Let’s move forward together

While farming is the biggest job on earth, farmers are not facing the challenge alone. We support productive, sustainable agriculture, allowing farmers to protect the land they hold in trust for future generations while meeting the demands of modern society.

We pledge to:

■ Invest in the right solutions to enable farmers to grow more quality food, more efficiently.

■ Share our expertise to help farmers to make a better life for themselves and their communities.

■ Never compromise on safety to allow farmers work in a safe environment and produce safe, healthy food.

In everything we do, we will play our part in leaving a positive environmental inheritance.

We stand shoulder to shoulder with farmers. Together, we will move forward on our journey.

Container Management

■ Safety is paramount

Empty containers of crop protection products can pose a risk to human health and the environment. In some societies, they are re-used to store other materials like water and foodstuff. Farmers, particularly those with no easy alternatives, often discard empty containers. Others burn the containers on the farm, releasing toxic fumes from both the residual pesticides and the container material.

The key to solving this problem is to design environmentally sensitive packaging, educate farmers on responsible use, and establish multi-stakeholder programs, which remove empty containers with the goal to recycle the plastic. This is what we are continuously working on.

■ Packaging is a fundamental part of our product stewardship program

We view the containers and packaging in which our products are sold as an important part of our life-cycle approach to product stewardship. We collaborate with industry partners Crop Life International and the European Crop Protection Association to support container management programs and policies in four main areas:

• Environmentally sensitive research and design
• Training on responsible use
• Collection and recycling programs
• Sharing our expertise and know-how
Sharing our expertise and know-how

BASF provides expertise to assess the sustainability of container management programs:
- We have developed an analytical method, called micro extraction, which is regarded as best practice globally. It allows to identify qualitatively and quantitatively of certain crop protection products present during the present in plastic during its life cycle.
- We sponsor a person to lead Container Management projects at the European Crop Protection Association
- We have also provided the project lead for the Crop Life International Container Management Project Team, the group responsible for supervising collection and monitoring of empty containers globally.
- A BASF-sponsored person also leads the Packaging Expert Group (ECPA), working on all topics related to packaging.

Collection and recycling programs

We participate in industry programs in partnership with stakeholders like government and local authorities to support the collection and recycling of rinsed containers. Partners are the Food and Agriculture Organization of the United Nations (FAO), the Organisation for Economic Co-operation and Development (OECD), Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), the United States Agency for International Development (USAID) and local governments.

Container collection programs are currently in place in 68 countries. During 2013 and 2014, collection programs were successfully established in Russia, Greece, Serbia, Bulgaria, Cyprus and Slovakia. Plastic recovered through these programs can be converted into a variety of useful products such as fence-posts, parking cones or drainage pipes.

The BASF eco-efficiency tool measures different parameters to show impacts on economic and environmental efficiencies. Parameters includes the number of, and distance between collection sites, transport sites and plastic end use applications.

Training on responsible use

As part of leading industry-wide programs, BASF trains farmers, helping to raise general awareness about the importance of proper container management. This includes advising farmers to:
- purchase appropriate-sized containers and use only the right amount of product, necessary to complete the required task
- use returnable or refillable containers, where possible
- never decant crop protection products into other containers
- never use empty containers for other uses (storing food, water, fuel etc.)
- properly clean and prepare empty containers for collection and recycling, using the triple-rinse method, which removes 99.99% or more of the product

The good news is that the cost per kg of recovered plastic has steadily decreased, making the sustainable introduction or continuation of container management programs more viable.

Environmentally sensitive research and design

We continually work to produce better, easier to handle and more environmentally sensitive packaging. Innovations include:
- BASF Ecomatic®, a closed transfer system, which ensures safe and easy handling of crop protection products during the mixing, loading phases
- The Calixin MTC-System, introduced by BASF in the mid-nineties in Central America for transferring and metering of liquid banana fungicides. Shortly after its introduction it became a standard and is still in use today
- water-soluble bags
- small, ready-to-use packs (suitable size for backpack sprayers)
- multi-trip, returnable containers
- one-way, single-trip containers made of recyclable materials
- our new eco-pack line reduces plastic by approximately 20%. This reduction in weight means less plastic needs to be produced, transported and re-cycled.

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Container management programs across the world

Program benefits

Container management programs deliver a variety of benefits to farmers and the environment, including:

- safe delivery of products protecting the farmer and environment from unnecessary exposure
- safe disposal of used packaging
- reducing waste and maximizing recycling
- conserving resources
  - energy savings (reducing the need to burn gasoline or extract oil)
  - saving landfill space
  - reducing carbon emissions

Our network

- BASF experts in the countries and regions
- Our customers: farmers, retailed and distributors
- Contract partners who are able to set-up and control container management programs from a logistical and technical perspective
- Ambassadors who liaise with government and local authorities to ensure program implementation

The New Zealand experience

In 2007, BASF helped found the Agrecovery rural recycling program in New Zealand. Fast forward eight years, and New Zealand farmers have recycled a staggering one million kg of plastic containers.

The Agrecovery program offers farmers free recycling of plastic containers. 60 brand owners of agrichemical, dairy hygiene and animal health products now support the program with more than 70 permanent collection points throughout the country. The recycled containers are sent to Astron Plastics in Auckland for processing into items such as underground electrical cable cover.

The recycling means that farmers have avoided creating the equivalent of 8500 cu m of farm dumps or unnecessarily polluting the air and land by burning the plastic. Trainings on Product Stewardship for BASF staff; the trainees take a written exam to prove their comprehension.
Did you know ...?

Under the Integrated Pest Management and Responsible Use training programs, more than 650,000 individuals are trained each year.

In 2013 83,000 containers were collected, and most of them recycled.

Using 83,000 metric tons of recycled plastic vs. new plastic:

**Saves energy** equal to 156 million liters of gasoline

**Saves** 707,000 cubic meters of landfill space

Equivalent to removing 28,500 cars from the road per year

Equivalent to 283 Olympic-size swimming pools

Sources
- CropLife International

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