caused by the potato blight (both in moral and yield terms). An overview of potato cultivation in the province of Pskov in the *Journal of State Domains* in 1853 said that 'about ten years ago the potato was planted in this province in remarkable amounts, but since the disease emerged farmers have started to limit planting, so that nowadays both landlords and peasants plant it only for their

¹⁰⁵ Pinter, *Russian economic*, p. 177; cf. A. S. Nifontov, *Zernovoe proizvodstvo Rossii vo vtoroj polovine XIX veka* [*Russian grain production in the second half of the 19th century*] (1974), p. 227; A. Z. Baraboj, 'Posevy i urozhai khlebov, kartofelja, saharnoj svekly v pomeschich'em i krest'janskom khozjastvakh Pravoberezhnoj Ukrainy v pervoj polovine XIX v. ['Sowing and harvest of grain, potatoes, sugar beet on manorial and peasants' lands in the right-bank Ukraine in the first half of the 19th century'], in *Ezhegodnik po agrarnoj istorii Vostochnoj Evropy* 1962 g (1964), pp. 344–5.

¹⁰⁶ Koval'chenko, *Russkoe krepostnoe*, pp. 386 (Appendix Table 1), 389–91 (Appendix Table 3). The most evident drop in the amount of potatoes sowed took place in the provinces of Mogilev, Vilnius, Kaunas, Pskov, Kaluga, Tver, Vitebsk and Volhynia. The Baltic provinces stayed more or less at the same level.

¹⁰⁷ Data from the provinces of Kiev, Volhynia and Podolsk show a decrease in the first half of the 1850s and a new increase at the end of the decade: Baraboj, 'Posevy i urozhai', p. 345.

own consumption'.¹⁰⁸ However, there was no potato famine in the Russian Empire and there are no references to cases of death by starvation due to the potato disease in the sources from the Baltic provinces, where the share of potato cultivation was the highest in Russia. Thus the potato blight was mostly an economic, administrative and moral setback. In the late 1840s it not only put an end to Kiselev's potato campaign; its major effect was that it thwarted the spread of potato cultivation and caused the (in parts drastic) fall in potato production in the Russian Empire. If in Ireland the potato blight decreased potato production for 35 years,¹⁰⁹ in the Baltic provinces and many other Russian provinces this fall went on for five to ten years.

IV

In the Russian Empire the potato was not adopted from below by the peasantry as a food crop but was rather imposed top-down as a famine relief measure. The promotion of potato growing was implemented through Emperor's edicts and required a systematic campaign led by the central government and the elites of society. At the same time, the state attempted to change peasants' eating habits. The potato was depicted as good food and the official instructions on potato cultivation included direct guidelines on how to prepare it.

The potato was seen as an escape route from cereal crop failures and the problem of hunger amongst the peasantry. A large part of European Russia was indeed very suitable for potato cultivation from the point of view of both the climate and soil characteristics.¹¹⁰ Thus, the Russian central government played this card in an attempt to find a solution to the frequent food shortages the county continued to suffer.

In 1840 the Emperor vigorously demanded an increase in potato growing in the whole Russian Empire. This potato campaign was definitely a major turning point for the introduction of potatoes in Russia. Until the mid-1840s everything seemed to be going as planned by Kiselev. Potato growing was expanding in Russia and the measures applied seemed to be bearing fruit. But before this decisive breakthrough was fulfilled a devastating potato blight epidemic broke forth in the Russian Empire in 1846 and went on until 1852, spreading from the Baltic provinces. The main consequence of the potato blight was the postponement of potato mass cultivation and consumption at least for a decade in Russia. Until the late 1860s the scope of potato cultivation remained more or less at the same level as in the 1840s. Only after that decade, especially in the 1870s, did potato growing increase three to four times on both estate and peasant lands in the Baltic provinces.¹¹¹ The potato became not only urgent famine food for poor peasants but a versatile substitute for grain and a staple food for everyone by the last quarter of the nineteenth century. By the end of the nineteenth century Russia was only surpassed by Germany for potato production in Europe.¹¹²

¹⁰⁸ Lehnovich, *K istorii*, p. 390.

¹⁰⁹ Ó Grada, *Black '47*, pp. 13, 23–4; S. Rosen, 'Potato Paradoxes', in *J. Political Economy* 107 (1999), p. 303.

¹¹⁰ Nunn and Qian, 'Potato's contribution', pp. 611–2.

¹¹¹ J. Kahk, 'Die Getreide- und Kartoffelproduktion in Estland im 19. Jahrhundert im Spiegel der Gouverneursberichte. Gedanken über die Parallelentwicklung von

Guts- und Bauernwirtschaften im Baltikum', in *Proc. Estonian Academy of Sciences. Humanities and Social Sciences* 42 (1993), p. 12.

¹¹² Prishvin, *Kartofel'*, p. 2; K. F. Kiple, K. Coneè Ornelas (eds), *The Cambridge World History of Food* (2 vols, 2000), II, p. 1879.