



Universiteit
Leiden

The Netherlands

**Divine Food' or the 'Worst Known Foodstuff'? Religion,
Nutrition and Society in Dutch Potato Discourse
(1840-1860)**

Tilburg, Richard van

Citation

Tilburg, R. van. (2019). Divine Food' or the 'Worst Known Foodstuff': Religion, Nutrition and Society in Dutch Potato Discourse (1840-1860). *Leidschrift*, 34(me: Over vette en magere jaren. Voedselgeschiedenis vanaf de Griekse agora tot op de Amerikaanse televisie), 71-87. Retrieved from <https://hdl.handle.net/1887/3180762>

Version: Publisher's Version

License: [Leiden University Non-exclusive license](#)

Downloaded from: <https://hdl.handle.net/1887/3180762>

Note: To cite this publication please use the final published version (if applicable).

'Divine Food' or the 'Worst Known Foodstuff'? Religion, Nutrition and Society in Dutch Potato Discourse (1840-1860)

Richard van Tilburg

In 1782, the royal physician Petrus Johannes Bavegem lauded the potato for its utility, fertility and how people used it 'with great pleasure.'¹ A mere century later another Dutch physician referred to himself as 'an arch-nemesis of the potato.'² These two statements could not have been further apart. Clearly the foodstuff had lost some of its appeal in the mid-nineteenth century for this physician to make such a remark. Previous research by Rebecca Earle and Emma Spary has shown that in late eighteenth- and early nineteenth-century Western Europe the potato was actively discussed in two frameworks: health and morality.³ Earle showed that governments actively promoted potatoes as a health benefit for the people, specifically the lower classes. In her opinion this was the primary cause for the popularization of the potato. Spary suggested, based on French potato consumption around the turn of the century, that the potato also had an ethical connotation. The foodstuff was propagated as moral, natural and honest, because its yields were high and labour costs relatively low.⁴

Both historians researched periods in which the potato rose to prominence and had significant positive effects on the nation.⁵ In this article I look at the discourse surrounding the potato in the Netherlands during the period 1840-1860, when multiple waves of potato blight had the country on the brink of famine.⁶ This period also coincided with the

¹ P.J. Bavegem, *Prijzverhandeling over de ontaarding der aardappelen* (Dordrecht 1782) 1-2.

² Een Geneeskundige, *Een gezond en goedkoop voedsel voor iedereen. aanwijzing tot de voortteeling en het nuttigen van nieuwere, betere, goedkoopere en voedzamere aardvruchten, ter vervanging van de minder gezonde aardappelen.* (Amsterdam 1857) 32.

³ R. Earle, 'Promoting Potatoes in Eighteenth-Century Europe', *Eighteenth-Century Studies* 51.2 (2017) 147-162; E. C. Spary, *Feeding France: New Sciences of Food, 1760-1815* (Cambridge 2014).

⁴ Spary, *Feeding France*, 178-182.

⁵ M. Wintle, *An Economic and Social History of the Netherlands, 1800-1920: Demographic, Economic and Social Transition* (Cambridge 2000) 48.

⁶ M. Bergman, 'The Potato Blight in the Netherlands and Its Social Consequences (1845-1847)', *International Review of Social History* 12.3 (1967) 390-431; R. Paping and

foundation of modern nutritional science, with substantial contributions by Dutch chemists and physiologists.⁷ I study how the potato was discussed and framed as a foodstuff during this period, why so, and how this connected with the potato blight and the establishing nutritional science.

In Dutch historiography of eighteenth- and nineteenth-century, potato consumption social and economic studies have thus far been the norm.⁸ Especially the blight has only been researched sparsely. Only in the last few years have new insights on potato-history sprouted. The aforementioned frameworks by Spary and Earle on the cultural significance of potatoes as a foodstuff in this period are worth expanding upon, just as the relatively new historiography of nutritional science in the nineteenth century. Studies have shown that Dutch scientists were influential within international debates in this period. The place of potatoes within this nutritional scientific paradigm has not yet been researched.⁹ Therefore research on the potato during the blight and rise of a new scientific paradigm is a highly relevant topic.

For this discourse analysis, I use the publications shown in table 1. I chose these works because they were written by important public figures, whose commentaries on the blight and nutrition were central in mid nineteenth-century Dutch discourse. I further bolster my arguments with articles from the *Algemeen Handelsblad* and the *Leydsche Courant*. The *Handelsblad* featured several opinion pieces from readers on the potato blight. These give an insight into the perceptions of the Dutch middle and

V. Tassenaar, 'The Consequences of the Potato Disease in the Netherlands 1845-1860. A Regional Approach' in: R. Paping, E. Vanhoute and C. O'Grada ed., *When the Potato Failed. Causes and Effects of the Last European Subsistence Crisis, 1845-1850* (Turnhout 2007) 149-183.

⁷ K. Carpenter, 'A Short History of Nutritional Science. Part 1 (1785-1885)', *The Journal of Nutrition*, 133.3 (2003) 638-645: 642; H. Kamminga and A. Cunningham, *The Science and Culture of Nutrition, 1840-1940* (1995) 3.

⁸ J. van der Maas and L. Noordegraaf, 'Smakelijk eten. Aardappelenconsumptie in Holland in de achttiende eeuw en het begin van de negentiende eeuw', *Tijdschrift voor Sociale Geschiedenis* 9 (1983) 188-220; T. Lambrecht and I. Devos, *Bevolking, voeding en levensstandaard in het verleden. Verzamelde studies van Prof. Dr. Chris Vandenbroeke* (Gent 2004).

⁹ Kamminga and Cunningham, *The Science and Culture of Nutrition*, 3-7; L. Meneghello, *Jacob Moleschott a Transnational Biography: Science, Politics, and Popularization in Nineteenth-Century Europe* (2017) 113-139; Carpenter, 'A Short History of Nutritional Science', 640-642.

upper class. The *Leydsche Courant* on the other hand mostly targeted the Dutch working class with their daily articles on the impact of the blight.¹⁰ These newspapers show two widely different discourses in Dutch society.

	Author	Occupation	Abbreviated Title	Year
Religion	Heldring	Preacher	<i>Wat te denken en wat te doen</i>	1845
	Hooijer	Preacher	<i>De grote nood des hongers</i>	1847
Nutrition	Mulder	Chemist	<i>De voeding in Nederland</i>	1847
			<i>De voeding van Nederlanders</i>	1854
	Moleschott	Physiologist	<i>Leer der voedingsmiddelen</i>	1850
	Donders	Physiologist	<i>De voedingsbeginselen</i>	1852
Society	Vissering	Economist	<i>Opmerkingen der aardappelziekte</i>	1845
	Bergsma	Chemist	<i>De aardappel epidemie</i>	1845
			<i>Verbeterde inrigting tot spijsbereiding</i>	1842
	Martius	Chemist	<i>De aardappel epidemie (trans.)</i>	1843

Table 1: overview of the writings analysed in this study structured by analytical cluster.

I structure this article around three thematic clusters in these works and newspaper articles, based on religious, nutritional and societal discourses of the potato as a foodstuff.

A potato-dependent country

In the 1840s, agriculture was the prime motor of the Dutch economy. During the first half of the nineteenth century production increased rapidly due to specialization and technological innovation. Between 1810 and 1850, overall agricultural yields increased by 10-20%.¹¹ The potato had a very important place within these developments, since the amount of land cultivated with potatoes rapidly grew in the first half of the nineteenth

¹⁰ Bergman, 'The Potato Blight', 418-422.

¹¹ L. van Zanden, *De economische ontwikkeling van de Nederlandse landbouw in de negentiende eeuw, 1800-1914* (Utrecht 1985) 166, 204.

century.¹² As a result, the Netherlands became the most potato-dependent country after Ireland in this period, especially for the lower classes.¹³

The sharp increase in population was largely indebted to the reliability of the then widely cultivated crop.¹⁴ Small farmers and labourers relied on their own few acres of potatoes to survive.¹⁵ Around 10-20% of the arable land was sown with the crop, with some extremes like the Bommelerwaard where 60% of the land produced potatoes.¹⁶ Potatoes made up roughly half of the agricultural yields, showing their reliability as a food source and the dependency of the Dutch nation.¹⁷ On average Dutch citizens ate hundreds of kilograms of potatoes a year in the 1830s and early 1840s.¹⁸ The poorer people were, the more central potatoes were in their lives. The higher classes ate them once a day as a side dish, but in the poorest regions of the country some farmers ate them three times a day.¹⁹

The fungus that caused the widespread malady, the *phytophthora infestans*, was new to Europe when it struck in the summer of 1845.²⁰ It was shipped on a shipment of seeds from America where it had caused multiple smaller epidemics in the early nineteenth century. The first sightings of the blight in the Netherlands were in July 1845. Due to the wet summer, it only took a few weeks for the fungus to spread from Zeeland to Groningen.²¹ Roughly 80% of potatoes sown in the Netherlands in 1845 were infested with the disease and yields were only slightly more than a quarter of the average of previous years.²² In 1846 the blight was less widespread, largely due to a drought during the summer. Still a large portion of the autumn

¹² Van Zanden, *De economische ontwikkeling*, 169.

¹³ Paping and Tassenaar, 'The Consequences of the Potato Disease', 150.

¹⁴ *Ibidem*, 157.

¹⁵ D.E. Zaag, 'Overwintering en epidemiologie van *Phytophthora infestans*, tevens enige nieuwe bestrijdingsmogelijkheden', *Tijdschrift Over Plantenziekten* 62.3 (1956) 89-156: 3.

¹⁶ Paping and Tassenaar, 'The Consequences of the Potato Disease', 144.

¹⁷ Zanden, *De economische ontwikkeling*, 171.

¹⁸ Paping and Tassenaar, 'The Consequences of the Potato Disease', 158.

¹⁹ J. Jobse-van Putten, *Eenvoudig maar voedzaam: cultuurgeschiedenis van de dagelijkse maaltijd in Nederland* (Nijmegen 1995) 191-200.

²⁰ Zaag, 'Overwintering en epidemiologie', 4-5; Bergman, 'The Potato Blight', 393.

²¹ *Ibidem*, 2.

²² F. Terlouw, 'De aardappelziekte in Nederland in 1845 en volgende jaren', *Economisch- en Sociaal-Historisch Jaarboek*, (1971) 263-308; Paping and Tassenaar, 'The Consequences of the Potato Disease', 154.

potatoes were not edible.²³ Most people adapted by changing their production to spring potatoes or potato flour, for which mildly diseased potatoes could be used.²⁴ The severe winter of 1846-1847 made matters even worse for the population. In total, yields were almost halved compared to normal years.²⁵ The prices of the edible potatoes quadrupled during the blight years of 1845-1848.²⁶ Wheat and rye, the best alternative, rose around 20% in price during 1846, making the situation even more dire for the lower classes.²⁷

Pauperism therefore spread rapidly, with 18% of the population on some form of poor relief in 1847, compared to only 12% in the early 1840s.²⁸ By 1847, the country was in a state of emergency. Death-rates exceeded birth-rates, resulting in a population loss of a few thousand people.²⁹ From 1848 onward yields slowly increased again.³⁰ Mortality rates remained higher than normal until 1849.³¹ The production of potatoes in the coastal clay soils of Utrecht and Holland only reached pre-blight years in the earlier 1850s. Friesland, Groningen and Zeeland did not fully recover until the 1860s.³² The potato blight had a significant and lasting impact on Dutch society.

A divine foodstuff

The region hit the hardest by the blight, the Bommelerwaard region, was quite actively described by the preachers Ottho Heldring and Cornelis Hooijer in the years 1845-1847. In that potato-dependent region the failure of the crop caused an alarming shortage of food.³³ The social impact of the blight in the country was the most severe here, with mortality rates twice as

²³ Bergman, 'The Potato Blight', 395.

²⁴ Paping and Tassenaar, 'The Consequences of the Potato Disease', 153-155.

²⁵ O'Grada, Paping, and Vanhaute, *When the Potato Failed*, 22.

²⁶ *Ibidem*, 22.

²⁷ Bergman, 'The Potato Blight', 396; Paping and Tassenaar, 'The Consequences of the Potato Disease', 161.

²⁸ *Ibidem*, 398-399; *Ibidem*, 173.

²⁹ O'Grada, Paping, and Vanhaute, *When the Potato Failed*, 25.

³⁰ Paping and Tassenaar, 'The Consequences of the Potato Disease', 155.

³¹ *Ibidem*, 175.

³² *Ibidem*, 156.

³³ *Ibidem*, 144.

high as the Dutch average of 1847.³⁴ Both men were preachers in the region and published their works to spark interest in the region and raise money for the lower classes.³⁵ Heldring wrote his short pamphlet *Wat te denken van en wat te doen in den aardappelennood* in the fall of 1845, just months after the onset of the blight. Hooijer's *De Groote Nood des Hongers in en bij den Boemelerwaard* was written in the summer of 1847, when the social effects of the blight were most apparent. In their works, both men blended Christian orthodoxy with societal issues, mainly substance abuse and poverty.³⁶

Both men put the potato within a positive moralistic, divine and health discourse, with the crop at the centre of their theological worldview. Heldring praised the Dutchmen who worked hard and barely earned enough money to remain out of poverty, while also never indulging themselves with luxurious commodities.³⁷ This hard working and temperate lifestyle was most likely appealing to Heldring's Calvinistic worldview. God gave men the potato, cheap and with a high agricultural yield, and this allowed these men to stay in this morally preferred position: 'there the Heavens provided salvation.'³⁸ Hooijer went further on how the potato used to keep the citizens in the Bommelerwaard strong and healthy, lamenting: 'See, there used to walk strong and agile men'³⁹ He saw first-hand how men succumbed to immoral urges and needed the potato to save them from 'immorality and through that to irreversible damage.'⁴⁰

Even though both men discussed the potato as healthy and necessary, they gave no explicit reasoning of its benefits. Their implicit reasoning was that potatoes were healthy because men were strong when they ate them. For them citizens used to be healthy when there were

³⁴ J. Poppel and E. Beekink, 'De biometer in kaart gebracht. Zuigelingen- en totale sterftcijfers voor Nederlandse gemeenten, 1812-1939', *Gewina / TGGNWT* 24.1 (2002) 18-32: 29.

³⁵ J. P. de Bie and J. Loosjes, *Biographisch woordenboek van protestantsche godgeleerden in Nederland. Volume 3* (The Hague 1919) 632-634.

³⁶ O.W. Dubois, 'Ottho Gerhard Heldring 1804-1876, Predikant en Filantroop', *Biografisch Woordenboek Gelderland*, www.biografischwoordenboekgelderland.nl/bio/3_Ottho_Gerhard_Heldring, 13 December 2018.

³⁷ O. G. Heldring, *Wat te denken van en wat te doen in den aardappelennood?* (1845) 7.

³⁸ Heldring, *den aardappelennood*, 12; C. Hooijer, *De groote nood des hongers in en bij den Boemelerwaard. Een waar verslag voor alle menschenvrienden in ons vaderland* (1847) 22.

³⁹ Hooijer, *De groote nood des hongers*, 12.

⁴⁰ *Ibidem*, 7.

potatoes and now they were dying because of a lack of it. That Hooijer witnessed the severe suffering of the people in 1847 undoubtedly attributed to this lamentation of a past where potatoes kept the citizens healthy and alive. The health frame is therefore more diffuse than their very clear theologically grounded frame of morality.

Regardless of their explicit positive framing of the potato, there were negative aspects to the crop as well. Both men denounced the dependency and overabundant use of potatoes within factory work, especially to make gin.⁴¹ This immoral behaviour, which sparked the blight according to Heldring, was not condoned by God. Furthermore, this strengthened both men in their belief that the dependency on the potato could have negative outcomes, because God punished the abundance of products made with potatoes.⁴² They were sceptical of other foodstuffs though. Heldring was unsure whether God would provide beans, turnips and cabbage in the same abundance as he had once done with potatoes.⁴³ Men had to abstain from indulging themselves with potato gin and then the potato would provide salvation.

Overall Heldring's praise 'and thank God we have potatoes!' was not overstated, since for these men who witnessed the blight first-hand the potato was an essential divine foodstuff that meant the literal difference between life and death.⁴⁴ Both the health and morality frameworks found by Spary and Earle were still present half a century later, despite the morality frame being altered within a divine interpretation, and the health frame being more diffuse. Furthermore, it is noteworthy that Heldring alluded to the negative consequences of dependency. Even though he did not switch his praise to a different vegetable, it certainly made him think whether the potato could be a saviour for ever.

Potatoes or proteins

Despite the praise that both preachers had for the foodstuff, the potato was not without opposition. In the 1840s and 1850s, Dutch chemist Gerrit Jan Mulder (1802-1880) and his assistants Franciscus Donders (1818-1890) and

⁴¹ Ibidem, 8; Heldring, *den aardappelenmoed*, 12.

⁴² Heldring, *den aardappelenmoed*, 11.

⁴³ Ibidem, 27.

⁴⁴ Ibidem, 8..

Jacob Moleschott (1822-1893) became active opponents of the status of the potato within Dutch society. Mulder was an influential chemist in the 1830s, being the first to coin the term 'protein' in a scientific publication.⁴⁵ In his nutritional paradigm all organic material contained proteins with the same ratios of carbon, hydrogen, oxygen and nitrogen.⁴⁶ Since all organisms were made up of these proteins and could easily absorb them because of their corresponding ratios, food that contained a lot of these proteins was considered healthy. Foodstuffs that did not contain these proteins could not supply the human body with sufficient nutrients and were considered unhealthy

Moleschott and Donders were heavily influenced by the theory of their mentor. Donders earned a doctoral seat in Utrecht in 1847 and became a leading physiologist specialised in the eye, an ophthalmologist, in Europe and one of the most well-known intellectuals of the Netherlands.⁴⁷ Moleschott was only active in Utrecht from 1845-1847, but Mulder's teachings shaped his worldview considerably.⁴⁸ Both men adopted a radical materialistic outlook. In this worldview, all bodily matter stood in relation and influenced men's physical and mental state. Nutrition was therefore of prime importance to them and they actively tried to spread their ideas to a wider audience.⁴⁹

In their understanding, proteins thus equalled healthy food, which in turn equalled mental and physical wellbeing. In *De Voeding in Nederland, in Verband tot den Volksgeest*, published in 1847, Mulder described this thoroughly. He lamented the state of the physical and mental capabilities of the average citizen, which he related to their nutrition. Without proteins, they would lack in physical health, morality and intellectual capacity.⁵⁰

⁴⁵ M.J. van Lieburg, *Al doende leert men. De Rotterdamse jaren van Gerrit Jan Mulder (1802-1880)* (Rotterdam 2006) 80-83.

⁴⁶ H A M Snelders, *De geschiedenis van de scheikunde in Nederland, deel 1* (2003) 95.

⁴⁷ J. Gijn and J. Gijselhart, 'Donders: Oogarts en Fysioloog', *Nederlands Tijdschrift voor Geneeskunde* <https://www.ntvg.nl/artikelen/donders-oogarts-en-fysioloog>, 3 December 2018; A. Roelofs, 'Biography F.C. Donders', *Donders Institute*, <https://www.ru.nl/donders/agenda/donders-lectures/biography-donders>, 14 December 2018.

⁴⁸ Meneghello, *Jacob Moleschott*, 309.

⁴⁹ Ibidem, 56, 123; Van Lieburg, *Al doende leert men*, 14, 64-66.

⁵⁰ G. J. Mulder, *De voeding in Nederland, in verband tot den volksgeest* (1847) 3.

Humanity was therefore indebted to their nutrition according to Mulder.⁵¹ Donders summarised it well by referring to proteins as 'first among the nourishments.'⁵² Blood was central in this regard and to keep blood filled with proteins Mulder suggested a diverse diet, preferably with vegetables and meat.⁵³ The second half of the work served as a denunciation of foodstuffs that were to be avoided. Potatoes did not contain enough proteins to replenish the human blood and therefore exhausted the body. He stated that a man would need to eat ten kilograms of potatoes per day to fulfil his basic need of proteins.⁵⁴ Primarily eating potatoes therefore resulted in all sorts of malady.

Eating potatoes as a secondary dish was something that the scientists did not condemn, since it contained useful fats and amyllum, but they vehemently attacked the primacy of the potato as the main foodstuff in many diets.⁵⁵ Unlike their religious contemporaries, their reasoning against the dependency on potatoes was scientific. Moleschott and Mulder both wrote that the monoculture of potatoes would give people bad blood, 'potatoblood', which made men sluggish and dull.⁵⁶ Since healthy blood was central for an organism's total wellbeing, referring to bad blood as *potatoblood* therefore was a grave insult to the potato. Donders added to this by referring to the abundance of men's 'potato-bellies', which made them so 'soft and peaceful' that they could no longer see how their diet was ruining them mentally and physically.⁵⁷ This educational yet patronizing tone was apparent through all their works.

With proteins as the foundation for a healthy body and a radical materialistic worldview which put all of human wellbeing, physically and mentally, in relation to each other, potatoes could truly be regarded as the worst known foodstuff for these men. Within their scientific paradigm and radical materialistic worldview that made human beings depended on proteins, there was no place for the potato. This stance explains the harshest of their claims. Moleschott stated that 'You, truly, do not have to

⁵¹ Mulder, *De voeding in Nederland*, 75-77.

⁵² F. C. Donders, *De voedingsbeginselen. Grondslagen eener algemeene voedingsleer* (1852) 8.

⁵³ Mulder, *De voeding in Nederland*, 14.

⁵⁴ *Ibidem*, 14.

⁵⁵ *Ibidem*, 52; J. Moleschott, *Leer der voedingsmiddelen voor het volk* (1850) 115; Donders, *De voedingsbeginselen*, 22.

⁵⁶ Mulder, *De voeding in Nederland*.

⁵⁷ Donders, *De voedingsbeginselen*, 22, 24.

thank the new world for the gift that eternalises your suffering.⁵⁸ Mulder made the boldest claim of all: ‘Still the worst of all known and used nourishments is the potato.’⁵⁹ These harsh stances might seem overblown, yet they were understandable considering the role of nutrition within their worldviews. How this worldview affected their thoughts is most clearly represented by Moleschott, who co-authored a short work on the potato blight in 1845 just before becoming a student of Mulder. In this work, he showed none of his later antagonism towards the crop.⁶⁰ Only a few years later his stance was completely different.

Even though all their works were meant for a wider audience, the authors aimed their advice predominantly towards middle and high-class citizens. They were concerned with well-off people who could change their diets.⁶¹ Mulder advised people who were better off to replace their potatoes with more nutritious foodstuffs and hoped that the lower classes, who did not have the means to change their food intake, could at some point change their primary intake to beans, peas and grains.⁶² He never mentioned any practical solutions for the lower classes however. Even in his 1854 booklet *De Voeding van Nederlanders*, which was aimed towards practical solutions for the Dutch diet, he primarily focussed on people who could afford to change their diets. Their indifference with the lower classes is best described by the relative ease with which he and Moleschott remarked how the country could use some more blights in order to lower the status of the potato, despite the dependency of the nation on the crop.⁶³

Aside from the scientific framing of the potato by these academics, opinion pieces within the *Algemeen Handelsblad* reported on the bad effects of the potato as well. Their overall tendency was that the potato diminished health and that dependency on the potato was to blame, although they never pointed to tangible specifics on why the crop was unhealthy. In an article just after the onset of the blight J. C. Altorffer remarked for example that ‘not everything is bad which appears so’, specifically referring to the

⁵⁸ Moleschott, *Leer der voedingsmiddelen*, 115.

⁵⁹ Mulder, *De voeding van Nederlanders* (1854) 48.

⁶⁰ J.A.W. Moleschott, *Het wezen der aardappelsziekte en de middelen ter voorkoming en geneezing van dezelve, met eene plaat, voor geleerd en ongeleerd* (1845).

⁶¹ Mulder, *De voeding van Nederlanders* 51; Mulder, *De Voeding in Nederland*, 8-10, 52-55.

⁶² Mulder, *De voeding in Nederland*, 65-68.

⁶³ *Ibidem*, 67; Moleschott, *Leer der voedingsmiddelen*, 178.

effects of the blight.⁶⁴ His observations were that Dutchmen, from the past, 'our heroic seafarers', managed well without potatoes, therefore nineteenth-century Dutchmen should be able to survive without them as well. Furthermore, he stated that potatoes were 'undoubtedly unhealthy', referring vaguely to the foreign origin of the potato and its inability to therefore nourish Dutch bodies. Two years later another opinion piece remarked similarly how potatoes were unhealthy, referring to how the crop created a 'sickly, scrofulous, hydropic race instead of a healthy and muscular race in the Netherlands [...] a race without moral power or courage.'⁶⁵ His polemic tone is reminiscent of Mulder and his colleagues. The most radical post was an opinion piece from X.Y.Z. in 1848, specifically calling for municipal intervention to 'prohibit the usage of potatoes completely' because of their bad health influence.⁶⁶ These negative health discourses were therefore not limited to scientists, since Dutch citizens also attacked the potato, its detrimental effects and the monoculture that pervaded Dutch society. Their scientific health discourse was however more diffuse. The polemic tone and examples alluded to scientific motivations, but they never explained them in depth. I am confident however that these men who wrote to the *Algemeen Handelsblad* were aware of the scientific discourse of Mulder and his contemporaries. Even if their reasoning was more diffuse, their narratives and tone largely followed the scientists'. Mulder and his contemporaries were influential in Dutch society and it is likely that these authors knew their theories.

The nutritional paradigm of Mulder and his contemporaries only partially explains their negative framing of the potato. The blight played a substantial role as well, albeit more indirectly. At first glance, it seems that the disease did not have a significant impact, since authors only mentioned it sideways in examples. This is understandable since the blight was not connected to Mulder's scientific paradigm. However, their fulminations against the potato only appeared after the blight hit the country in 1845, even though Mulder's theory was already published in 1838. New scientific knowledge alone is therefore most likely not the only explanation for the anti-potato rhetoric.

I propose that even though the blight did not cause the negative framework, it did provide a discursive space in which the potato as a

⁶⁴ 'Is de miswas der aardappelen een kwaad?', *Algemeen Handelsblad* 2-10-1845, 4.

⁶⁵ 'Aan de redactie van het Handelsblad.' *Algemeen Handelsblad* 25-2-1847, 5.

⁶⁶ 'Eene stem over de aardappelen-ziekte.' *Algemeen Handelsblad* 4-9-1848, 3.

foodstuff could be openly criticised. Philosopher Rafal Maciag discussed this discursive space as the epistemological discourse which is supervenient from the world of facts.⁶⁷ The change from the potato as a boon for society to a reality where the potato failed allowed criticism to prosper in the public sphere. Since these men deemed nutrition of prime importance for the wellbeing of men, they most likely took this opportunity to give the potato a much-needed dent in status. That their largely middle and upper-class audience was not dependent on the potato and hit less severely by the blight most likely helped their rhetoric.

Some texts for example openly stated that the blight was instrumental in their rhetoric. An opinion piece in the *Algemeen Handelsblad* mentioned that:

Since the general failure of the potato in the year 1845, have people for the first time in the Netherlands loudly dared to proclaim, what was not unknown to most, that the potato as primary foodstuff, is an unhealthy foodstuff.⁶⁸

Mulder furthermore hoped that the blight would 'here and there lead to fruitful warnings against the misuse of this foodstuff.'⁶⁹ He and Moleschott also explicitly mentioned that more frequent potato diseases were to be desired, since these would only make their voices heard more easily.⁷⁰ Donders was more sceptical and feared that even mass failings of the potato would not have an impact on the 'potato-bellies', who were already beyond saving and content with below average food.⁷¹

Mulder and his contemporaries thus placed the potato within a health and morality framework, just like Earle and Spary, but inverted these frames in a negative connotation through their scientific understanding. Where the preachers used a diffuse discourse on health, these scientists pinpointed their analyses down rigorously. Their stance was best summarized by the earlier quoted arch-nemesis of the potato: 'like the diet is, is not only the body, but also the mind, the character and the heart of

⁶⁷ R. Maciag, 'Discursive Space and Its Consequences for Understanding Knowledge and Information', *Philosophies* 3.4 (2018) 1-34: 6.

⁶⁸ 'Aan de redactie van het handelsblad', *Algemeen Handelsblad*, 25 februari 1847, 5-6.

⁶⁹ Mulder, *De voeding in Nederland*, 67.

⁷⁰ Ibidem, 67; Moleschott, *Leer der voedingsmiddelen*, 178.

⁷¹ Donders, *De voedingsbeginselen*, 24.

man.⁷² People did not altogether dismiss potatoes, since they contained important fats and amyllum, but could, due to the weakened state of the potato in Dutch society, finally argue that it was unhealthy and should be a secondary food source.

Too important to fail

Mulder and his contemporaries were only one side of the academic debate surrounding potato consumption. Other scientists chose to defend the foodstuff and especially the role it had in Dutch society, especially members of the society for agriculture in Utrecht, the *Genootschap voor Landbouw en Kruidkunde*. Their aim was the propagation of agricultural science for the benefit of Dutch society as a whole.⁷³ At its head stood Cornelis Adriaan Bergsma (1789-1859), professor of agricultural science and rector of the University of Utrecht. He was very much concerned with poor relief through the improvement of food and agriculture, since he wrote on the improvement of hospital food and agricultural tools for years.⁷⁴ In 1845 he published on the societal effects of the potato blight. The same applied to his contemporary, the German botanist Carl Friedrich von Martius (1794–1868), who wrote extensively on the societal issues Germany suffered during the potato blight of 1842. His works were translated and published by the agricultural society.

In the inaugural speech of the agricultural society in 1842, Bergsma remarked how agricultural science had enriched the lives of Dutch citizens over the centuries. He specifically remarked the utility of the potato, not only as a foodstuff for men, but also for plants as fertilizer.⁷⁵ Science had brought such a reliable and valuable nutrient. This reliability and societal dependency were put forward by both Carl Friedrich von Martius and Cornelis Bergsma in their works on the potato blights of 1842 and 1845. Both men attributed the need of their inquiries to the vital role that the

⁷² Een Geneeskundige, *Een gezond en goedkoop voedsel voor iedereen*, 58.

⁷³ C.A. Bergsma, *Genootschap voor landbouw en kruidkunde te Utrecht: aanspraak van den voorzitter C.A. Bergsma*, (1842), 2–4.

⁷⁴ C. Boone, *Cornelis Adriaan Bergsma. Niet Zomaar een Fries* (Harderwijk 2016) 122-126.

⁷⁵ Bergsma, *Genootschap voor landbouw en kruidkunde te Utrecht*, 9.

potato had in European society.⁷⁶ Bergsma even remarked that society could not survive without the foodstuff and how ‘many judged, that she provided a most sure insurance against famine.’⁷⁷ It is noteworthy how the potato as a foodstuff remained above scrutiny in both their works. Martius kept on remarking how people could try to preserve their healthy and nutritious potatoes.⁷⁸ The blight for him was an exterior influence that had no effect on his overall conception of the potato as an advantageous foodstuff. He continuously referred to negative influences on the potato, instead of attributing negative effects to the crop itself. Here he extensively used a discourse of purity. Potatoes used to be pure, but their shipping all over the world and cultivation in radically different climates had degenerated them.⁷⁹ Martius did mention the chemical composition of the potato, its low amount of proteins, yet did not further remark on it.⁸⁰ This shows that the nutritional value of the potato as established within Mulder’s scientific paradigm was either unknown to Martius or unimportant for him. The latter one seems more convincing, since this work was devoted to the potato as an agricultural crop and its societal dependency and less about its nutritional value.

For these scientists, the potato as a foodstuff was one of the most important crops in Dutch agriculture. Just as Mulder and his contemporaries, these men commented on how dependent society was on potatoes, yet they did not attribute the same negative connotations to this dependency. I argue that this was because they valued the potato as indispensable and reliable, despite their lack of innate health benefits. Economist Simon Vissering (1818-1888) echoed this reliability as well in his 1845 book on the potato disease, which concerned itself with how the bad potato yields of 1845 could be alleviated.⁸¹ Vissering was a liberal professor of law and economist at the university of Leiden and even became minister

⁷⁶ C.F.P. von Martius, *De aardappel-epidemie der laatste jaren, of de kankerachtige en schurftachtige ziekten der aardappelen* (1843) 4.

⁷⁷ C.A. Bergsma, *De aardappel-epidemie in Nederland in den jare 1845* (1845) 5.

⁷⁸ Martius, *De aardappel-epidemie der laatste jaren*, 32.

⁷⁹ *Ibidem*, 38-39; *Berichten en Mededeelingen door het Genootschap voor Landbouw en Kruidkunde te Utrecht, Tweede aflevering* (1844) 30-32.

⁸⁰ Martius, *De aardappel-epidemie der laatste jaren*, 18.

⁸¹ Simon Vissering, *Eenige opmerkingen ter zake der aardappelziekte* (1845) 22-27.

of finance in the late 1870s.⁸² He was cautious whether other foodstuffs, notably grains, could be so reliable and abundant as the potato had been.⁸³

Not only academics wrote on the indispensability of the potato. The *Leydsche Courant* showed this stance as well, as they regularly published on how to make rotten potatoes edible again.⁸⁴ Their almost daily devotion to articles on the usage of potatoes shows how integral potato consumption was to their readers. The newspaper voiced relief many times when it became known that the overall effects of the disease would be limited compared to the year prior. It is remarkable how the newspaper had no mention of bad yields after 1846, even though those remained for years to come. Apart from the fall of 1845 and the early months of 1846 the news was mostly focussed on the regeneration of the potato culture. The negative news mainly focussed on different countries.⁸⁵ This newspaper, just as the scientists within the cluster, saw and commented on the potato as a vital part of Dutch society.

This did not mean however that these commentators deemed the potato a healthy foodstuff. Bergsma stated outright that potatoes would make men 'more fat than healthy' in a work from 1842 on dietetics.⁸⁶ This stance was also laid out by Vissering: He continuously noted how wheat and rye were more nourishing than potatoes on a scale of 5:1.⁸⁷ These criticisms resembled Mulder, who similarly argued how men had to eat multiple kilograms of potatoes each day to absorb the same nutrients as smaller amounts of different foodstuffs.

Their stance towards the potato therefore seemed to be more pragmatic, because they deemed availability and reliability more important than innate health benefits, because society depended on the foodstuff.

⁸² *Jaarboek van de Maatschappij der Nederlandse Letterkunde 1891*, 'Levensbericht van Mr. S. Vissering', https://www.dbnl.org/tekst/_jaa002189101_01/_jaa002189101_01_0010.php, 14 december 2018.

⁸³ Simon Vissering, *Eenige opmerkingen*, 6-8.

⁸⁴ *Leydsche Courant*, 3-9-1845, 2; *Leidsche Courant*, 8-9-1845; *Leydsche Courant*, 15-9-1845; *Leydsche Courant*, 18-9-1845.

⁸⁵ Bergsma, 'The Potato Blight', 421-423.

⁸⁶ C.A. Bergsma, *Beschrijving van de verbeterde inrigting tot spijsbereiding voor minvermogenden, te Utrecht, en over het gebruik der gelei uit beenderen als voedsel voor den mensch* (J.G. van Terveen and Son, 1842) 43.

⁸⁷ Simon Vissering, *Eenige opmerkingen ter zake der aardappelziekte* (P.N. van Kampen, 1845) 17-20.

This stance shows how their discourse went further than mere knowledge of nutritional science, since these men knew that potatoes were not very nutritious yet chose to defend its abundance in the Dutch diet. The most likely explanation is that these academics wrote about the potato within an agricultural and societal context and less within a primarily nutritional context like Mulder and his contemporaries. Nutrition was not vital to the worldview of Bergsma and the society of agriculture like it had been for Moleschott, Donders and Mulder.

Furthermore, Bergsma was very much concerned with the plight of people who could not afford other foodstuffs. He knew how much of the country depended upon the potato for its survival. Criticism would have been futile since these people could not change their consumption patterns. This also explains why Bergsma, just like Martius, tried to give the general population knowledge on how to salvage their good potatoes.⁸⁸ Poor relief and the elevation of living standards for the lower classes were more important to Bergsma and the society than to Mulder and his contemporaries.⁸⁹ That Bergsma stopped remarking that potatoes were rather unhealthy when the blight hit in 1845 and started emphasizing its reliability might hint that his discursive space narrowed because of the blight. This put his discourse in a sharp contrast with Mulder and his contemporaries, whose discursive space widened. This is most likely attributable to the dependency of his target audience, the lower classes, who were forced to keep on consuming potatoes regardless of the blight.

People in this cluster therefore primarily put the potato within a discourse of societal dependency and reliability. They knew the potato was not the most nourishing foodstuff, but they chose to defend its abundance in society anyway. The place of potatoes within Dutch society and the less radical place of nutrition in their worldviews most likely attributed to this stance. Despite similar scientific knowledge, these men discussed the potato differently than Mulder and his contemporaries and the blight most likely narrowed their discursive spaces.

⁸⁸ Bergsma, *Beschrijving van de verbeterde inrigting tot spijsbereiding*, 34-36.

⁸⁹ Boone, *Cornelis Adriaan Bergsma*, 52-53.

Conclusion

The place of the potato in the Dutch diet was heavily debated in the mid nineteenth century. Preachers praised it as a vital divine foodstuff for Dutch society. Mulder and his contemporaries however lamented its abundance as an unhealthy crop in society through their scientific paradigm of protein primacy combined with a radical materialist worldview. The blight provided them with space to discuss these issues. Their stance was contrasted by another group of scientists, who stressed the reliability and importance of potatoes in Dutch society. These scientists shared the view that the foodstuff was unhealthy, yet chose to defend it in their writings. Their target audience and the absence of a radical materialist worldview most likely account for these differences and narrowed their discursive space.

With this study, I have shed new light on a foodstuff that has been a vital part of Dutch society for centuries. My findings show that research into potato consumption and food culture in general must be regarded as a multifaceted subject. The stances of the different authors and scientists can only be explained by looking at the intersection of social, scientific and religious motives. The mainly economic and social discussions of potato consumption must therefore be complemented with studies that also include these wider cultural frameworks in their narratives.

This article did not show a finished story however, since the role of potatoes in our diets only grew after the 1850s.⁹⁰ Based on the results presented here, this growth in importance during the nineteenth and twentieth century should not be regarded as a definite unilateral success story. Further research into these periods will most likely sprout new valuable insights on potato consumption. For a foodstuff so abundant in Dutch society, we still have much to learn about it. The recent revaluation of potato-history is therefore a most welcome start.

⁹⁰ Jobse-van Putte, *Eenvoudig maar voedzaam*, 227-238.