

# Pilot Farm Hazardous Waste Bring Centres in 2013

## Interim Report





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*Cover Photos – Jane Brogan and Dr. Jonathan Derham, EPA.*



## Project Team and Acknowledgements

The following organisations collaborated to organise and operate the Pilot Farm Hazardous Waste Bring Centres 2013 and to prepare this report. The participation, professionalism and enthusiasm of all involved is gratefully acknowledged.

- Environmental Protection Agency
- Teagasc
- Pesticide Control Division (PCD),  
Department of Agriculture,  
Food and the Marine
- RILTA Environmental Limited
- WEEE Ireland
- European Recycling Platform
- Galway County Council
- Carlow County Council
- Sligo County Council
- Meath County Council
- Cork County Council
- Tipperary County Council



In addition, the project team wishes to sincerely thank the owners of the cattle marts and co-operatives who gave their sites to facilitate the bring centres; the Irish Farm Film Producers Group (IFFPG) for their assistance and expertise; the Irish Farmers Association (IFA) for advertising details of the pilot scheme to their members and finally to all the farmers who all engaged positively with the pilot scheme.

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## Section 1: Introduction and Background

The Environmental Protection Agency, Teagasc, the Department of Agriculture Food and the Marine (DAFM) and the Local Authorities of Galway, Carlow, Sligo, Meath, Cork and Tipperary collaborated in a joint initiative in 2013 to operate six pilot bring centres for farm hazardous waste across the country during November. Farm hazardous wastes have the potential to cause harm to farmers, animal health and the environment due to the nature of their properties such as being toxic, irritant and flammable.

The aim of the pilot farm hazardous waste collection project was to:

1. Research the need for a national farm hazardous waste collection scheme;
2. Undertake an assessment of the types and quantities of farm hazardous waste that are being generated and stockpiled on farms due to the absence of a suitable and affordable disposal scheme;
3. Identify the type and quantity of de-registered pesticides remaining on farms;
4. Facilitate the removal of hazardous wastes from farms and ensure that their recovery/disposal is managed in accordance with national and European waste legislation;
5. Provide a collaborative platform for inter-agency co-operation and pooling of resources to undertake this work; and
6. Make recommendations on how best to deliver an affordable and suitable national farm hazardous waste collection scheme and to assess the commercial viability of such a scheme.

Following a call for expression of interest, RILTA Environmental Limited was selected as the waste contractor partners for the pilot bring centres. RILTA Environmental Ltd operates two waste processing sites nationally and is licensed by the EPA (W0192-03 and W0185-01). It processes over 100,000 tonnes of hazardous waste per annum and provided complete traceability from the end user to final destination (cradle to grave) for the full range of farm hazardous wastes collected at the bring centres. RILTA issued all farmers with a certificate of disposal for their hazardous waste, as well as a receipt of payment. A method statement and risk assessment was issued by RILTA to identify and manage the health and safety risks relating to the operation of the six bring centres for the collection of farm hazardous wastes.

In addition, waste electrical and electronic equipment (WEEE), batteries and light bulbs were also collected on-site during the pilot campaign by WEEE Ireland or European Recycling Platform (ERP). These are the national approved compliance schemes for the collection and management of WEEE and batteries in Ireland. WEEE and batteries contain many hazardous elements including mercury, cadmium and lead.

### Waste legislation and insurance

The bring centres operated as a one-day static collection activity and were therefore not considered to be a “facility” within the meaning of national waste legislation and therefore did not require hazardous waste facility permits.

RILTA Environmental Ltd holds the appropriate insurance and waste authorisations relating to their activities for the collection and transfer of hazardous wastes from the pilot bring-centres. Once collected, the wastes are brought by RILTA to their licensed sites and sorted, packaged and sealed for onward

recovery or disposal. Waste oils are recycled as a fuel by RILTA for the road surfacing (asphalt and tarmacadam) industry. Waste packaging is recycled by RILTA. Paints, adhesives, veterinary medicines and creosote are exported for recovery as a fuel. Grease guns and aerosols are exported for recovery. Pesticides (plant protection products and biocides), brake fluid and sharps are exported for incineration with energy recovery. Corrosives are exported for neutralisation via physico-chemical processes. The wastes are mainly exported to the Netherlands, Belgium and Germany.

Teagasc operates and coordinates a large number of farmer events across the country on an annual basis. These events are covered by Teagasc public liability insurance through JLT Insurance brokers. For the purpose of this pilot campaign Teagasc provided a detailed briefing to its insurance company on the nature of the activities that would take place at each bring centre. All on-site activities were covered by Teagasc insurance except for activities undertaken by RILTA Environmental Ltd. All marts and cooperatives were indemnified under the Teagasc insurance policy meaning that any claims would be directly against Teagasc or RILTA. RILTA's insurance policy also indemnified the marts and co-operative sites that were used.

## Waste types

A list of the types of hazardous wastes *likely* to occur on farms was compiled by the project partners and was used in the advertisements that were issued prior to the commencement of the operation of the bring centres. The waste types and costs per kilogram for the various wastes are given in Table 1. Rules relating to the presentation of the wastes at sites, the requirement for identification, segregation and loading on and off loading trailers were also compiled and issued to farmers prior to the commencement of the pilot using Teagasc advisory service. The rules were as follows:

1. Hazardous wastes should be handled with care when packaging and transporting to the bring centres. Protective clothing should be worn when handling these wastes.
2. Farmers retain ownership of, and are responsible for, the hazardous waste until the waste is accepted by the waste contractors at the bring centre.
3. The type of hazardous waste being disposed of must be clearly identifiable from the packaging or by the farmer at the bring centre. Wastes which cannot be identified will not be accepted.
4. Farm plastics, such as silage wrap, fertiliser and feed bags and clean triple rinsed pesticide containers, are NOT accepted at the farm hazardous waste pilot bring centres<sup>1</sup>.
5. A minimal fee will be charged per kilogram, depending on the type of waste. Payment will be required by cheque or cash on the day. Some wastes are accepted free of charge.
6. The bring centres will operate from 10am to 4pm and will operate on a first come first served basis.

There were two main points of off-load at the bring centres, one area for Waste Electrical and Electronic Equipment (WEEE) and one area for all other hazardous wastes. Farmers were asked to load their waste so that all hazardous waste could be off-loaded first and WEEE would be off-loaded second. A fork-lift truck operated at the sites. Table 1 provides a list of the wastes that were accepted at the bring centres.

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<sup>1</sup> Farm plastics can be recycled through bring centres operated by the Irish Farm Film Plastics Producer Group (IFFPG) which operates over 200 bring centres annually across the country. The types of plastics accepted include silage wrap and sheeting, empty feed and fertiliser bags, triple rinsed pesticide containers and netting and twine (see [www.farmplastics.ie](http://www.farmplastics.ie) for further information).



**Table 1: Waste charges and acceptance criteria for farm hazardous wastes**

Waste type	Rules	Cost to farmer (excl. VAT at 13.5%, paid to RILTA)
Waste engine oil	Accepted in containers. Do not mix with vegetable oil	No charge
Waste hydraulic oil	Accepted in containers. Do not mix with vegetable oil	No charge
Waste brake fluids	Accepted in containers. Do not mix with vegetable oil	€2 per kilogram
Waste coolants	Accepted in containers. Do not mix with vegetable oil	€2 per kilogram
Waste antifreeze	Accepted in containers. Do not mix with vegetable oil	€2 per kilogram
Oily containers	Accepted	€4 per 20 or 25 litre container; €8 per 200 litres (45 gal. drum)
Oily wastes such as oily filters, rags, cloths, empty grease guns	Accepted	€2 per kilogram
Waste paints (including solvent- and chromate-based paints)	Accepted in containers	€2 per kilogram
Unused, de-registered, partially used pesticides and biocides including herbicides, fungicides and insecticides.	These products need to be identifiable from their labels or by the farmers	€2 per kilogram
Obsolete, unused or partially used veterinary products including tubes, syringes, empty dose packs, empty sheep dip packs, etc.	These products need to be identifiable from their labels or by the farmers	€2 per kilogram
Used needles	Needles should be in a separate sealed container and a sharps bin will be provided on the day for needles	€2 per kilogram
Aerosol cans	Must be identifiable or farmer must know contents	€2 per kilogram
Empty silicone guns	Accepted	€2 per kilogram
<b>Waste Electrical and Electronic Equipment (WEEE)</b>		
All batteries including tractor, car, electrical fence, AA batteries, etc.	Accepted	No charge
Waste electrical and electronic equipment (equipment that requires a battery or plug to operate) and includes old TVs, computer monitors, fridges, freezers, drills, saws, etc.	Fridges and freezers must be emptied of contents. Do not crack TV or computer monitor screens	No charge
All used light bulbs including fluorescent light tubes	Accepted	No charge

## Site operations

Six bring centres were operated in November 2013 at locations in Galway, Carlow, Sligo, Meath, Cork and Tipperary. Site selection was undertaken by Teagasc advisory service with assistance from the Irish Farm Film Plastics Producer Group which operates the farm plastics Producer Responsibility Initiative (PRI). Factors such as site suitability, farmer familiarity with the sites, population catchment area, etc. were also considered. Four marts and two agri-merchant sites were selected. A list of sites and dates of operation are provided in Table 2.

**Table 2: Location and dates for bring centres**

Location	Dates
Ballinasloe Livestock Mart, Co. Galway	Monday, 11th November
Tullow Livestock Mart, Co. Carlow	Wednesday, 13th November
Ballymote Livestock Mart, Co. Sligo	Monday, 18th November
Royal Town & Country, Trim, Co. Meath	Wednesday, 20th November
McDonnells Grain Store, Saleen, Midleton, Co. Cork	Monday, 25th November
Thurles Livestock Mart, Co. Tipperary	Thursday, 28th November
Bring centres operation times: 10am-4pm	

Generally, each site had a separate entrance and an exit which facilitated the flow of traffic around the site. The project team had people speaking with farmers as they entered the site to identify the waste types being presented for collection and to manage the traffic. WEEE was handled by staff provided by WEEE Ireland and ERP and was off-loaded into crates, and larger items such as fridges and freezers were off-loaded by fork-lift. This required two operatives on-site every day.



**Thurles Bring Centre, Thurles Livestock Mart**

All the other farm hazardous wastes were off-loaded by RILTA and project team members on-site. There were two pallet weighing scales and two points for payment. The farmers, with assistance from DAFM staff, identified the wastes where labels, etc., were missing and these were then weighed separately, the weights were recorded and the farmer was then directed to the cash points. Details for each farmer were recorded on the Hazardous Waste Collection Docket which was provided by RILTA and designed in conjunction with the project team. Information such as the farmer's name, address, telephone number and herd/farm number were recorded.

A few difficulties were encountered with some of the waste streams. The volume of waste oils to be handled and the condition of some of the containers increased the risk of spillage. Handling this waste stream was time-consuming particularly given the quantities presented at the centres for collection. Whilst farmers were requested to make sure that any sharps were presented in a separate sealed container, many sharps were mixed with other wastes, particularly syringes and this made the waste more difficult to manage. Also the disposal costs for waste paints, which were mostly water-based, and therefore non-hazardous, caused difficulty for some farmers.

## Feedback from farmers

The feedback from farmers was very positive. This highlighted both the need for a suitable and affordable national collection scheme and the desire of the farming community to avail of such a scheme were it to be available. It also emphasised that the agricultural sector has the desire to ensure that these waste streams are removed from farms in a safe and environmentally sound manner. Some of the wastes presented were over 30 years old and many farmers stated that they had to stockpile these wastes as they did not know how to dispose of them properly to protect themselves and the environment. Other farmers travelled considerable distances to avail of the pilot scheme, e.g., one farmer travelled from Wexford to Thurles in Tipperary; another in Galway had a 140 km round trip to Ballinasloe. One farmer, writing in the Farmers Journal after using the Trim bring centre, provides a very good example of the feedback that was received during the operation of the pilot centres. Gerald Potterton, from County Meath stated in his article that: *“Everything was quickly unloaded with a minimum of fuss and weighed into sealed steel drums for incineration in Germany. I was hugely relieved to be rid of my dangerous cargo. Yes it cost me €700 (including a haggled discount) but this was buttons in terms of what it would be in SFP<sup>2</sup> penalties. The peace of mind is unbelievable and I sincerely wish to commend all those officials who worked on this innovative pilot scheme. I hope that nationally it is a success and that it will be repeated every other year. You see, farmers want to remain within the regulations but only sensible scheme like this make it possible”*. Some farmers agreed to be interviewed on camera at the centres by RTE and also Teagasc. The majority of farmers requested that this scheme be rolled out on a national basis and emphasised the need and importance of such a scheme to the agriculture industry.

## Finances, Publicity and Resources

### Finances

The EPA and DAFM each contributed €5,000 towards the costs of the pilot study (RILTA Environmental Ltd costs). Teagasc managed the publicity and dissemination of information on the bring centres prior to commencement. It used its advisory service to inform farmers of the pilot scheme. The IFA also contributed by sending out text alerts to its members. RILTA charged €2 per kilogram for the majority of the farm hazardous wastes collected. Refer to Table 1 for details on costs to the farmers.

### Publicity

Teagasc nominated two advisers in each regional unit to coordinate and drive publicity for each bring centre. Details of the publicity and advertising campaign by Teagasc, both within and outside the organisation, are detailed below:


- Teagasc website, Facebook and Twitter – all details provided pre and post campaign
- Posters printed and displayed in Teagasc offices, Cattle marts and Co-operatives

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2 Single Farm Payment.

- Full adverts were placed in the Farmers Journal, Farming Independent and the Irish Examiner (see Figure 1 below)
- Eight national and tailored press releases occurred pre and post campaign
- Six local radio interviews were conducted to advertise the campaign
- Six articles in local papers
- County by county text messages from IFA
- Report by RTE which featured on Morning Ireland (<http://t.co/fd0eTyotnw>), Morning Edition and the One O’Clock News (<http://www.youtube.com/watch?v=plQdVroK4j8>)
- Interview by Minister Tom Hayes on Tipp FM.

As well as the external publicity, Teagasc used internal publicity within its organisation to advertise and promote the bring centres. This included a full feature on the pilot which appeared in Teagasc’s Today’s Farm Magazine; Teagasc Newsletter cover page; Teagasc Environment Newsletter. In addition Teagasc sent text messages to their clients farming in the vicinity of the centres and their advisers informed their clients through existing discussion groups.



teagasc  
AGRICULTURE AND FOOD DEVELOPMENT AUTHORITY

## Pilot Farm Hazardous Waste Bring Centres


Teagasc, in association with the Environmental Protection Agency (EPA), Department of Agriculture, Food and the Marine and Local Authorities will operate six pilot bring centres for Farm Hazardous Waste across the country.

Location	Dates
Ballinasloe Livestock Mart, Co. Galway	Monday, 11 November
Tullow Livestock Mart, Co. Carlow	Wednesday, 13 November
Ballymote Livestock Mart, Co. Sligo	Monday, 18 November
Royal Town & Country, Trim, Co. Meath	Wednesday, 20 November
McDonnell Bros., Saleen, Midleton Co. Cork	Monday, 25 November
Thurles Livestock Mart, Co. Tipperary	Thursday, 28 November


*Bring centres will open from 10am – 4pm.*

This is an excellent opportunity for farmers to safely dispose of hazardous waste. A charge of €2 per kg applies to: Out of date pesticides, disused veterinary products, waste paints, needles, coolants, antifreeze, oily wastes (e.g. filters etc) and brake fluids. There is no charge for waste engine and hydraulic oil. The centres will also be accepting waste electrical and electronic (WEE) items.


Visit [www.teagasc.ie](http://www.teagasc.ie) to see the full list of items that will be accepted. Only cash or cheque will be accepted.




NDP  
National Development Plan 2007-2013  
Transforming Ireland



epa  
Environmental Protection Agency  
An tAidmhaireacht Náisiúnta  
do Chosaint an Ábhair Dúibhreacha



Department of  
Agriculture,  
Food and the Marine  
an tAidmhaireacht,  
Bia agus Mara



www.teagasc.ie

Figure 1: Advert featured in three national papers

The Minister of State for Agriculture, Mr Tom Hayes, T.D. was interviewed on local radio and visited the bring centre in Thurles and was very positive towards the initiative and on plans to expand the scheme nationwide in coming years.



**Minister Tom Hayes, T.D. with Mark Gibson (Teagasc),  
Jane Brogan (EPA) and Gordon Rennick (DAFM)**

## Resources

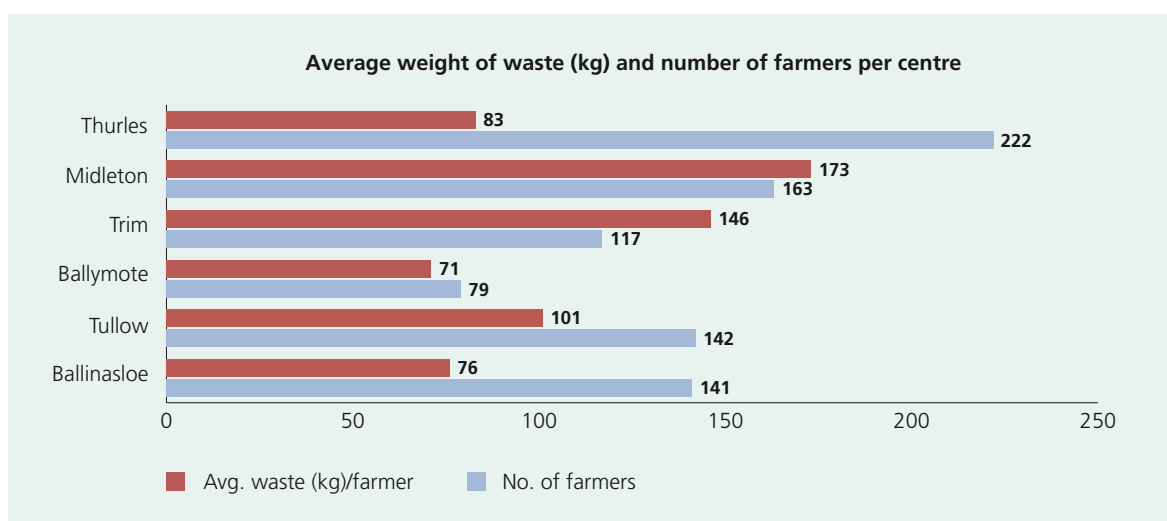
The successful operation of the pilot centres was labour intensive. RILTA employed five to six staff on-site per day, the EPA had two staff members on-site each day and Teagasc had two to three staff on-site each day and the DAFM had one to two staff on-site per day. In addition, the local authorities supplied one or two members for whole or part days. WEEE Ireland or ERP had two people per site per day.

The non-RILTA people were involved in traffic management, recording farmers' details, off-loading, weighing, segregating and placing the farm hazardous wastes into specified containers for sealing and transport. DAFM staff assisted in identifying pesticides and veterinary medicines and also recorded the type and quantity of de-registered pesticides presented at the centres. This included recording details of pesticides that are classified as persistent organic pollutants (POPs).



## Section 2: Type and Quantity of Wastes Collected

A total of 94,472kg of farm hazardous waste and 22,228kg of waste electronic and electrical equipment and batteries were collected at the six pilot bring centres. 864 farmers travelled to the bring centres at the six locations; Thurles was the busiest centre with 222 farmers while Ballymote was used by 79 farmers. Figure 2 provides a summary of the number of farmers using each centre and the average weight of hazardous waste per farmer presented by the farmers for onward disposal. The average weight of hazardous waste per farmer was 109kg. A summary of the waste type and quantity collected is given in Tables 3 and 4 below.



**Figure 2: Average weight of waste (kg) and number of farmers per centre**

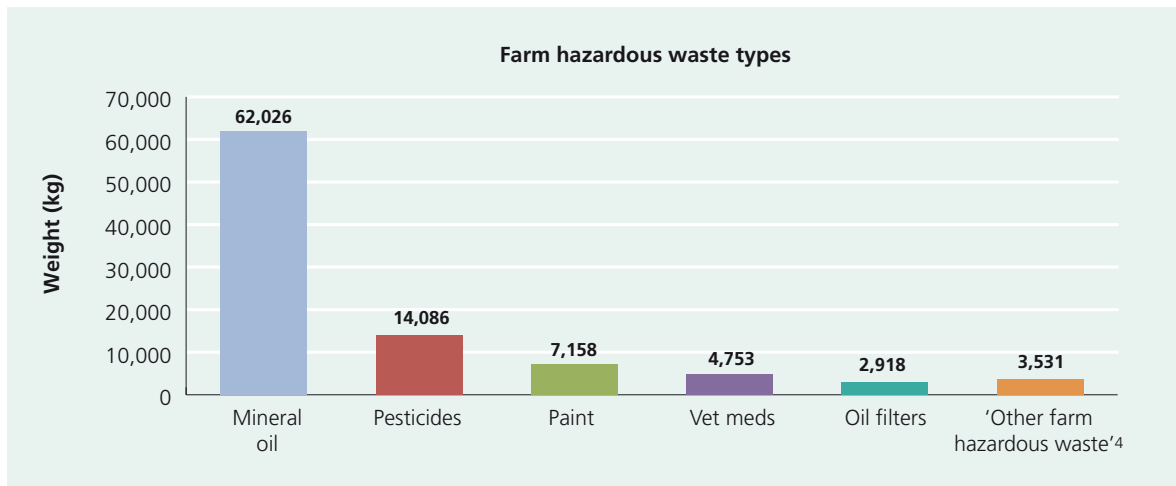
The main hazardous waste types presented by farmers on a weight basis at the bring centres were waste mineral engine and hydraulic oils, at 62 tonnes, 14 tonnes of pesticides, over 7 tonnes waste paints (both water and solvent based), nearly 5 tonnes of veterinary medicines (unused, partially used and out of date medicines, sheep dips, dose packs, syringes, mastitis and dry cow tubes etc.), and 3 tonnes of oil filters. A significant quantity of the waste paints were water based and therefore not deemed to be hazardous waste, however, given the operational constraints of the bring centres, the waste paints were not divided into hazardous and non-hazardous waste. Farmers were advised of this but many decided to avail of the services on the day. They were also advised that some civic amenity sites may accept waste paints.

Smaller quantities of ‘Other farm hazardous wastes’, 3.5 tonnes in total, were collected, which included a mix of wastes such as out-of-date liquid fertilisers, contaminated empty 20 or 25 litres containers, corrosives such as acids, biocides, aerosols, sharps, adhesives, anti-freeze, grease cartridges, creosote, brake fluid, household chemicals, ear tags, tar oils, rubber, milking cluster liners etc. As the quantities of these more unusual wastes were so small e.g., ear tags, milk cluster liners, etc., RILTA Environmental Ltd accepted these wastes to facilitate the farmers on the day.

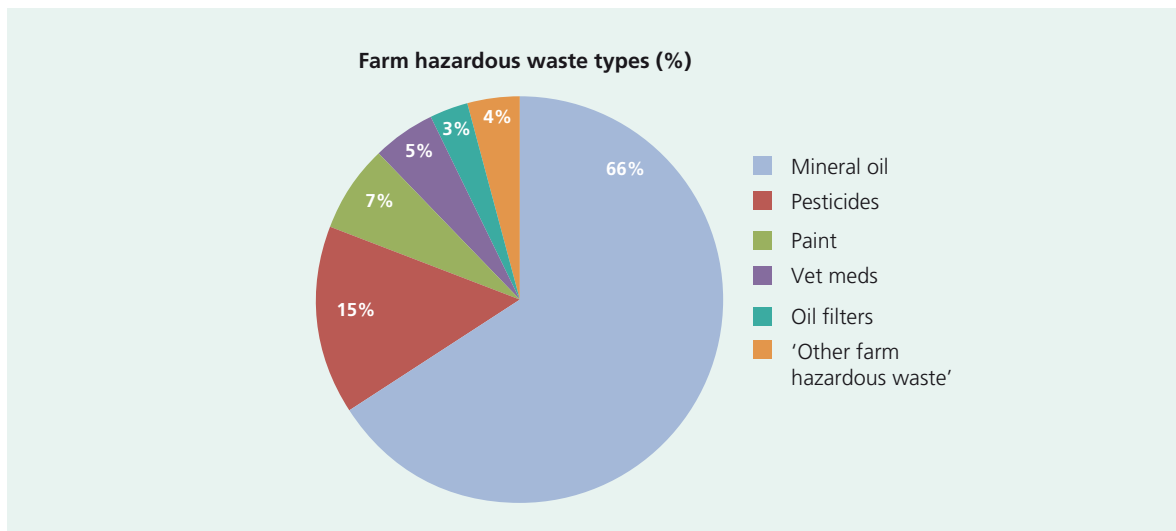
**Table 3: Type and quantity of farm hazardous waste (kg)**

Waste Stream (kg)	Ballinasloe	Tullow	Ballymote	Trim	Midleton	Thurles	Totals (kg)
Mineral oil	7,171	8,869	4,197	10,270	20,603	10,917	62,026
Pesticides	441	2,898	205	4,079	3,658	2,806	14,086
Paint	1,852	867	822	708	1,094	1,815	7,158 <sup>3</sup>
Veterinary medicines	591	511	204	554	1,533	1,360	4,753
Oil filters	332	791	20	391	854	529	2,918
Liquid fertiliser	4	51	5	438	87	141	726
Empty 25l containers	116	120	54	89	130	190	699
Corrosives	32	0	0	149	88	327	596
Biocides	93	13	40	54	183	174	557
Aerosols	64	149	19	28	32	57	349
Sharps	21	38	20	146	38	49	311
Adhesives	25	3	0	62	1	26	117
Anti-freeze	6	0	8	12	44	12	83
Grease cartridges	0	0	0	21	1	17	39
Creosote	4	0	0	22	0	2	28
Brake fluid	21	0	0	2	0	3	26
<b>Total weight</b>	<b>10,772</b>	<b>14,311</b>	<b>5,593</b>	<b>17,025</b>	<b>28,346</b>	<b>18,425</b>	<b>94,472</b>
No. of farmers	141	142	79	117	163	222	864
Ave weight per farmer	76	101	71	146	173	83	109

3 Both water and solvent-based paints are included in this total for paints.



**Figure 3: Farm hazardous waste types and quantities collected (kg)**



**Figure 4: Farm hazardous waste types by percentage**

<sup>4</sup> 'Other farm hazardous waste' category includes – liquid fertiliser, empty 20 or 25l pesticide containers, corrosives, biocides, aerosols, sharps, adhesives, anti-freeze, grease cartridges, creosote and brake fluids.



Pesticides being weighed at the Trim bring centre



Examples of the wastes categorised as 'Other farm hazardous waste'



Figure 5: Type and quantity of ‘Other farm hazardous waste’ collected (kg)

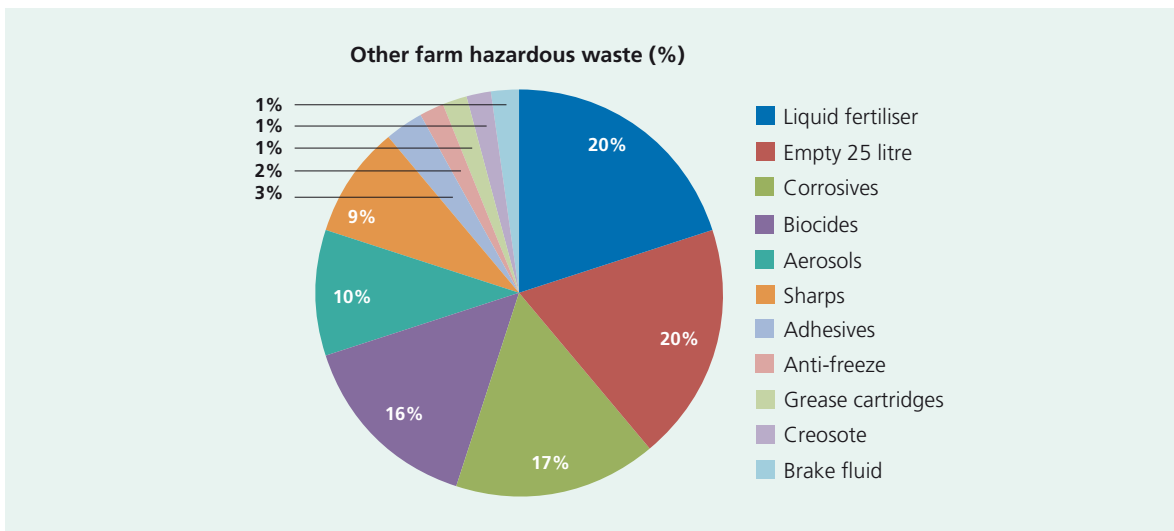
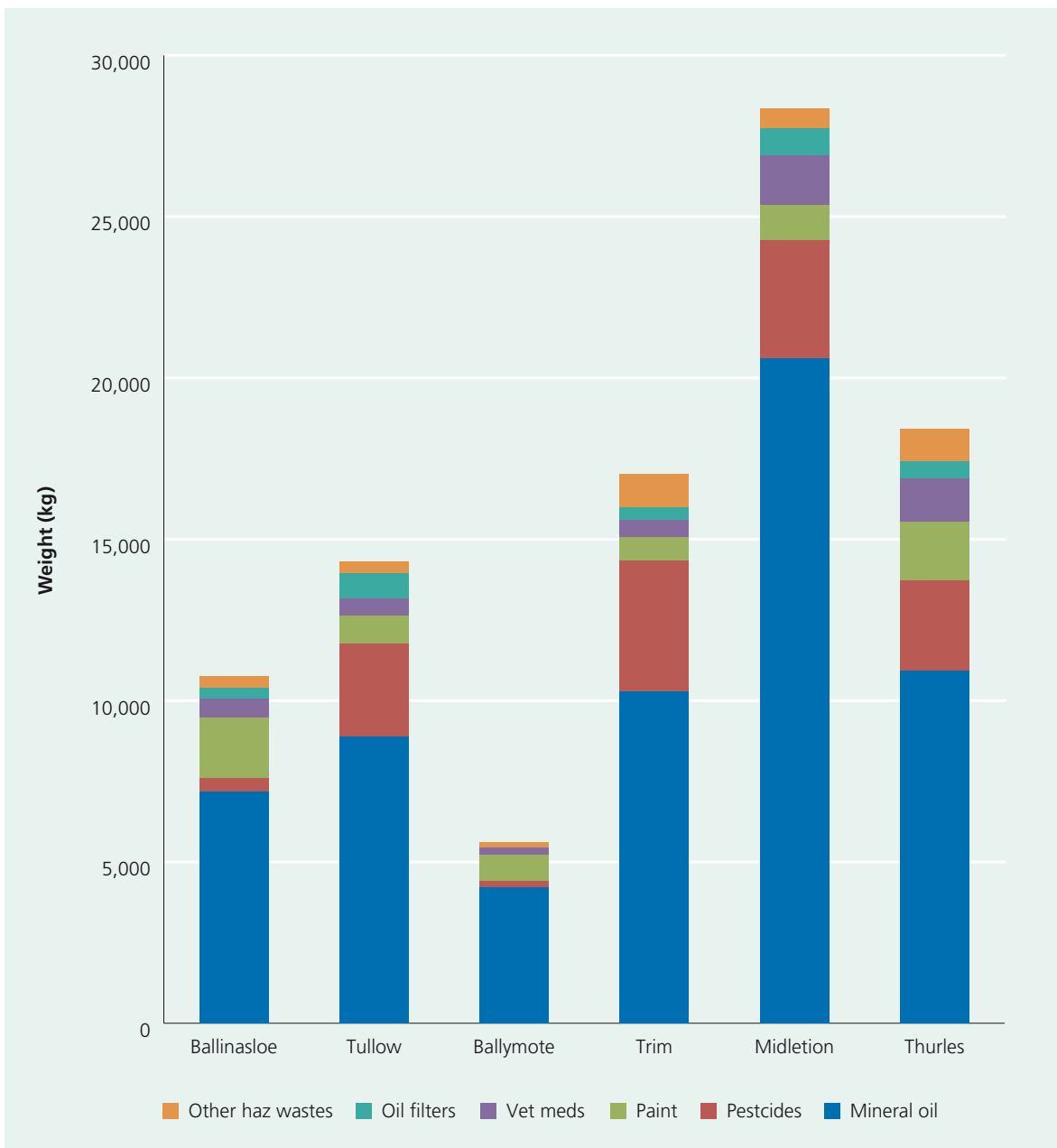


Figure 6: ‘Other farm hazardous waste’ category by percentage

## Comparison across the bring centres

The six bring centres were geographically spread across the country and the wastes collected reflect the nature of the farming activities within the locality of the centre. Figure 7 illustrates the types and quantities of wastes collected at each centre and for each waste type. Middleton received the greatest quantities of waste, particularly waste oils. Figure 8 shows the kilograms collected at each centre with the waste oil category removed to illustrate more clearly the other categories of hazardous wastes collected. Approximately 14 tonnes of pesticides were collected; Trim had the greatest weight collected at approximately 4 tonnes, with Middleton at 3.6 tonnes, Tullow and Thurles at 2.8 tonnes each, Ballinasloe at 0.4 tonnes and Ballymote at 0.2 tonnes. The tonnages collected probably reflect the dominance of arable farming in the areas collected.

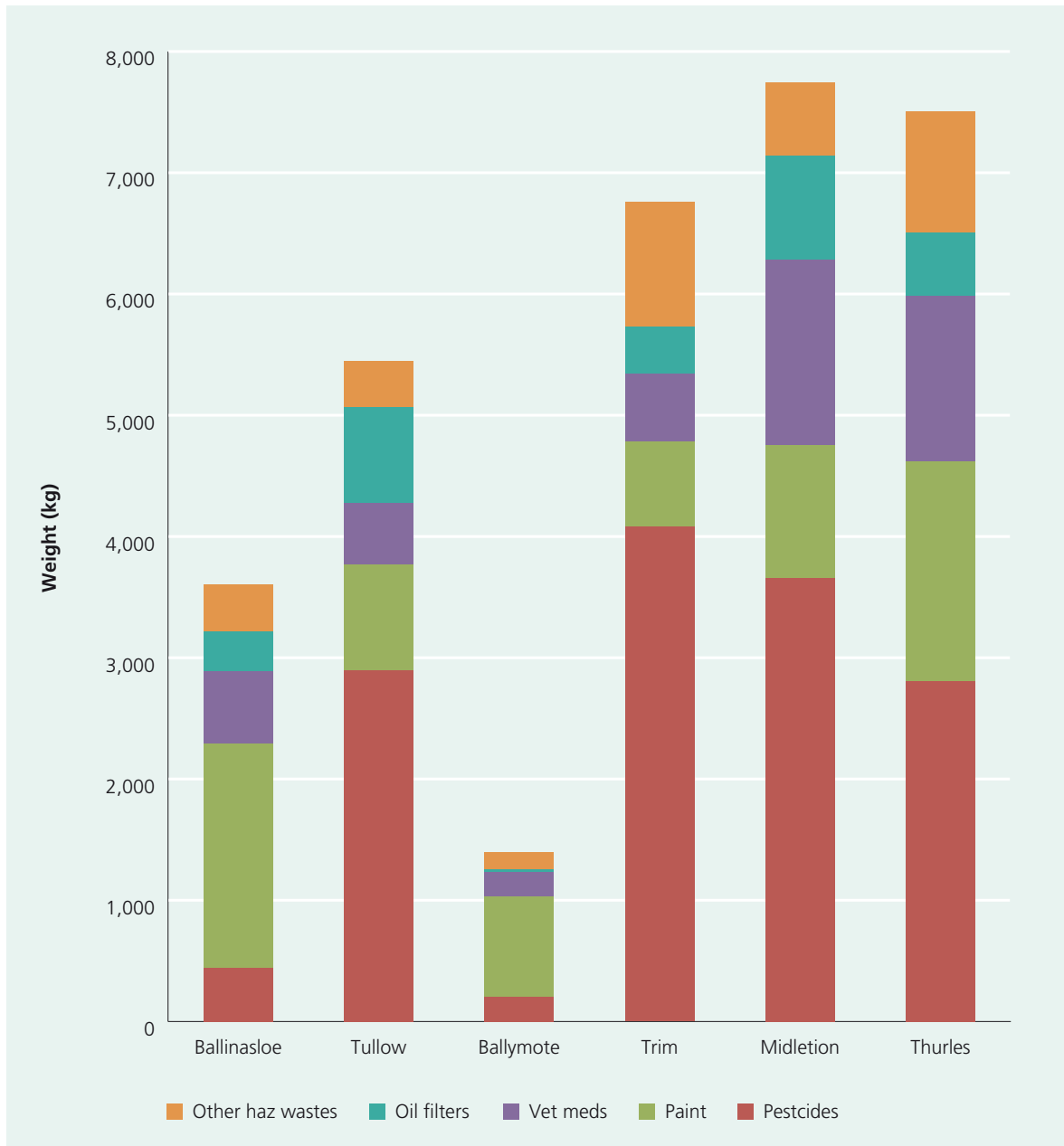
Over 7 tonnes of waste paint was collected; Ballinasloe and Thurles had the largest quantities at 1.8 tonnes each, Midleton had 1.1 tonnes and Trim, Ballymote and Tullow had between 700 to 900kgs each. Nearly 5 tonnes of waste veterinary medicines were collected. Approximately 1.5 tonnes was collected in Midleton; 1.4 tonnes in Thurles; between 0.5 to 0.6 tonnes in Ballinasloe, Trim and Tullow and 0.2 tonnes in Ballymote. The farmers of Midleton and Thurles disposed of 9.4kg and 6.1kg of veterinary medicine waste respectively per farm which probably reflects the concentration and size of livestock-based enterprises in those areas. Ballymote had the lowest weight of waste per farmer at 71kg/farm disposed of at the bring centre. This could reflect the fact that many farmers from the region are likely to be part-time farmers and the operation of the bring centre mid-week did not allow for farmers who have off-farm jobs to avail of the centre. This issue will be considered in any future pilot scheme for hazardous waste.



**Figure 7: Type and quantity of hazardous waste collected at the six pilot bring centres**



Figure 8 illustrates the types and quantities of hazardous waste collected per centre with the waste oils removed. This provides a clearer illustration of the distribution of waste types and kilograms per centre for pesticides, paint, veterinary medicines, oil filters and 'Other farm hazardous waste'. More detailed analysis will be undertaken in the future to compare waste type and quantities arising with, for example, farm enterprise type, size and livestock density to give a better indication of the likely amount and type of historical farm hazardous waste which is being stockpiled on farms due to the lack of a national scheme which would enable farmers dispose of this waste in accordance with EU and national waste legislation.



**Figure 8: Hazardous waste type and weights per centre (excluding waste oils)**



Collection of waste oil filters

## Waste electronic and electrical equipment (WEEE) and batteries

Electrical and electronic equipment (EEE) often contains hazardous components and substances which can be damaging to the environment and have adverse effects on human health. For example, fluorescent tubes contain mercury. Asbestos has been used in older appliances such as electric coffee pots, toasters and irons. Fluids which are typically found in heating and cooling appliances can contain ozone depleting substances, particularly fridges 10 to 15 year old. Some appliances can contain explosive gases such as ammonia. Lead and other hazardous substances can also be released from TV/computer monitor screens if damaged or cracked. Lead acid batteries are typically used in tractors and fences and there are many documented cases of livestock deaths as a result of lead poisoning due to the ingestion of these batteries.

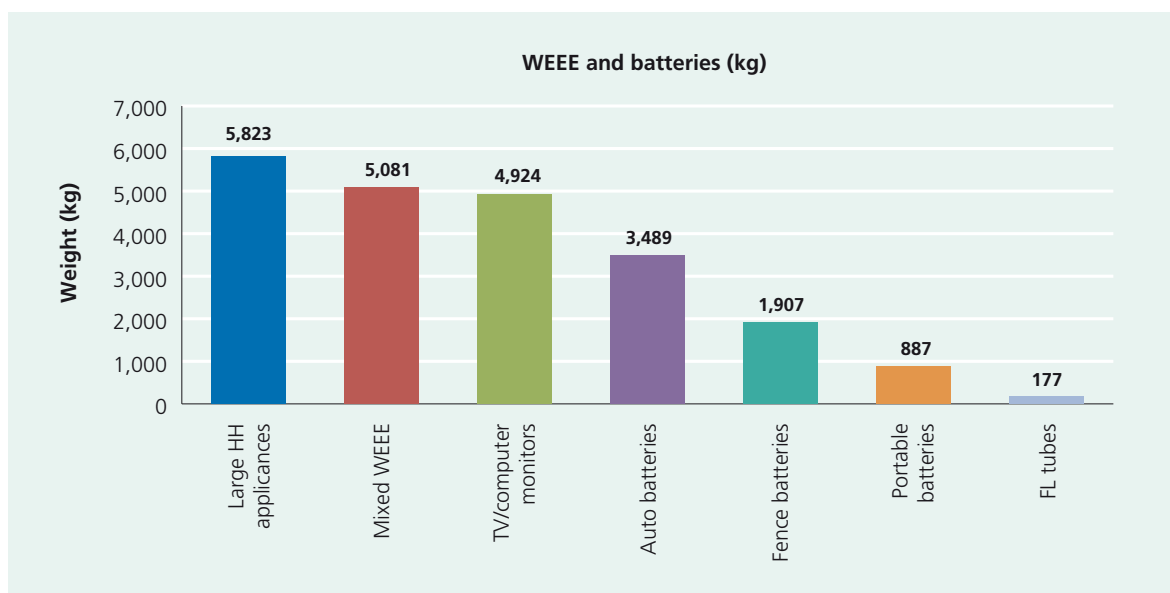


Examples of WEEE, batteries and lights collected at Ballinasloe bring centre

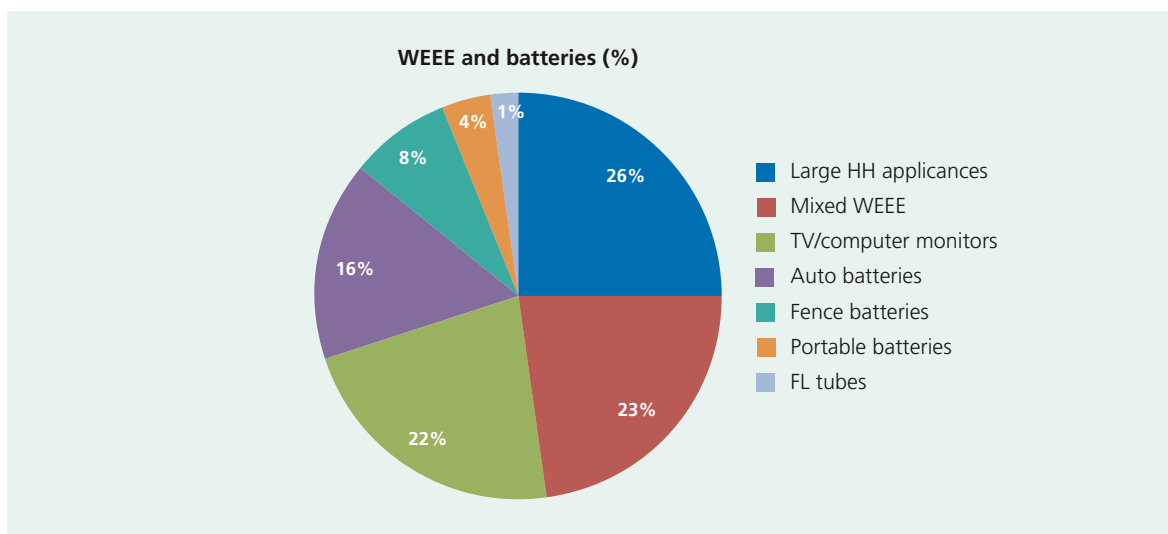
In total, 22,288kg of WEEE (which requires a battery or plug to operate), batteries and light bulbs were collected at the bring centres. These included large household appliances such as fridges, freezers and cookers; mixed WEEE such as kettles, toasters, power drills, hedge trimmers; TV and computer monitors; batteries (car, tractor, electric fence and small portable); and fluorescent tubes and light bulbs. Table 4 provides a summary of the types and quantities collected. Figures 8 and 9 illustrate the breakdown in kilograms and in percentages.

**Table 4: Type and quantity of WEEE and batteries collected (kg)**

Waste stream	Ballinasloe	Tullow	Ballymote	Trim	Midleton	Thurles	Total
Large HH appliances	936	991	295	195	1,368	2,038	5,823
Mixed WEEE	1,218	348	304	190	1,061	1,960	5,081
TV/computer monitors	1,549	386	402	260	803	1,524	4,924
Auto batteries	958	772	245	680	199	635	3,489
Fence batteries	76	574	80	238	210	729	1,907
Portable batteries	271	76	68	2	394	76	887
FL tubes	54	20	13	15	38	37	177
<b>Total weight</b>	<b>5,062</b>	<b>3,167</b>	<b>1,407</b>	<b>1,580</b>	<b>4,073</b>	<b>6,999</b>	<b>22,288</b>



**Figure 9: Type and quantity of WEEE and batteries (kg)**



**Figure 10: Type and quantity of WEEE and batteries (%)**

## Pesticides and Persistent Organic Pollutants (POPs)

The Pesticide Control Division of the Department of Agriculture, Food and the Marine (DAFM) undertook a more detailed assessment of the types, trade names and active substances in the pesticides which were collected at the bring centres. 14 tonnes of pesticides were collected for disposal and it was estimated that approximately 61% of the pesticides presented for disposal by the farmers were de-registered pesticides. A de-registered pesticide is a pesticide which is no longer approved for use, and is consequently removed from the register of pesticides by the Pesticide Control Division of DAFM. Where the reason for de-registration is in relation to likely deleterious health effects on consumers, users or the environment no sell out or use up phase is allowed. However, most de-registered pesticides can be sold for six months from the de-registration date and may be used for a further 12 months by farmers. After this 18-month period, the pesticide becomes a hazardous waste and the farmer can store it on-farm for up to six months where the general duties of holding waste apply, i.e., protection of human health and the environment, ban on mixing, correct labelling, etc.



Examples of POPs collected at the bring centres

Approximately 300kgs of the pesticides collected comprised Persistent Organic Pollutants (POPs). POPs are a group of toxic chemicals that persist in the environment, bioaccumulate in the food chain and can be transported long distances, mainly by air and water. Recognising the need to protect human health and the environment from POPs the Stockholm Convention on POPs was adopted and entered into force in 2004. Ireland became a party to the Convention in November 2010, which includes the requirement to control POPs including banning their use, restricting production and implementing measures to reduce or eliminate their release.

The 300kgs presented for disposal at the bring centres is considered to be a significant quantity due to their toxicity and persistence in the environment. The POP pesticides collected included DDT, lindane, dieldrin and endosulfan. The use of POPs is no longer permitted with many of them being banned from use since 1981. POPs are required to be destroyed in accordance with the EU POPs legislation (SI No. 850 of 2004)<sup>5</sup>. The age and condition of the containers is also a significant concern. Wastes containing POPs above certain concentration limits are required to be disposed of in such a way that the POPs content is destroyed or irreversibly transformed. Further information and Ireland’s National Implementation Plan on POPs is available at [www.pops.ie](http://www.pops.ie).



Examples of aged containers

5 For further information on POPs see <http://www.epa.ie/pubs/reports/waste/haz/nationalimplementationplanonpops.html>

## Section 3: Relevance to National Policy Objectives

The establishment of a national farm hazardous waste collection scheme would support the green and smart ambitions of the farming industry as well as enabling farmers to meet their legislative obligations under various national and EU legislation. It would also assist Ireland in fulfilling its obligations under elements of the Common Agricultural Policy (CAP) such as Statutory Management Requirements (SMRs) in cross-compliance and environmental legislation including international conventions. This pilot and any future national scheme will assist all relevant stakeholders in meeting ambitions, targets and obligations set out in various national and European programmes and legislation including:

1. The National Hazardous Waste Management Plan and the National Waste Prevention Programme
2. The National Implementation Plan for the Stockholm Convention on Persistent Organic Pollutants (POPs)
3. Producer Responsibility Initiatives and national targets
4. Water Framework Directive
5. Food Harvest 2020
6. Smart Farming – Help improve farm returns with better resource management
7. Single Farm Payment and cross-compliance
8. Sustainable use of pesticide and plant protection product Regulations

### National Hazardous Waste Management Plan

The EPA is responsible for preparing Ireland's National Hazardous Waste Management Plan (NHWMP) in accordance with Section 26 of the Waste Management Act 1996 as amended. The second such plan which covered the period 2008-2012 is currently being revised and will cover a period of six years from date of publication. A Proposed Revised Plan was prepared by the EPA and was made available for public consultation in late 2013. The Proposed Revised Plan (available at [www.hazardouswaste.ie](http://www.hazardouswaste.ie)) includes a focus on the management of farm hazardous waste with a recommendation to carry out a farm hazardous waste collection pilot, which should, for example, be used to inform any potential Producer Responsibility Initiative in this area.

### National Waste Prevention Programme (NWPP)

The original commitment to a NWPP was made in the Government Policy document *Preventing and Recycling Waste – Delivering Change* published in 2002 with the EPA nominated to lead and develop the programme. The NWPP was further strengthened by the adoption and transposition of the Waste Framework Directive which requires member states to prepare national waste prevention programmes with the objective of breaking the link between economic growth and waste generation.



The overall objective of the NWPP is to establish an ambitious programme that results in hazardous and non-hazardous waste prevention and minimisation and has three main strands; resource efficiency, statutory producer and holder of waste responsibilities and measuring progress through waste statistics reporting. The pilot farm hazardous waste collection scheme contributes to the ambitions of the NWPP whilst dealing with the legacy issue and demonstrating the need for a national scheme to assist in the management of these wastes. In addition, the information on the waste types and quantities obtained from the pilot in 2013 provides very good data on waste arising from primary producers in the agricultural sector, which will contribute to reporting requirements under the National Waste Report and the European Waste Statistics Regulations<sup>6</sup>. Further information on the NWPP is available at [www.epa.ie/pubs/reports/waste](http://www.epa.ie/pubs/reports/waste).

## Stockholm Convention on Persistent Organic Pollutants

Quantities of banned pesticides which have been classified as Persistent Organic Pollutants (POPs) were collected during the pilot scheme (e.g., lindane, dieldrin, DDT and endosulfan). POPs are toxic chemicals which are controlled under a global treaty (Stockholm Convention on POPs) and EU legislation (Regulation 850 (EC) of 2004). Wastes containing POPs above certain concentration limits are required to be disposed of in such a way that the POPs content is destroyed or irreversibly transformed. Further information and Ireland's National Implementation Plan on POPs is available at [www.pops.ie](http://www.pops.ie).



Examples of POPs – Dieldrex (dieldrin/organo-mercury seed dressing) and Lindane

6 Regulation (EC) No 2150/2002 of the European Parliament and of the Council on waste statistics.

## Producer Responsibility Initiatives and Targets

Producer Responsibility Initiative (PRI) schemes are multi-stakeholder systems with complimentary roles for registration bodies, compliance schemes, waste collectors, waste processors, brokers and regulatory authorities. Current PRIs in Ireland include those for packaging, waste electronic and electrical equipment, batteries and farm plastics and are waste specific. In broad terms, under these PRIs the producers of the products pay into the PRI scheme based on their reported market share and this funding is used to assist in the management of the wastes arising from the use of these products. A review of the PRI schemes currently operating in Ireland was undertaken in 2012 and the EPA made a submission to the Department of Environment, Community and Local Government (DECLG). In this review the EPA has recommended that PRI should be progressed for farm hazardous waste given the hazardous nature of these wastes, the potential risks associated with their storage and the dispersed geographical location of farms across the country. Given the logistics and also the mixed nature of this farm hazardous waste, a multiple producer responsibility scheme would ideally suit the funding and management of farm hazardous waste. Any scheme should look at using the expertise, skills and agricultural knowledge of the Irish Farm Film Plastics Producer Group which is the sole approved body in Ireland for the purposes of operating a compliance scheme for the recovery of farm plastic waste.

## Water Framework Directive

The Water Framework Directive is a key initiative aimed at improving water quality throughout the EU and it applies to rivers, lakes, groundwater and coastal waters. The objectives of the WFD are to protect, to prevent further deterioration and to restore degraded surface and groundwaters to good status by 2015. The Directive requires an integrated approach to managing water quality, and it, along with national regulations, sets out environmental quality objectives and standards that are required to be met for parameters in water. National regulations set out environmental quality objectives and threshold values for pollutants or indicators of pollutants in water and many of the hazardous substances found in farm hazardous waste which could cause environmental pollution are listed in the schedules to these regulations. These include heavy metals such as lead, mercury and cadmium, cyanide and pesticides such as DDT, MCPA, lindane, aldrin, dieldrin, chlorpyrifos and diazinon. For example under the European Communities Environmental Quality Objectives (Groundwater) Regulations SI No. 9 of 2010, for a groundwater body to achieve good groundwater chemical status, the total concentration of active substances in pesticides (plant protection products and biocides) in groundwater is 0.5µg/l total. The pilot farm hazardous waste collection scheme would clearly contribute to the delivery of achieving the objectives of the Water Framework Directive and associated national regulations by providing a mechanism whereby the hazardous wastes are removed from farm and recovered or disposed of in an environmentally sound manner thereby eliminating the risk of these substances leaking into water bodies.

## Smart Farming Resource Efficiency Initiative

Smart Farming is a collaborative initiative aimed at expanding the green business initiative ([www.greenbusiness.ie](http://www.greenbusiness.ie)) which focuses on resource efficiency in the farming sector. *Smart Farming – help improve farm returns with better resource management* seeks to influence behavioural change by demonstrating cost savings and environmental benefits that can be achieved by adopting resource efficiency measures on farms. It looks at resource use and efficiency on all farms across all sectors and highlight “top tips” in relation to feed, soil fertility, grassland, energy, machinery, water, inputs and waste and time management. The Smart Farming Guide was prepared and published in 2013 and is available at [www.smartfarming.ie](http://www.smartfarming.ie) or [www.ifarm.ie](http://www.ifarm.ie). This initiative brings together resource efficiency experience, expertise and skills already available in farm advisory groups and organisations. It is a collaborative initiative between the EPA, Irish Farmers’ Association (IFA), Teagasc, Sustainable Energy Authority of Ireland (SEAI), University College Dublin, Irish Grassland Association, Fertiliser Association of Ireland, National Federation of Group Water Schemes (NFGWS) and Farm Tractor and Machinery Trade Association (FTMTA).

Section 6 of the Smart Farming guide includes top tips on farm inputs and waste minimisation. If a farm does not generate wastes, it doesn’t have to spend time and money managing these difficult wastes. Optimising the management of inputs prevents waste generation and the guide provides advice on this and management of farm hazardous waste. For example, in relation to pesticides and veterinary medicines buy only what you need, implement good stock control and triple rinse pesticide containers directly after use. Further details on 7 Steps: Good practice guide for empty pesticide containers is available at [www.epa.ie/pubs/advice/waste/farm/goodpracticeguideforemptypesticidecontainers.html](http://www.epa.ie/pubs/advice/waste/farm/goodpracticeguideforemptypesticidecontainers.html). The pilot farm hazardous waste bring centres provide farmers with a much needed service to enable them to manage farm hazardous waste in a manner which protects the environment and safeguards the health of their families and livestock.

## Food Harvest 2020

Food Harvest 2020 sets out a framework plan for the development of the agri-food, fisheries and forestry sector in Ireland to support a dynamic forward looking agri-food sector. This sector is Ireland’s largest indigenous industry with economic, social and environmental interdependencies which employs over 150,000 people and has an annual output of over €24 billion. The vision adopted in the framework plan is for the sector to act smartly to achieve competitive critical mass in the international marketplace and target those consumers who recognise and reward primary food producers for their green output. Farmers therefore need to be able to demonstrate their green credentials, e.g., as primary producers farmers play a valuable role as guardians of the rural environment; by increasing efficiency per unit of production farmers reduce the inputs required for their operations whilst protecting the environment, etc. These measures adopted by farmers will assist in the positive branding of Ireland as green and clean. The pilot farm hazardous waste scheme clearly contributes to the ambitions of Food Harvest 2020 by providing farmers with a suitably and affordable means for disposing of these wastes in an appropriate and safe manner. For further details on Food Harvest 2020 see [www.agriculture.gov.ie/agri-foodindustry/foodharvest2020](http://www.agriculture.gov.ie/agri-foodindustry/foodharvest2020).

## Bord Bia Quality Assurance Schemes

The primary objectives of the Beef and Lamb Quality Assurance Scheme (BLQAS) are to set out the requirements for best practice in beef and lamb production at farm level. The aim of the scheme is to provide a uniform mechanism for recording and monitoring beef and lamb quality assurance criteria on the farm with a view to achieving continuous improvement in production standards; to provide a means of demonstrating best practice at producer level; and to underpin the successful marketing of quality assured beef and lamb.

Correct storage and disposal of unused/empty/expired animal medicines, veterinary waste (e.g., used containers, used needles and syringes, etc.) and pesticides is an essential part of the BLQAS. Correct storage requirements for all animal remedies is a requirement. Under the BLQAS, all hazardous waste must be managed in such a way as to ensure the protection of the human and animal health and environment and requires that the disposal of such waste should be in accordance with relevant legislation and the services of an authorised hazardous waste contractor should be used. It also advises farmers that their veterinary surgeon or veterinary pharmacy/licensed merchant may also provide a disposal service to clients for expired/unused medicines (as distinct from empty containers). The pilot farm hazardous waste scheme provided the opportunity for farmers to dispose of these wastes in accordance with the objectives of the BLQAS. A certificate of disposal was issued to all farmers using the centres.

## Single Farm Payment (SFP) and Cross Compliance

All farmers who are in receipt of a SFP must adhere and comply with 19 Statutory Management Requirements (SMRs) set down in EU legislation on public health, animal and plant health, animal welfare and the environment. Farmers must also maintain the land in good agricultural and environmental condition (GAEC). One per cent of all farmers in receipt of a Single Farm Payment are inspected for all SMRs relevant to their farming system.

SMR 9 relates to the authorisation, placing on the market, use and control of plant protection products. Farmers must adhere to the following rules:

1. Only authorised or registered plant protection and biocidal products may be stored and used;
2. Plant protection and biocidal products must be stored, handled and used properly as specified on current approved product labels;
3. Plant protection products must, when appropriate, be used in accordance with the principles of integrated pest control;
4. Plant protection products must be used in accordance with the principles of good plant protection practice;
5. Records of acquisition, use and disposal of plant protection and biocidal products must be maintained and be produced for inspection; and
6. Plant protection and biocidal products that are no longer approved for use must not be retained.

## Pesticide Legislation

Pesticides also known as Plant Protection Products (PPPs), are among the most crucial inputs for consistent production of high quality food. Judicious use of PPPs, coupled with prudent use of fertilisers, has resulted in our ability to produce crops of enhanced quality and yield potential. Consumers can be confident that crops produced in Ireland and indeed throughout the EU are the safest in the world, and present no appreciable risk to consumers, consumed either straight or in processed form.

PPPs are by their nature biologically active and are designed to control organisms which are harmful to crops, e.g., weeds, insects, plant pathogens and essentially anything injurious to the health and integrity of the plant or plant product. They are also used routinely in municipal and amenity contexts to maintain aesthetically pleasing and safe environs in which the general public can exist. Without their use, crop yields would be greatly reduced (up to 50% or more) food quality would be reduced, and the amenity and municipal areas would be reduced to an untidy condition.

The Department of Agriculture, Food and the Marine (DAFM) is responsible for implementation of the Regulatory system for plant protection products in Ireland. The regulatory system is designed to ensure a very high level of protection for humans, animals and the environment. This regulatory system operated by DAFM has four main elements:

1. The regulatory (licensing) system for plant protection products and biocides
2. The national monitoring programme for pesticide residues in food
3. The collection of statistics on pesticide use
4. The sustainable use of pesticides (national action plan, training of users, testing of sprayers, etc.)

The DAFM maintain a register of pesticides which are approved for use and it is now an offence to store a plant protection product that is no longer registered for a variety of reasons e.g., no longer effective, active substance banned from use, etc. Once a pesticide is de-registered, a farmer has 18 months to use up this product. After this period, the pesticide becomes a hazardous waste and the farmer can store for up to six months where the general duties of holding a waste apply, i.e., protection of human health and the environment, ban on mixing, correct labelling, etc. Further information on de-registered pesticides is available from the Pesticide Control Division of DAFM at [www.pcs.agriculture.gov.ie](http://www.pcs.agriculture.gov.ie).

## Health and Safety on Farms

Some wastes on farms are hazardous. Hazardous wastes are defined as wastes that have the potential to cause harm to human and animal health and the environment. The properties that make these wastes hazardous include:

1. physical properties such as being flammable, explosive and/or oxidising;
2. health hazard properties such as being an irritant, toxic, carcinogenic, corrosive or infectious;
3. being toxic for reproduction, mutagenic and sensitising; and
4. environmental hazardous properties such as being toxic to the aquatic and terrestrial environment or hazardous to the ozone layer.

Farm hazardous wastes therefore have the potential to cause harm to farmers, livestock and the environment. The pilot farm hazardous waste collection scheme provides the opportunity for farmers to remove these hazards from their farms and minimise the risks associated with long-term storage and thereby reduce the potential for farm accidents to occur.

## Section 4: Conclusions and next steps

### Conclusions

This pilot proves that there are substantial quantities of hazardous waste present on farms (both legacy and current) which poses a risk to the surrounding environment. The pilot also contributed to, and supported, many existing national legislative and policy requirements and ambitions relating to the agriculture industry. The pilot also contributes to Ireland's green credentials as primary food producers. This initiative clearly demonstrated the benefits and added value of inter-agency collaboration and co-operation, active stakeholder engagement resulting in real on-the-ground environmental protection. The absence of a suitable and affordable national scheme for the management of farm hazardous waste has been clearly identified by this pilot scheme. It is important that the overwhelming support from the farming community is recognised. Farmers want to manage these wastes in accordance with the relevant legislation and have demonstrated this by their participation in the pilot scheme and also their willingness to contribute financially to their safe disposal. The issue is not so much a "willingness to pay" problem, but one of access and convenience.

Given the success of the pilot scheme, the support by farmers, and the clear demand and need for a national scheme to facilitate the collection of farm hazardous waste, the project partners have agreed to run another pilot in 2014. In 2014, the project team will run an additional eight pilot bring centres across different locations in November. Information on the types and weights of farm hazardous wastes will be collected to add to the information collected in 2013 and to provide for a more accurate estimate of the quantity and types of farm hazardous waste being stockpiled on farms. The lessons learned during the 2013 pilot scheme such as the importance of site location and ground conditions; traffic management; the importance of effective collaboration between state agencies and with site owners; resources and facilities required at the bring centres; expert knowledge; effective advertising and communication; health and safety issues will all contribute to assisting the project team in running successful pilot bring centres in 2014. There is a obvious need for a long term sustainable and self financing scheme for the management of farm hazardous waste to prevent stockpiling on farms. The additional knowledge gained from the 2014 campaign will contribute to advancing some progress in relation to this. The project team considers that the agri-chemical and veterinary manufacturers, importers and distributors could be required to contribute to the management of farm hazardous waste through a producer responsibility initiative along similar lines to the existing farm plastics PRI. The establishment of a PRI will help prevent a legacy issue arising again in the future.



## Next steps

The project team is progressing the following activities:

1. An additional eight bring centres will be operated by the project partners in November 2014 as part of the pilot national campaign for the collection of legacy hazardous waste. The locations of the sites will be agreed between the partners in 2014. This joint national campaign will be supported by EPA, Teagasc, the Pesticide Control Division of the DAFM, DEHLG and local authorities. The existing Local Authority Prevention Network (LAPN) will be used to get better engagement at the county level for this initiative. Members of the LAPN have already expressed their willingness to support the running of the pilot bring centres. The information collected in 2014 will be amalgamated with 2013 to provide the basis for an accurate national estimate of the quantity of farm hazardous waste which is currently stockpiled on farms.
2. The DECLG will issue a circular in relation to the non-requirement for waste facility permit under the Waste Management (Facility Permit and Registration) Regulations SI No. 821 (as amended) for the operation of these one-day bring centres.
3. The Pesticide Control Division of DAFM is exploring the possibility of imposing a levy on the pesticide industry that is ring fenced to support the funding of the disposal of de-registered pesticides.
4. DAFM will promote the farm hazardous waste bring centres which will be operated in 2014.
5. Teagasc to use existing information sessions and group discussions to publicise the 2014 campaign.
6. Other relevant farming agencies and organisations such as IFA, ICMSA, Bord Bia, Agricultural Consultants Association, etc., will be contacted to assist in promoting and publicising the 2014 campaign.
7. A producer responsibility initiative could be considered by the DECLG whereby manufacturers, importers, distributors and retailers of biocides, pesticides and veterinary medicines provide for a national scheme for the management of farm hazardous waste. Existing knowledge and expertise developed by the Irish Farm Film Producers Group (IFFPG) could inform the development and implementation of such a scheme. It is recommended that the DAFM and the DECLG engage with each other on this issue and the project team will provide support as required.





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