

<b>Title:</b> Introduction of herd restrictions to address Bovine Viral Diarrhoea (BVD)	<b>Regulatory Impact Assessment (RIA)</b>	
	<b>Date:</b> 13 October 2022	
	<b>Type of measure:</b> Secondary legislation	
<b>Lead department or agency:</b> Department of Agriculture, Environment and Rural Affairs (the Department)	<b>Stage:</b> Consultation	
	<b>Source of intervention:</b> Domestic (Northern Ireland)	
<b>Other departments or agencies:</b> N/A	<b>Contact details:</b>	
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## Summary Intervention and Options

**What is the problem under consideration? Why is government intervention necessary?** (7 lines maximum)  
BVD is a production disease in cattle which is endemic in NI. It compromises animal health and reduces the productivity and profitability of affected herds. The NI BVD eradication programme is led by industry and supported by the Department. Legislation was introduced in 2016 which required the tagging and testing of calves and the isolation of any infectious animals. Since then, the incidence of BVD has reduced by 50%. However, progress has stalled over the last 12 months, mainly due to the retention of persistently infected (PI) animals and transmission of infection between herds. Further measures are required to eradicate BVD and the imposition of herd restrictions is considered the most effective tool to be used against the disease.

**What are the policy objectives and the intended effects?** (7 lines maximum)  
The overarching objective of introducing herd restrictions is to contribute to the eradication of BVD from NI. It is intended to be of benefit to farm businesses across NI by reducing the losses they incur due to BVD and, thereby, increasing the profitability they derive from having healthier individual animals and herds. The proposed policy aims to maintain and increase the competitiveness of farmers here with their respective counterparts in the Republic of Ireland (ROI) and in Scotland, both of whom are key trading partners and are working towards eradicating BVD. It also aims to bring societal benefits by reducing emissions and antibiotic use.

**What policy options have been considered, including any alternatives to regulation? Please justify preferred option (further details in Evidence Base)** (10 lines maximum)  
The two options considered are:  
**Option 1:** Do nothing i.e., maintain the existing BVD controls.  
**Option 2:** Introduce herd restrictions as an additional disease control measure.  
Option 2 is the preferred option as it is widely agreed that the imposition of herd restrictions is the most effective control measure against BVD. Restricting herds which retain animals with positive, inconclusive or unknown BVD statuses and requiring the testing of pre-2016 animals will reduce the risk of disease spread to other herds. It will encourage the prompt removal of persistently infected animals which will reduce disease spread within herds. Taking no action will result in BVD levels remaining at existing levels or indeed increasing with repercussions for animal health, farm productivity, trade and the environment. There was limited adherence to recent efforts by Animal Health & Welfare NI to encourage herd keepers to voluntarily restrict movements from herds following receipt of a positive BVD test. Mandatory control measures are, therefore, required.

<b>Will the policy be reviewed?</b> Yes	<b>If applicable, set review date:</b> 01/04/2026
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Cost of Preferred (or more likely) Option				
Total outlay cost for business £	Total net cost to business per year £		Annual cost for implementation by Regulator £	
Less than £103k over 5 years	Less than £20.5k		£48.4k	
<b>Does Implementation go beyond minimum EU requirements?</b>			N/A	N/A
<b>Is this measure likely to impact on trade and investment?</b>			YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
Are any of these organisations in scope?	Micro <input checked="" type="checkbox"/>	Small <input checked="" type="checkbox"/>	Medium <input type="checkbox"/>	Large <input type="checkbox"/>

The final RIA supporting legislation must be attached to the Explanatory Memorandum and published with it.

Approved by:

Date:

## Summary: Analysis and Evidence

## Policy Option 2

Description: Costs required to introduce herd restrictions to support the eradication of BVD.

### ECONOMIC ASSESSMENT (Option 2)

Costs (£m)	Total Transitional (Policy) (constant price)	Years	Average Annual (recurring) (excl. transitional) (constant price)	Total Cost (Present Value)
Low	Optional		Optional	Optional
High	Optional		Optional	Optional
Best Estimate			<£20.5k	<£103k (over 5 yrs)

#### Description and scale of key monetised costs by 'main affected groups' Maximum 5 lines

The costs to industry are expected to be minimal. Out of the 20,474 herds in NI<sup>1</sup>, initial expectations are that a maximum of 40 herds would be restricted each year due to a positive or inconclusive result. An additional 120 herds would be restricted annually due to animals with unknown BVD statuses. These figures are expected to decrease as pre-emptive action is taken to remove PI animals. If a herd is restricted, there may be additional feed, farm labour and housing costs for those animals that may have otherwise moved. These additional costs will vary widely depending on individual farm circumstances but may be offset by an increase in value of restricted animals. Moves to slaughter or for disposal would not be restricted, which would also reduce potential costs. There would be a one-off cost for keepers to test pre-2016 animals without a known BVD status, estimated to amount to £11K in total across all keepers.

#### Other key non-monetised costs by 'main affected groups' Maximum 5 lines

Psychological impact of having herd restricted. Time costs arising from delay in sales and cash flow if herd is restricted.

Benefits (£m)	Total Transitional (Policy) (constant price)	Years	Average Annual (recurring) (excl. transitional) (constant price)	Total Benefit (Present Value)
Low	Optional		Optional	optional
High	Optional		Optional	Optional
Best Estimate			At least £333k, to £1,239k pa	£1,663K to £6,196K (5 years)

#### Description and scale of key monetised benefits by 'main affected groups' Maximum 5 lines

Increased profitability of farms due to improved animal health and productivity. Healthier animals mean reduced veterinary costs and antibiotic use. Removal of positive animals will have long term savings and benefits for the herd as opposed to high financial impact should BVD spread throughout the herd. It is estimated that BVD is costing the economy between £25 and £30 million per year.<sup>2</sup> Savings to farmers in not having to replace diseased animals would be £222-£312 for beef calves and £922 for dairy heifers.<sup>3</sup> On top of this, there would be savings of disposal costs of £35 per animal.<sup>4</sup>

#### Other key non-monetised benefits by 'main affected groups' Maximum 5 lines

Improved fertility of breeding cattle and improved animal welfare. Carbon footprint of cattle industry reduced. Stress reduction for herd keepers (emotional impact of removing seemingly healthy cattle). Further progress towards eradication of BVD would enhance the NI reputation for good animal health and high-quality products and potentially lead to overall trade benefits for the industry.

#### Key Assumptions, Sensitivities, Risks Maximum 5 lines

It is assumed the number of herds would remain constant (~20,474), and that the number of cattle would also remain constant (~1,681,991).

### BUSINESS ASSESSMENT (Option 2)

Direct Impact on business (Equivalent Annual) £m			
Costs: < £103K	Benefits: > £1,663k to £6,196K	Net: > £1,560k to £6,093k (over 5 yrs)	

<sup>1</sup> <https://www.daera-ni.gov.uk/articles/agricultural-census-northern-ireland>

<sup>2</sup> Cost to industry, estimates in Agri-land article July 21, <https://www.agriland.ie/farming-news/ni-bvd-maps-where-is-your-nearest-pi-animal/>

<sup>3</sup> Agricultural Census in NI 2019 <https://www.daera-ni.gov.uk/publications/agricultural-census-northern-ireland-2019>

<sup>4</sup> Estimating the Savings to Farmers from Eradicating BVD

<https://www.gov.scot/publications/eradicating-bvd-estimating-the-savings-to-farmers/>

## Cross Border Issues (Option 2)

**How does this option compare to other UK regions and to other EU Member States (particularly Republic of Ireland)** Maximum 3 lines

Herd restrictions were introduced as a disease control measure for BVD in the Republic of Ireland in 2016 and in Scotland, in 2015. They are also proposed as a control measure for Wales.

### PROBLEM UNDER CONSIDERATION

Bovine Viral Diarrhoea (BVD) is a production disease in cattle which is endemic in NI. It compromises animal welfare and reduces the productivity and profitability of affected herds. Bovines that are infected with the disease during their lifetime can suffer symptoms such as fever, loss of appetite, respiratory disease and diarrhoea for a transient period of approximately three weeks at which point they recover. However, calves that become infected with the virus approximately between the 30<sup>th</sup> and 120<sup>th</sup> day of gestation become persistently infected (PI). They do not develop immunity to the disease and shed the virus at high levels for life. As such, they are the most significant source of infection within a herd. PI calves may look normal but the majority die before the age of two, without reaching breeding age or slaughter weight. Given that they are highly infectious, the retention of PIs by a relatively small number of herd keepers has played a key role in hindering progress on BVD eradication in NI. The policy proposals made by the Department are aimed at identifying and encouraging the prompt removal of PI animals.

#### Current legislative requirements

The BVD Eradication Scheme Order (NI) 2016 ('the BVD Order') contains a number of measures aimed at reducing levels of BVD in Northern Ireland (NI). It requires herd keepers to tag and test all calves for presence of BVD virus (BVDV) as soon as is possible after birth or at least within 20 days. Bovines that enter herds after birth also need tested as soon as possible or within 20 days of entry to the herd, either by blood or tissue sampling. Any animals that test positive (or whose tests are inconclusive) must be isolated from the rest of the herd. There is no requirement to remove a positive animal. However, individual animals that have not received a BVD negative test result cannot be moved off farm other than to slaughter, for disposal as animal by product or under licence issued by the Department. Animal Health & Welfare, NI, an industry-led, not-for-profit organisation is responsible for the day-to-day administration of the statutory Scheme.

#### Progress to date

Since the introduction of the BVD Order, levels of BVD have significantly dropped. Prevalence is now 50% lower than in 2016. Despite the positive progress that has been made over the last few years to address the disease, the incidence of BVD in NI has increased during the last 12 months from its lowest levels in 2020. As of 4 October 2022, there were 141 positive animals within 98 herds and between July 2021 and June 2022 over 1,600 BVD positive animals were disclosed. The virus, therefore, remains virulent in NI and, whilst PI animals are retained, there is a significant impediment to eradicating it. The application of herd restrictions in other jurisdictions, such as Scotland and the ROI, has proven their effectiveness in controlling and reducing levels of disease and the Department considers it necessary for similar measures to be applied here.

### RATIONALE FOR GOVERNMENT INTERVENTION

The Department's proposals for BVD herd restrictions align with the draft Programme for Government (PfG) and the Department's vision of '*Sustainability at the heart of a living, working, active landscape valued by everyone*'. They support the Green Growth Strategy for NI and commitments contained in the Climate Change Act (NI) Act 2022. Reducing levels of BVD in NI will bring benefits in the following areas:

- *Animal Welfare:*

BVD can have a significant impact on the welfare of animals, particularly those persistently infected with BVD. PIs have suppressed immunity, allowing other infections to become established, and many fail to thrive. They can develop Mucosal Disease before they reach productive age, resulting in premature death. PI animals are also susceptible to other infections, particularly scour and pneumonia. The reduction of BVD prevalence, therefore, delivers animal welfare benefits. The Department has a statutory responsibility for the welfare of farmed animals and aims, where possible, to improve animal and herd welfare standards.

- *Productivity:*

Production diseases, such as BVD, have a big impact on productivity, according to the World Health Organisation (OIE) over 20% of animal production losses are linked to animal diseases.<sup>5</sup> At farm level, healthy animals increase productivity and reduce inefficiencies including mortality rates and veterinary costs making farms more profitable. At industry level, a healthy livestock population requires less intervention to tackle disease and provides enhanced opportunities for trade and market access. BVD places an economic burden on industry; estimates from July 2021 put its cost to NI industry at between £25 and £30 million a year.<sup>2</sup>

- *International trade:*

Trade in animals is subject to internationally agreed rules, with BVD listed by the OIE as a disease of importance in animal trade. The EU Animal Health Law (AHL) came into effect in April 2021 and BVD is listed as a Category C disease within it. This allows EU Member States to apply restrictions on the import of cattle based on BVD status, making BVD freedom a potential trade requirement. The ROI BVD Eradication programme was approved under the AHL by the European Commission in July 2022 and as a result exporters have to meet additional criteria before exporting cattle for breeding or production purposes to the ROI. The ROI aims to achieve 'BVD Free Status' by 2023. If secured, this will give rise to some further trading implications for cattle moving from NI to the ROI. This adds further impetus for the imposition of herd restrictions. Furthermore, sharing a common approach with the ROI and Scotland would aid interaction between the three jurisdictions in relation to BVD programmes.

- *Environment:*

The reduction of greenhouse gas (GHG) emissions is an environmental indicator under the draft PfG. Agriculture in NI, mainly grazing livestock, is a major contributor to GHG production and, in 2017, was the largest sector in terms of NI GHG emissions (27%). It is recognised that poor cattle health and diseases, such as BVD, lead to production inefficiencies and GHG emissions (most notably methane) from livestock. A 2015 study commissioned by DEFRA highlighted that BVD was the third highest disease driver of GHG emissions arising from milk production and the highest contributing condition to emissions arising from beef production.<sup>6</sup> The report also noted that, following intervention, GHG emissions which are a result of BVD could be reduced by 90%.<sup>8</sup> Methane is an important GHG with a global warming potential of 28 times greater than CO<sub>2</sub> over 100 years, and approximately 80 times more warming than CO<sub>2</sub> over the next decade<sup>8</sup>. Some 45% of UK methane emissions come from ruminants<sup>7</sup>. BVD is a disease considered to negatively impact methane emissions from ruminants and has been identified as a priority health condition for the industry in a recent report by the UK's Ruminant Health and Welfare Group<sup>8</sup>.

- *Antimicrobial resistance (AMR):*

BVD can lead to other infections and conditions that are treated with antibiotics. Reducing the use of antibiotics in farm animals is a key Departmental aim and aligns closely with the public health outcome of the draft PfG. The five-year NI AMR Action Plan, developed by the Department of Health, DAERA and the Food Standards Agency, NI, identifies the continued support, promotion and regulation of disease eradication programmes (including BVD) as one of the ways to help lower the burden of animal infection.

## POLICY OBJECTIVE

The overarching objective of the proposed policy is to contribute to the eradication of BVD from NI. It is recognised that eradication of BVD is a longer-term commitment. The policy proposals made aim to:

- reverse the recent rise in incidence of BVD;
- protect herds from BVDV;
- support industry in tackling BVD;

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<sup>5</sup> <https://www.woah.org/en/oie-wahis-a-new-era-for-animal-health-data>

<sup>6</sup> Study to Model the Impact of Controlling Endemic Cattle Diseases and Conditions on National Cattle Productivity, Agricultural Performance and Greenhouse Gas Emissions, February 2015

<http://randd.defra.gov.uk/ProjectDetails?ProjectID=17791&FromSearch=Y&Publisher+1&SearchText=AC120&SortString=ProjectCode&SortOrder=ASC&Paging=10#DescriptionAC>

<sup>7</sup> [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/835762/agriclimete-9edition-02oct19.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/835762/agriclimete-9edition-02oct19.pdf)

<sup>8</sup> 'Acting on Methane: opportunities for the UK cattle and sheep sectors' produced by Moredun Research Institute in conjunction with Ruminant Health and Welfare April 2022 <https://moredun.org.uk/wp-content/uploads/2022/04/SO-634-Ruminant-Report-Methane-April-2022-web.pdf>

- reduce the economic burden of BVD to industry and increase profitability of farm businesses; and
- reduce the environmental impact of BVD and its contribution to AMR.

## OPTIONS

### 1: Do nothing (Maintain existing measures under the BVD Order)

As noted, the BVD Order contains a number of measures aimed at reducing levels of BVD in NI and good progress has been made to date. However, without the imposition of herd restrictions, the Department is of the view that BVD numbers will remain constant or increase, with little prospect of the disease being eradicated.

AHWNH has made efforts to encourage herd keepers to voluntarily restrict herd movements for a period of 21 days following a positive test result. Most participating keepers did follow its advice to remove PI animals from their herds. There was, however, limited adherence to its advice to cease selling other cattle while the PI animal remained in the herd or during the weeks immediately after its removal. Worryingly, in a significant number of cases, the dam of the positive animal was sold to another herd within a short period after the PI animal was removed. The Department is of the view that this exercise, although admittedly limited by uptake, demonstrates that compulsory herd restrictions are required to ensure that the BVD virus does not move into herds with no previous history of BVD.

This option is not, therefore, recommended.

### 2: Introduce herd restrictions as an additional disease control measure

The consultation document seeks views on proposals to impose herd restrictions as a further disease control measure to reduce BVD levels in NI and contribute to its eradication. A summary of these proposals is included below.

#### ***Restrictions on herds with positive / inconclusive animals***

It is proposed that herd restrictions should be placed on herds that retain animals with a positive or inconclusive BVD test result. The Department proposes to give herd keepers a grace period of 28 days to remove the positive animal from the herd to avoid restrictions being put in place. As the disease situation improves the grace period would be gradually removed over one to two years. Eventually, a herd would be immediately restricted on disclosure of a positive test result.

Should a herd be placed under restriction, it is proposed that the restrictions should remain in place for 21 days after the positive animal is removed from the herd and would be extended if any further positives are disclosed during the restricted period. All cattle in the herd should have a BVD negative status before the restriction would be lifted. If an inconclusive animal subsequently tests negative, restrictions would be removed immediately.

#### ***Restrictions on herds with unknown status animals***

The Department is considering taking a power to allow it to restrict herds retaining animals of unknown BVD status (BVDUs). If it were to take such a power, it envisages initially placing restrictions on herds with a large number of BVDUs. As the disease situation improves, the criteria for application of restrictions would reduce until eventually all herds not fulfilling the legislative requirement to test animals within their herd would face restriction. It is of the view that these restrictions should be removed as soon as all BVDUs in the herd test negative for BVD.

#### ***Retained restrictions on potentially trojan females***

Female bovines exposed to BVD virus between approximately day 30 and 120 of gestation are at risk of becoming trojan females- i.e. pregnant animals that are not persistently infected themselves but which carry a PI calf. The Department is, therefore, also consulting on a proposal to restrict the movement of breeding age females that were in a herd when a positive animal was detected. It is proposed that restrictions should be in place for 41 weeks following removal of the last positive animal unless the female animal:

- has calved (with BVD negative result for calf);

- has received BVDV antigen and antibody negative results; or
- tested positive for antibodies against BVDV before insemination preceding the current gestation.

This proposal aims to reduce the risk of PI calves in a herd. It is not proposed that it would be implemented immediately but as soon as the relevant adaptations can be made to the Department's systems. At that time, it is expected that the disease situation should have improved significantly with fewer herds restricted.

In all scenarios above, it is within the herd keepers' gift to avoid a restriction being placed on his/her herd. It is therefore of the utmost importance that herd keepers ensure all animals are tested quickly and, when a PI animal is disclosed, act swiftly to remove the animal to prevent spread of disease. Exceptions to the movement restrictions would also be available, which should lessen the financial impact on farmers. These include movements:

- directly to slaughter;
- for disposal as an animal by-product;
- under licence for exceptional circumstances such as welfare reasons or to allow the movement of a breeding bull into a herd when considered justified.

Subject to the outcome of the consultation exercise, the Department would intend to take steps to ensure that keepers are made aware of the legislative provisions required to give effect to herd restrictions before they come into force.

This is the preferred option. Herd restrictions are the single eradication measure considered most likely to have the greatest impact in reducing BVD levels. This is substantiated by the downward trend of BVD in the ROI and Scotland following the introduction herd restrictions there. Although there may be an initial cost to farmers in terms of removing PI cattle, the Department is satisfied that it will ultimately result in net savings for them. Further encouraging herd keepers not to retain PI animals will reduce the likelihood of the disease spreading within herds and to other herds, thus contributing to the overall aim of eradicating the disease.

### ***Herds with pre-2016 BVD animals***

The current BVD Order requires keepers to test all calves born, or brought into a herd, since 1 March 2016. When a calf is tested with a negative result, the dam will also be negative. Therefore, since 2016, dams of negative calves have been allocated an 'indirect negative' status on the Department's systems. As such, after six years of compulsory testing, most pre-March 2016 females now have an allocated indirect negative status. However, there remains a relatively small pool of animals born before March 2016 which have no BVD status.

The Department considers it possible that, among these older animals, there are a small number of undisclosed PIs, which may be maintaining infection in some herds and are presenting a source of infection to other herds when animals are moved. It is considered essential that, at this stage of the eradication scheme, these animals should be BVD tested. The Department, therefore, proposes to make it a legislative requirement to test animals born, or brought into a herd, before March 2016 which currently do not have a BVD status.

## **MONETISED COSTS**

If herd restrictions were to be applied to NI, there is the potential for a short-lived financial effect on those herds that would be subject to restriction. Therefore, it is important to analyse the impact of each element of the proposed restrictions on herd keepers.

### ***Restrictions on herds with positive / inconclusive animals***

In the 12-month period to June 2022, there were 1,648 positive animals within approximately 800 herds. If all herd keepers retained their positive animals, it would result in restrictions being applied to approximately 66 herds per month.

Rather than retaining their positive animal, however, most herd keepers euthanise the animal soon after they receive a positive test result. As of 3 October 2022, only 28 herds had a positive animal still in their herd more than 28 days after the positive test date. During the 12 months to October 2022, it is estimated that a total of around 130 herds retained a positive animal for 28 days or more after a positive test result. This represents 16% of the 800 herds with a positive animal in the previous 12

months, which equates to about 0.5% of all herd keepers. This indicates that, as the majority of farmers are currently removing BVD positive animals, herd restrictions would impact on a very small percentage of farmers.

It is expected that publicity in advance of the new requirements coming into force would encourage the majority of herd keepers that are currently slow at removing PI animals to remove them within the proposed 28-day grace period to avoid use of restrictions. There should be no additional cost to herds that do remove PIs within that period. The Department, therefore, projects that only 40 herds would need to be restricted in the first year. As the Department envisages reducing the 28-day grace period as the disease situation improves, it is not expected that the number of herds restricted would decrease in subsequent years. This is because herds would have less time to remove PI animals, but at the same time fewer herds would have BVD positives. Therefore, overall, it is expected that 40 herds may need to be restricted for the five years immediately following implementation.

If a herd is subject to a restriction due to a BVD positive animal in the herd, this would last for at least 21 days after the PI animal is removed. Within this period, movements out of the herd would be prevented except directly to slaughter or for disposal as an animal by-product or under Departmental licence. It is possible that some herds that are restricted will not be adversely impacted as they do not sell animals apart from for slaughter. However, those that need to sell animals would be faced with the additional costs to cover feed, bedding; housing, farm labour and potential veterinary costs while the animal are restricted. The delay in movements could also impact on cash flow.

It is not possible to provide a definitive figure on the anticipated costs. However, taking into account the feed and bedding costs and assuming that a restricted herd is prevented from selling 5 animals during a restricted window of 21 days, the potential cost of the restrictions to a herd keeper could be:

- 5 animals x 21 days x £4.35 (*estimated cost per day to keep an animal*) = **£456.75**

The cost per day to keep animals is subject to many variables and dependant on the season. The estimated daily cost of £4.35 has been calculated as follows using recent costs from *Teagasc Ireland*<sup>9</sup>:

£1 feed, sileage,  
£0.35 minerals, vaccines  
£3 sundry costs such as straw.

This cost does not, however, account for an expected increase in value over the restriction period as the animals continue to grow. Therefore, while costs for keeping the animals during a period of restriction would be presented, they could be offset by an increase in animal value.

However, on a worst-case scenario, assuming no increase in animal value, if 40 herds are restricted in any year, and on the basis of the above calculations, the cost of the policy proposals could be approximately £18k per annum. However, as noted above, it is expected that the overall financial impact of the restrictions on herds would be much less.

Table 1 below sets out the expected costs for these restrictions over a five-year period. This is based on the assumption that 40 herds continue to be restricted per year for five years. As noted above, this accounts for a reduction in the grace period, which would in turn increase the risk of restrictions being applied, while at the same time an improving disease situation could result in fewer positive herds. On this basis, the total costs of restrictions over a five-year period would be approximately £91,350.

It is anticipated, however, that the number of herds affected would probably be much lower than these estimated numbers, given publicity during the lead in time before herd restrictions are implemented as well as the ongoing communications from AHWNI to all herdowners as BVD positive animals are disclosed. Herd keepers faced with the possibility of restrictions are likely to take the action necessary to avoid them and quickly remove the PI animal from their herd. In any event, given communications provided to herd owners, no herds need be subject to restriction if a PI animal is disposed of quickly.

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<sup>9</sup> The cost of keeping suckler cows in Ireland, *That's Farming*, April 2021

<https://thatsfarming.com/farming-news/cost-of-keeping-suckler-cows-in-ireland/#:~:text=If%20we%20take%20a%20net%20profit%20target%20on,of%20the%20biggest%20bearings%20on%20the%20cow's%20cost.>



The costs of restricting herds because of inconclusive animals is expected to be insignificant. In the 12 months to August 2022, only 37 animals received an inconclusive result. It is very likely, therefore, that no herds would need to be restricted in any year because of inconclusive animals. If they were, any costs arising would, in most cases, be considerably less than for PIs, as it is proposed that those restrictions would be lifted as soon as the animal tested negative. As 8% of the inconclusive animals last year returned a positive sample on re-sample (3 animals), the likelihood that these animals would be retained over the proposed initial 28-day grace period is minimal.

### ***Restrictions on herds with unknown status animals***

If the Department were to take a power to restrict herds with BVDUs, it would initially consider placing restrictions on those individual herds with a larger number of unknown status animals (known as BVDUs). It is envisaged that this might involve the Department placing restrictions on up to 120 herds annually.

However, the Department considers that these restrictions should be removed immediately once the farmer complies with the current legal requirement to test their animals. It is not, therefore, expected that this would add any additional costs to industry. It would be entirely in the farmers gift to avoid any additional cost of restrictions and it is assumed that the risk of the application of herd restrictions would be sufficient to ensure farmers undertake the necessary testing to avoid them. If adopted, this policy should not add any additional testing costs to what is already currently required under option 1, as testing animals for BVD is an existing legal requirement.

### ***Retained restrictions on potentially trojan females***

The proposed additional restrictions on breeding females within a herd would put extra costs on those herds which sell breeding age females rather than sending them directly to slaughter. To avoid the restrictions, the animals that have not calved would require additional antibody testing to be moved. This is likely to cost approximately £3.50 +VAT per animal on top of any additional animal handling charges or veterinary costs to carry out the testing. It is not expected that these tests would be widely requested. Therefore, it is not possible to indicate an annual cost to industry for these tests.

### ***Requirement to test pre-2016 BVD 'blank status' animals***

There are currently 2,141 animals born before 1 March 2016 which have no BVD status on the APHIS database and, therefore, would need to be tested under the Departments proposal. This would involve additional one-off cost for those herds which have older animals. The estimated total cost for the testing of these animals is £11,454.35, based on cost of £5.35 per test<sup>10</sup>. However, it is expected that the number of animals requiring a test would continue to decrease before implementation as they are removed naturally from herds. These animals are considered to be spread across a large number of herds, with most herds having only a very small number of older animals. Therefore, the additional cost to any individual herd keeper would be minimal.

### ***Total Costs***

Table 1 sets out the estimated costs of the proposals over a five-year period. Adding the cost of restrictions over that period together with the one-off cost to test pre-2016 animals' results in an estimated total cost of £102,805. As noted above this is the expected maximum cost of the policy proposals and it will most likely be much less. It represents a yearly average cost to industry of £20.5K.

**Table 1: Anticipated costs per year of restrictions and testing pre-2016 animals**

	<b>Herd Numbers Restricted</b>	<b>Cost Impact</b>
Year 1	40	40 x 5 x 21 x 4.35 = £18,270
Year 2	40	40 x 5 x 21 x 4.35 = £18,270
Year 3	40	40 x 5 x 21 x 4.35 = £18,270
Year 4	40	40 x 5 x 21 x 4.35 = £18,270

<sup>10</sup> <https://www.farmersjournal.ie/bvd-tissue-tag-spend-passes-15m-708412>

Year 5	40	$40 \times 5 \times 21 \times 4.35 = \text{£}18,270$
<b>COST OF RESTRICTIONS</b>		<b>£91,350</b>
<b>Cost to test pre-2016 animals at £5.35 per animal</b>		$2141 \times 5.35 = 11,454.35$
<b>TOTAL COST</b>		<b>£102,805</b>
<b>Average per year</b>		<b>£20,561</b>

## Other potential costs

### Department Costs

The introduction of herd restrictions would require an allocation of Departmental resource primarily arising from the need to apply, remove and enforce movement controls. The expected costs would for the most part be for staff resource as the restrictions would initially be managed manually:

- Administrative staff would run reports, identify herds for restriction and write to keepers with positive animals. Daily checks, restricting and de-restricting herds, answering queries from herd keepers would be required.
- A Divisional veterinarian would be required to oversee process and deal with queries.

It is envisaged that the Department would subsequently incur costs to enhance its IT systems to allow the restrictions to be managed automatically. It is estimated that, overall, the cost to the Department would be in the region of an average of £48.4k per annum over the initial five-year period.

**Table 2: Estimated costs to the Department for the implementation of herd restrictions**

Expenditure	Year 1	Year 2	Year 3	Year 4	Year 5	Total
<b>Staff Costs</b>	£33k	£28k	£28k	£10k	£10k	<b>£109k</b>
<b>Enforcement Costs</b>	£20k	£8k	£8k	£6k	£6k	<b>£48k</b>
<b>IT Enhancements</b>	£0.00	£50k	£35k	£0.00	£0.00	<b>£85k</b>
<b>Total</b>	£53k	£86k	£71k	£16k	£16k	<b>£242k</b>

### AHWNl

There would also be extra costs for AHWNI arising from;

- increased communications with keepers who have a BVD positive animal in herd;
- increased communications to raise awareness of herd restrictions and actions which keepers need to take; and
- dealing with queries from farmers.

It is not expected that these additional costs would be significant.

### NON-MONETISED COSTS -FARMER

The following non-monetised costs have been identified:

- Time costs arising from potential delay in sale of cattle due to movement restrictions; and
- Psychological costs of having a herd restricted and disposing of positive animal.

## BENEFITS

The benefits of the proposals are set out in above. However, in contributing towards BVD eradication in NI, there are many benefits for herd keepers and industry as a whole. These are listed below.

### Herd keepers

- Healthier animals mean a more profitable business and reduced veterinary costs;
- Improved fertility of breeding cattle;
- Reduction in the use of antibiotics to treat BVD affected animals;
- Improved animal welfare;

- In the long term, overall improved wellbeing of keepers no longer having to remove BVD positive cattle which appear healthy.

While it is difficult to be prescriptive on actual savings to farmers, one immediate benefit of not having BVD in a herd is a saving in not having to replace diseased animals. It is estimated that the replacement cost for a diseased beef calf to be in the region of £222-£312<sup>11</sup>. In the dairy sector this could be up to £922 for dairy heifers.<sup>12</sup> On top of this, disposal costs of £35 are incurred for animals.<sup>13</sup> Therefore, any action to reduce the number of PI animals in NI would have significant immediate benefits.

Data from the ROI showed a decrease from 4,540 positive animals in 2016 when herd restrictions were introduced, to 461 in July 2022, representing a 90% reduction over this period. If NI was to have similar success, it would be reasonable to assume that the number of positives could reduce from 1,689 now to 169 after 5 years.

It is assumed that, without the introduction of herd restrictions, numbers of BVD positives would remain at current levels. Therefore, any reduction in the number of positive animals as a result of the policy proposals would represent a saving to herd keepers, in replacement costs for animals that may otherwise have been infected with BVD. Table 3, therefore, tries to quantify these savings over a five-year period. Savings in the first year of between £217K and 809K may be a reasonable estimation with an expected increase to between £390k and £1,454k per year in year five. This would represent an overall saving over five years of between £1,663k and £6,196k, depending on animal type affected.

**Table 3: Possible savings on the need to replace positive animals**

	Numbers of positives expected	Benefit – Number of animals saved	Costs of replacement		Disposal costs @£35 per animal	Savings annually	
			Beef £222	Dairy £922		Lower Range	Higher Range
Year 1	845	844	£187k	£778k	£30K	£217k	£808k
Year 2	423	1,266	£281k	£1,167k	£44k	£325k	£1,211k
Year 3	312	1,377	£306k	£1,270k	£48k	£354k	£1,318k
Year 4	220	1,469	£326k	£1,354k	£51k	£377k	£1,405k
Year 5	169	1,520	£337k	£1,401k	£53k	£390k	£1,454k
<b>TOTAL</b>						<b>£1,663k</b>	<b>£6,196K</b>
<b>Average per year</b>						<b>£333k</b>	<b>£1,239K</b>

These are just some of the benefits that could be quantified. There are, however, expected to be wider benefits for industry:

### Industry

- Ensures herd keepers can safely source cattle;
- Increases trade opportunities with other countries;
- Positive environmental impact by reducing GHG emissions;
- Increased profitability of farms due to improved animal health and productivity;
- Healthier animals mean reduced veterinary costs and antibiotic use.

Herd restrictions would help support efforts of industry working to eradicate BVD in NI; they would help to control the spread of disease by encouraging farmers to remove PI animals promptly from the herd and thereby, reduce the risk of infection being passed to other animals in that herd and other herds. As such, they would have long term savings and benefits for industry as due to the contribution towards BVD eradication in NI. It is estimated that BVD is costing the NI economy of between £25 million and £30 million per year.<sup>14</sup>

<sup>11</sup> Agricultural Census in NI 2019 <https://www.daera-ni.gov.uk/publications/agricultural-census-northern-ireland-2019>

<sup>12</sup> Agricultural Census in NI 2019 <https://www.daera-ni.gov.uk/publications/agricultural-census-northern-ireland-2019>

<sup>13</sup> Estimating the Savings to Farmers from Eradicating BVD <https://www.gov.scot/publications/eradicating-bvd-estimating-the-savings-to-farmers/>

<sup>14</sup> Cost to industry, estimates in Agri-land article July 21, <https://www.agriland.ie/farming-news/ni-bvd-maps-where-is-your-nearest-pi-animal/>

Data looking at savings at an animal or herd level demonstrate that eradication of BVD is estimated to benefit farms by around £37/cow/year. After BVD eradication, average dairy and beef herds could benefit by £15,800 and £4,800 per year respectively<sup>15</sup>. While the introduction of herd restrictions alone would not lead to BVD eradication or these savings, it would constitute a significant step forward in that journey.

## **OVERALL IMPACT**

### *Benefits > Costs*

If herd keepers are no longer able to retain BVD positive animals without restrictions being imposed, it would reduce the likelihood of the disease spreading within their herds and from their herds to others, thus contributing to the overall aim of eradicating the disease.

The Department is mindful of the current economic situation and the significant pressures due to the rising cost of living, reduced grain supplies and rising energy costs for farmers. Although herd restrictions may place a financial burden on a small number of farmers in the short term, in the long term this policy would mean increased profitability and added value for farmers. As outlined above, dealing with BVD in a herd is very costly for the keeper. There are also wider benefits to be gleaned for industry and society as a whole from the eradication of BVD in NI. The costs of the proposals would be greatly outweighed by monetary and non-monetary benefits derived from reducing disease levels by restricting a relatively low number of herds.

The Department along with AHWNI as BVD scheme administrators would ensure keepers are clear as to the steps they need to take to avoid a herd restriction. In any event, it would be within the keeper's gift to avoid any herd restrictions by quickly removing BVD positive animals, and it is in the best interests in terms of animal welfare, farm productivity and profitability to do so.

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<sup>15</sup> <https://gov.wales/compulsory-bovine-viral-diarrhoea-eradication-scheme-html>