



Fresh Potato Suppliers Association **FPSA**



incorporating



Potato storage sprout suppression in Great Britain: current position in relation to availability of new suppressants

INDUSTRY SITUATION AND IMPACT

The British potato industry remains in a state of great uncertainty and at significant risk of crop wastage and economic failure as a result of minimal progress on the availability of suitable sprout suppression chemistry.

Current processes are not adequately addressing the present challenges and degrees of concern facing the potato industry following the loss of chlorpropham (CIPC), delayed approval of suitable replacements and distortion of the market due to unfair restrictions placed on GB potatoes in comparison with imports.

This position has persisted across the industry for at least two seasons and is likely to severely impact a third following the loss of approval of CIPC (effective 8 January 2020). CIPC was widely used by the industry and in UK made up more than 90% of post-harvest applications to potatoes.

Trials by AHDB at Sutton Bridge CSR over three seasons have indicated that 1,4-Dimethylnaphthalene (DMN) offers a comparable and potentially improved level of efficacy to CIPC. DMN is widely available in the EU (it is currently authorised for use in more than 20 EU Member States) yet remains unavailable in the UK (except as described below), despite requested data submissions being completed by the applicant, DormFresh Ltd, in March 2020.

As DMN has not been authorised for unrestricted use in the UK in 2020/21, an artificial market distortion has been created. Currently a significant volume of product (both raw materials and finished product) is being imported from the EU to enable industry to ensure cost-effective supply of market needs. Import of raw materials from Europe (which *can* be legally treated with DMN) to satisfy processing demand is estimated to represent 20-25% of processing volume, compromising trade balance ambitions with associated costs to supply chains and potentially increased risks of non-endemic disease being imported (e.g. ring rot, brown rot or Epitrix).

Without authorisation for DMN, it is likely that long-term storage of UK potatoes will not be sustainable for many growers. In 2020/21, crops have remained in store due to, in many instances, an unusually successful treatment of maleic hydrazide (MH) as weather conditions

were exceptionally good for uptake last summer. MH was identified in SBCSR work as a key foundation treatment needed for storage. If successfully used, it can provide valuable residual sprout control until January/February and, in 2020, MH use is estimated to have increased from ~15% of stored potatoes to over 80% in just one season. This increase is seen as an attempt to achieve some residual protection against sprouting given little confidence in the chemical sprout control options available for use in storage.

However, the use of MH is not universally accepted as a way forward. Some fresh potato markets and their customers, in particular, are reluctant to accept use of a chemical which is translocated by the plant into the tubers and does not decline during storage. That said, it should be acknowledged that DMN, as an alternative, will leave a residue and therefore be subject to an MRL.

Use of refrigeration to lower storage temperatures (to as low as 2°C) of fresh market crops is also not wholly acceptable as it will raise the risk of acrylamide formation in household-prepared potatoes, heighten the prospect of blackheart and increase the carbon footprint of storage.

Much of the industry is already reeling from a season of low prices, reduced sales volume and higher wastage due to the impact of Covid at the end of 2019/ 20. In the current season, the average potato price is currently down 13% year on year as producers come under pressure from a combination of continuing low demand and depressed prices (see table).

AHDB potato stocks and average price by sector 2020/21

(tonnes)	2020 Production	End-November 2020 Stocks	End-January 2021 stocks	Average Free-Buy Potato Weekly median price 2020/21 season £/t	GB Weekly Average Potato price £/t as at 23/03/21
Fresh bags	222,988				
Fresh chipping	606,723	415,845	287,628	£122	£178 (-13% YOY)
Pre-pack	2,091,763	1,575,030	965,386	£104	
Processing	1,926,205	804,691	509,060	£60	

Source: AHDB Potato Data Centre <https://potatodatacentre.ahdb.org.uk/reports/industry-statistics/45>

Also, where long-term storage is continuing this season, the poorer efficacy of current chemical control options already being observed in processing and fresh chipping stores will likely result in significantly poorer quality products. This will mean there is a significant increased risk that stored potatoes cannot be sold for human consumption and instead must be used for animal feed, anaerobic digestion or, in a worse case, sent to landfill.

The loss of CIPC has left the potato processing and fresh chipping supply chains with many long-term stocks needing as many as five or six chemical treatments with currently-approved product at a cost of up to £27 per tonne (compared with £6 per tonne for CIPC) to maintain their quality for market. In addition, there are concerns that some of the management steps required to optimise performance of the new product is adding significantly to storage losses, notably weight (moisture) loss and compression bruising. As yet, there is little robust data on this, but the extended ventilation required after application is increasing fan use by as much as 60% and, with weight loss broadly proportional to fan running times, the impact cannot be ignored; increasing 8% weight loss to as much as 12½% is significant, potentially adding a further £5-£8/tonne to storage costs. Overall, therefore, the industry's reliance on a very small number of expensive but less effective alternative sprout suppression products, which are

having to be applied many more times than previous options, is a wholly unsustainable position. Other products available to competitor countries must come on to the market without restrictions and do so quickly to keep growers in business to supply important markets from long-term storage at a realistic and sustainable price. In short, the signatories to this paper have concluded that, for the UK industry to remain financially viable, it requires DMN (and potentially other sprout suppression products) to be fully authorised as soon as possible.

If DMN is not able to be authorised in a timely manner for use in the UK in 2021/22, it is expected that there will be significantly increased costs for UK businesses and consumers, an increased carbon footprint and a knock-on effect throughout the whole UK potato supply chain. There will be impact on seed stocks (seed supply chain is worth around £100million to the economy), agronomy, plant protection products, machinery, land availability, haulage, packaging, other ingredients (oil & flavours), and ultimately a direct effect on employment. Farm businesses will restructure their enterprises to accommodate fewer hectares of potato crops, meaning rural employment will be reduced and making it unlikely that these hectares can be returned to potato production in the future.

DormFresh Ltd have an application for full approval in progress at CRD, York and have now been notified that the target date for this to be completed is further delayed to 6 October 2021, taking DormFresh's attempts to get approval for this product into its seventh year. As a result of these further delays, the industry is facing a period of long term storage in the 2020/21 season – and potentially 2021/22 too – with very few options for sprout suppression since none of the current products has a proven track record in long-term storage for processing or fresh potatoes for food service/chip shops. Even use in fresh crop storage for retail has had the backstop of CIPC to rely on (especially for controlling sprouting during supermarket shelf life) in previous years but that is no longer there.

EMERGENCY APPROVAL

Moves to address this position for the current storage season ending in July 2021 through the acquisition of an *emergency approval* (EA) for DMN were necessarily cut back to just the long-term crisping/French fry sectors to reduce tonnage from an initial 750,000 tonnes to under 200,000 tonnes. After a lengthy application process and extensive dialogue with CRD, an emergency approval (EA) was granted in December 2020 for the use of DormFresh 1-4 SIGHT® (DMN) for use on selected varieties of potatoes destined for processing from long term storage (Mar-Jun 21).

Low use in 2020/21 season

The emergency authorisation for use of 1-4 SIGHT® this season (which expires at the end of May) has unfortunately resulted in just 8 long-termed stored crops (10650 t) destined for processing being treated with DMN to date. This has arisen from a combination of factors which have prevented crops from meeting strict criteria set as conditions of the emergency approval. Failure to meet all the criteria prevents crops from being treated with DMN. The key barriers have included:

- Maleic hydrazide (MH) residues in the target crop greater than 12 mg/kg. Many MH treatments in 2020 resulted in higher-than-expected residues., (Access to routine MH residue data assessments has been requested from stakeholders).

Note: MH has only a short 14-day window for effective use between 3-5 weeks before desiccation and the closer application is to the end of that window, the greater the risk of poor uptake. The product cannot be used without a 24 hour dry weather period and it cannot be applied in temperatures over 26 C on a stressed crop without loss of efficacy. If it is hot and dry for a period of 7-10 days, or if the optimal 2 week window is affected by regular rain or showers, the efficacy of uptake is severely impacted.

- An inability to meet local Environment Agency requirements in relation to DMN levels in wash water that is disposed of from on-farm washing or from industrial processing plant.
- An inability to satisfy stewardship assurances that disposal of treated waste will not enter livestock feed chains.
- Insufficient volume of crop meeting the criteria above to make isolation of waste and recycled by-products within factories cost-effective.

Clearly, the levels of controls deemed necessary and imposed as part of this emergency authorisation have been too severe to allow the anticipated number of crops in long-term storage to be treated with DMN. In no case has this situation arisen as a result of crops not being in need of sprout suppression; the barriers to treatment have all come from mitigations requested as part of the EA.

FEEDBACK FROM KEY PARTIES

Due to the uncertainties outlined above creating an increasing level of concern in the industry, a request was made by AHDB to the key parties involved in DMN authorisation, HSE's Chemical Regulation Division (CRD) and the applicant, DormFresh Ltd, for feedback on how they felt the industry should move forward.

CRD have expressed a [verbal] preference for the industry to submit a further Emergency Approval application. It is, however, unclear whether any of the 2020/21 conditions which have so restricted its use could be changed and there is therefore reluctance on the part of the applicant to provide supplies of DMN if the expected sales will not materialise. In separate conversations, DormFresh Ltd have indicated to AHDB that they do not wish to repeat the current Emergency Approval. They may support an application if the MH and animal feed restrictions could be removed, as this would allow greater usage. However, their preference is to put their resources behind their current application for full approval now they have a clear timetable for submission and consideration of their data package.

The current date of 6 October 2021 for completion of this approval application for 1-4 SIGHT® is of great concern for the industry. DormFresh have indicated that this timeframe would mean that product could not be made available for use on crop for storage in 2021/22 until December. This puts the product outside of the optimal window for first application. As a dormancy enhancer, 1-4 SIGHT needs to be applied close to harvest time in the period from September to November.

The industry is therefore keen to discuss, as a matter of urgency, measures which might be taken to expedite the availability of a fully approved DMN product for use in long-term storage for the GB potato industry in 2021/22.

A summary of our assessment of the current position and associated risks is provided in the table at Annex 1. European approvals of DormFresh DMN products are shown at Annex 2.

AHDB
British Potato Trade Association
Fresh Potato Suppliers' Association
National Farmers Union
National Farmers Union of Scotland
UK Potato Processors' Association
 representing the British potato industry

14 April 2021

Annex 1: SUMMARY TABLE OF DMN APPROVAL STATUS FOR CURRENT OPTIONS

DormFresh Ltd 1-4 SIGHT® DMN (1,4-dimethylnaphthalene)	Crops treated under 2020/21 Emergency Approval	No further approvals	Further Emergency Approval of for 2021/22	Full Approval of product in UK
Status >	Current season to June 21		CRD preference?	October 2021 target
Crop treated with 1-4 SIGHT®	Only 10K tonnes treated of potential 192K tonnes	IMPORTED CROPS ONLY	Subject to maximum tonnage of specified varieties of UK crop	All eligible crops
In-use restrictions on varieties / tonnages	Yes	None	Yes	None
Use limited by maleic hydrazide threshold	Yes (<12ppm MH)	No	Yes But could threshold be raised?	No
Local control of on-farm and factory washing	Yes	None	Yes	Allowed? (subject to data)
Disposal of waste from treated crop through livestock feed chain	Not permitted	Allowed	Not permitted If data are with CRD, could this be changed?	Allowed? (subject to data)
RISKS				
Impact on growers	Current EA has offered little to them	European competition from DMN-treated imports	Only a small proportion will benefit: most growers will have no DMN	Significant reduction in risk and cost - but potentially too late for 21/22
Impact on industry	High costs for small throughput	Increased imports? Unsustainable costs with alternative	Protects only long-term processing (not chip shop)	Quality and consistency boosted - if timing correct
Impact on markets	Minimal as tonnage treated is low	Unregulated imports continue	Limited to <15% of market	Good sprout control/ more 'level playing field' with Europe
Impact on applicant	High costs for few sales	–	Could be a repeat of 20/21	

Annex 2: DMN PRODUCT AUTHORISATIONS EUROPE (courtesy of DormFresh Ltd)

Product Authorisations in Europe Today



Status 19 Feb 2021

Country	Approved	Trademark
The Netherlands	03 July 2015	1,4SIGHT®
Austria	20 May 2016	1,4SIGHT®
Belgium	09 Feb 2017	1,4SIGHT®
France	15 Sept 2017	DORMIR®
Germany	16 Aug 2018	1,4SIGHT®
Ireland	02 Oct 2018	1,4SIGHT®
Poland	23 Oct 2018	1,4SIGHT®
Luxembourg	09 Oct 2019	1,4SIGHT®
Portugal	11 Apr 2020	1,4SIGHT®
Sweden	19 May 2020	1,4SIGHT®
Switzerland	10 June 2020	DORMIR®
Latvia	15 July 2020	1,4SIGHT®

Country	Approved	Trademark
Czech Republic	10 Aug 2020	1,4SIGHT®
Cyprus	07 Sept 2020	1,4SIGHT®
Finland	08 Sept 2020	1,4SIGHT®
Croatia	29 Oct 2020	1,4SIGHT®
Norway	04 Nov 2020	1,4SIGHT®
Serbia	09 Nov 2020	1,4SIGHT®
Denmark	23 Nov 2020	1,4SIGHT®
Romania	24 Nov 2020	1,4SIGHT®
Lithuania	26 Nov 2020	1,4SIGHT®
Country	Approved	Trademark
United Kingdom	08 Dec 2020	1,4SIGHT®
Emergency authorisation		

- Note: use of DMN products in France and Denmark are subject to restrictions on waste disposal into the livestock feed chain.

/ends