



Ag Container Recycling Council Program Update

Maine Potato Summit

January 11, 2023



Agenda

- ACRC Overview
- ACRC Current Situation
- Disposal and Recycling
- Inspection and Rinsing
- Collection Challenges
- Northeast contractor - Ag Plastic Solutions



Who is the ACRC?

- Ag Container Recycling Council (**ACRC**) – industry initiated
 - Not for profit corporation, formed in 1992
 - Oldest stewardship program in US
- Promotion and education of triple or pressure rinsing
 - Collaboration with EPA
 - Developed ANSI / ASABE S596 Standard
- Provides research and funding for Ag container collection and recycling into acceptable end uses.





Our Mission

The mission of the ACRC is to conduct research regarding potentially acceptable uses of rigid **HDPE plastic agricultural crop protection, animal health, specialty pest control, micronutrient, biologicals, fertilizer, and/or adjuvant product containers (up to 56 gal)** and to support the collection and recycling of containers through promotion of cost-effective programs that foster public health and safety, environmental protection, resource conservation, and end user convenience.

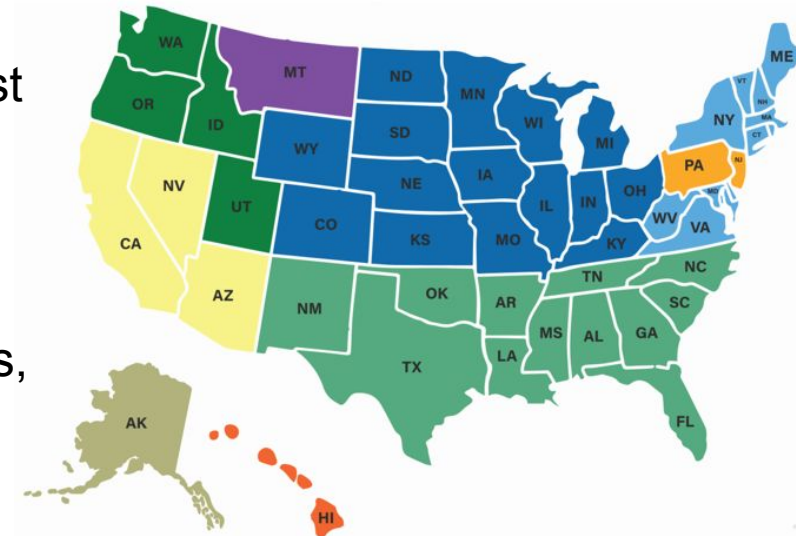


An industry funded free service to farmers and commercial applicators for 30 years!



Program Scope

- 6 Contractors (5 private, 1 state - MT)
- 2 independent state sponsored programs (NJ, PA)
- 47 states covered (excl. AK, state sponsored programs)
- **Collection site scenarios:**
 - On farm, retail outlets, aerial and ground applicator locations, pest control applicators, state ag extension locations, solid waste landfills, golf courses, nurseries
- **Product scope:** HDPE plastic 55 gal drums and smaller:
 - Pesticides, animal health, micronutrient, biologicals, biostimulants, fertilizer, and/or adjuvant product containers.
- **Market scope:** Professional ag and non-ag markets:
 - Crop protection, aquatics, forestry, nursery & greenhouse, public health, structural pest control, turf & ornamental, vegetation management.





Our Members



ADAMA Agricultural Solutions, Ltd.
Ag Tank Solutions, LLC
Albaugh, Inc.
AMVAC Chemical Corporation
Atticus, LLC
Avenger Products LLC
Barrier Plastics, Inc.
BASF Corporation
Bayer CropScience
BERICAP
Brandt Consolidated, Inc.
CCL Label, Inc.
Certis USA, LLC
Corteva Agriscience
Elanco US Inc
Elkhart Plastics
Ensys, Inc.
FarmChem
Fine Americas, Inc.

FMC Agricultural Products
Fortis Solutions Group
Gowan Company
Greif Packaging, LLC
Helena Agri-Enterprises, LLC
Inhance Technologies
iPackChem USA, LLC
Lee Container
Liphatech, Inc.
Mausier Packaging Solutions
Miller Chemical & Fertilizer
Nichino America, Inc.
Nufarm Americas, Inc.
Nutrien Ag Solutions
PBI/Gordon Corporation
Plant Food Systems, Inc.
Pretium Packaging
Pro Farm Group, Inc.

PROKoZ, Inc.
Reliance Products, LP
Ring Container Technologies
Schuetz Container Systems, Inc.
SePRO Corporation
Silgan Plastics, LLC
Snyder Industries LLC/Bonar Plastics Brands
Syngenta Crop Protection
Taylor-Cain Corporation
Tenkoz, Inc.
TKI/NovaSource
UPL NA Inc.
Valent Group Companies
Vive Crop Protection
Wilbur-Ellis Company
Winfield United, LLC
Zoetis, Inc.

35 Regular Members, 19 Affiliate Members



General Funding Model

Voluntary membership funded by producers & registrants of chemicals sold in HDPE containers.

- Annual survey of members provides pounds HDPE sold.
- Annual budget / annual pounds = annual dues (\$ / Lb.)
- Each member pays “fair share” of budget based on their HDPE pounds sold.
- Over \$118M funded by ag industry since inception.

Cost to grower / applicator is zero!



Logo - What do you see?



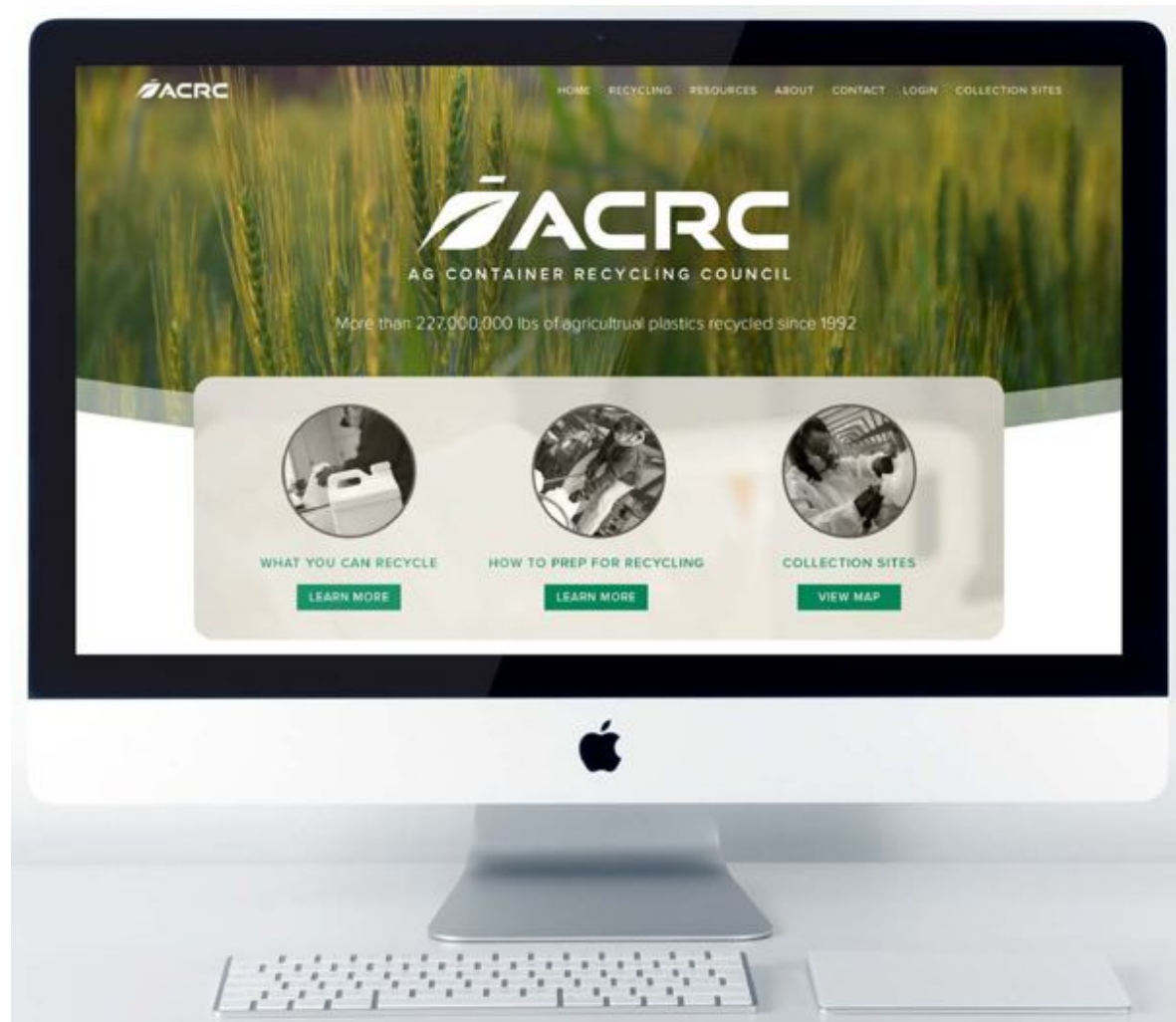
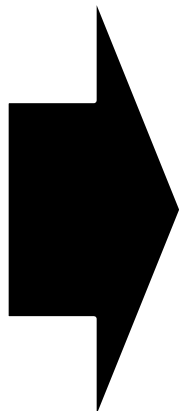
The ACRC logo is an image that represents both our industry and our purpose.

The green leaf is the most common representation of the agricultural community that we serve. The leaf also depicts an ag chemical container, with the single line above it being the cap of the container. Stewardship of the ag chemical container has been our purpose since day one of the ACRC!



Check Out Our Website...

www.agrecycling.org





Program Achievements

1993 – 2022 Year End

- 236 million pounds collected & recycled!
 - Enough 6" ag drain pipe to circle the earth 2.6 times!
- 1.18 million cubic yards of landfill space saved
- 103,000 MT of CO2 emissions saved

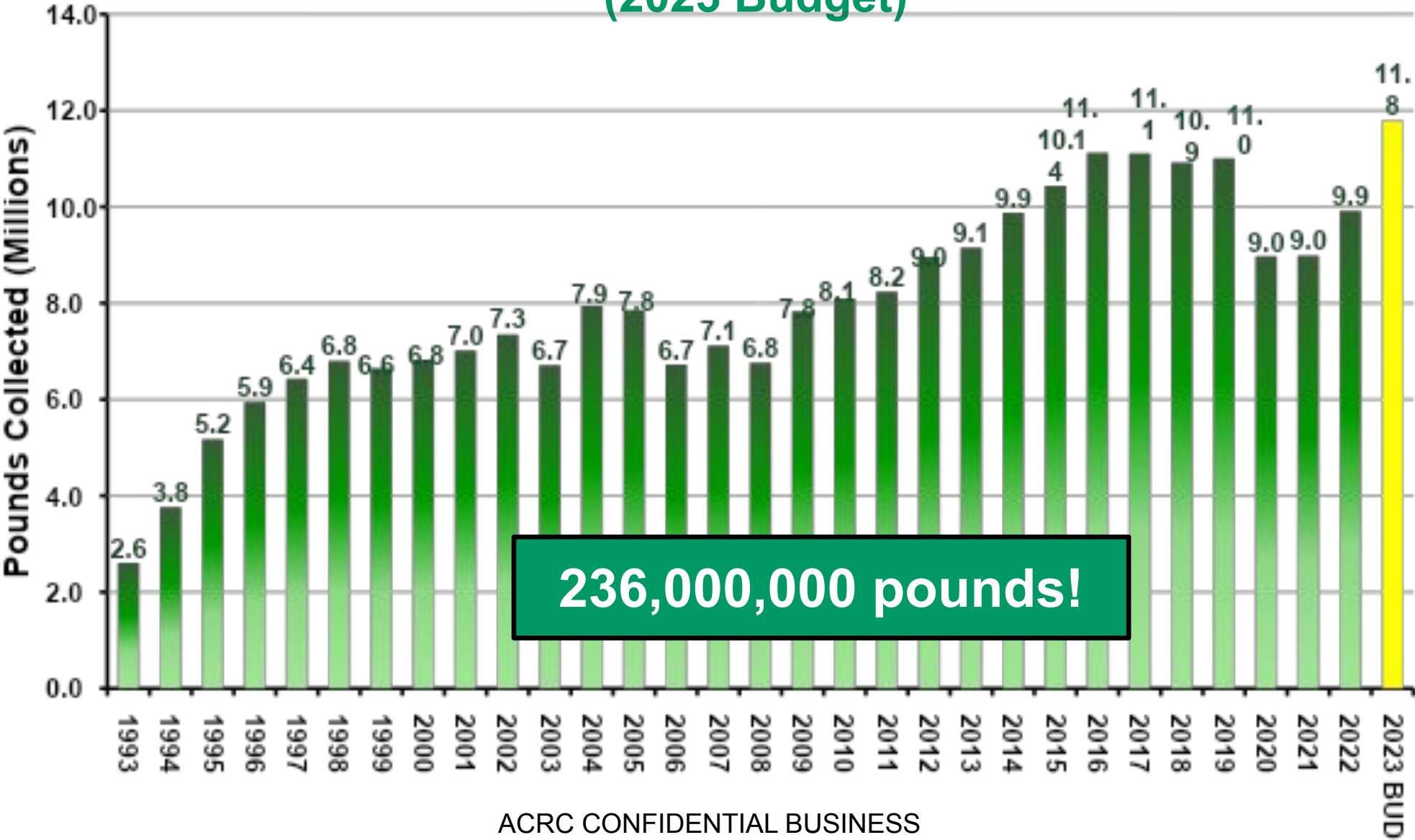
Equivalent to:

- ☐ 30,680,000 gal of gasoline
- ☐ 66,200 US households energy consumption for 1 year



1993-2022 History

(2023 Budget)





Current Situation

- Macro Operating Environment & Challenges
- New England Specific



Current Situation

Macro Operating Environment & Challenges

- US supply / demand imbalance in recycled plastic markets
 - 2017 China “National Sword” policy
 - 2021 Basel Convention further reduced waste plastic exports
- Volatility of plastic markets
 - Excess polyethylene (PE) capacity in North America, more on the way
 - “Wide spec” virgin PE competing with HDPE regrind
- Escalating contractor costs due to increased wage rates, driver shortages, inflation and regulations.
- Packaging regulations / legislation
 - Packaging EPR (Extended Producer Responsibility)
 - Emerging trend of recycled content mandates



Current Situation

New England Specific Situation

- Long ACRC history of four (4) baling collection sites in ME and NY
- New contract awarded for northeast territory in 2021 – Ag Plastic Solutions
- Baling locations discontinued in 2022 due to safety concerns
 - Dirty containers
 - Inability to inspect crushed containers
- Less ag intensive region makes northeast recycling economics more challenging
 - Shorter growing season accentuates this problem
- Need to grow number of traditional ACRC collection sites in northeast
 - Larger growers
 - Applicators
 - Retail



Disposal & Recycling Overview

- Acceptable disposal options
- ACRC collection process
- Recycling End Uses
- ACRC collection site scenarios
- Storage of empties
 - Securement
 - Best practices

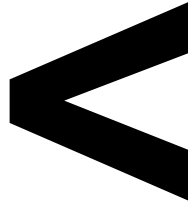


What happens to all those containers?





Acceptable Disposal



**Continuing to put pressure
on our landfills is NOT
sustainable !**

**Recycling container resin
is a much more sustainable
option !**



Unacceptable Disposal



**Burning, burying or stockpiling is NOT
healthy or good for the environment !**



ACRC Collection Process



Containers Rinsed by User



Must be pressure or triple rinsed to be accepted!



Contractor Equipment on Site





Contractor Inspects Containers



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Contractor Grinds or Compacts Containers



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Ground Plastic





Plastic Flakes are Washed



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ACRC Approved End Use

Example - Drain Pipe



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Existing Approved End Uses

- ✓ Corrugated HDPE drain pipe
- ✓ Highway sign posts
- ✓ Highway and agricultural fence posts
- ✓ Spool flanges for wire cable
- ✓ Underground utility conduit
- ✓ Agro chemical composite IBC base plates
- ✓ Industrial pallets for ag chemical and seed
- ✓ Rebar chairs
- ✓ Landscaping Edging
- ✓ Nursery Pots
- ✓ Construction / ground protection mats
- ✓ Plastic cinder blocks





Collection Site Scenarios

- Grower – on farm
- Ag retail location
- Commercial applicator location (ground, aerial)
- Public landfill (municipal / county)
- Ag extension facilities
- County recycling centers (MRF, convenience centers)
- Golf courses
- Nursery / green house
- Pest control operators
- “Clean sweep” events (pesticide collection days)



Container Storage

- Cages, bags, trailers, twine, shelters, shipping containers, fencing, etc.





Storage Best Practices

- Keep jugs secured:
 - Closed container, pen, trailer, or fencing
 - Locked access if a public collection site
 - Large poly bags (but ONLY if ALL jugs are clean)
 - Simplest - Twine through the handles and tie down!
 - Cover whenever possible
- Rinse at the time of use before storing
- After rinsing – drain and puncture containers
- After rinsing - remove drum bungs and flip upside down
- After rinsing – keep IBC valves open



Inspection & Rinsing

- Inspection Checklist
- Inspection Criteria
- Rinsing Best Practices
- Rinsing Tools
- Rinsing Procedures:
 - Jugs
 - Drums
 - IBCs



Inspection Checklist



INSPECTION CHECKLIST

The ACRC program accepts containers when all of the conditions and actions listed below have been met:

- ✓ **Containers:** Only rigid high density polyethylene (HDPE) are accepted. Some HDPE containers have a thin barrier of other co-manufactured material that is acceptable. Containers will be embossed with resin code #2, and sometimes #7.
- ✓ **Clean:** Only properly rinsed containers will be accepted into the recycling program. Rinse the container 3 times or pressure rinse immediately after it is emptied. Containers are much easier to clean if rinsed immediately after use. Add the rinse water to the spray tank.
- ✓ **Use:** The container originally held an EPA registered pesticide labeled for biologicals, animal health, agriculture, forestry, vegetative management, specialty pest control OR a non-EPA registered crop protection adjuvant, crop oil, micronutrient, fertilizer, or surfactant.
- ✓ **Inspected:** Immediately after rinsing the container, look inside and make sure that all the formulation has been rinsed out. Also, inspect the outside of the container; particularly check that the pour spout, the spout threads and the container wall surrounding the spout are free of formulation residues that flake, smear or come off on a glove when touched. The recycler cannot process containers that have removable formulation in or on them.
- ✓ **Professional Use:** The contents of each container were used by a farmer, commercial applicator or a person under the direct supervision of a farmer or commercial applicator.
- ✓ **Stains:** Certain products discolor plastic with a penetrating stain. The stained containers are acceptable provided that no material can be smeared or removed when touched by a rubber glove.
- ✓ **Sizes:** Containers are accepted from the smallest sizes up to 55 gallons in capacity. For sizes greater than 55 gallons in capacity, contact your designated ACRC contractor. Scan the QR code below for more information.
- ✓ **Booklet/Label:** Booklets must be removed. The pressure sensitive label (base label) that adheres to the container may remain as some states require it to remain on the container.
- ✓ **Empty:** Containers must be empty to be recycled in the ACRC program. No dried on residue inside or outside the container, including the mouth of the container. Puncture the bottom of the container to insure no rinsate remains.
- ✓ **Dry:** An acceptable container is a dry container. Store cleaned containers in an enclosed building or trailer or in plastic bags. The recycler will not accept a container that has liquid in it.
- ✓ **Non-Acceptable Parts:** Cap removed and discarded. Caps and other non-HDPE parts, such as metal handles and rubber linings, cannot be recycled. Clean and discard these parts as normal solid waste. Never put a cap back on a rinsed container.
- ⊗ Containers that originally held consumer products, or home and garden pesticides are **NOT ACCEPTABLE**.

ACRC Contractor

Information



CLEAN means CLEAN

- INSIDE AND OUTSIDE -

TRIPLE RINSED means TRIPLE RINSED

- NOT ONCE OR TWICE -

Download from ACRC Website

KEY POINTS:

- HDPE, 55 gal or smaller
- Professional use
- Empty of all product
- Clean means clean!
 - Inside / outside
- Triple rinsed – **more if still not clean!**
 - Not once or twice!
 - Or pressure rinsed
- Stains are OK, residue is NOT
- Throw away caps, bungs, or fittings
- Remove label booklet
- Drained of all rinsate





Inspection Criteria

ACCEPTABLE



Container, thread, and lip are clean



Handle and neck stained but clean



Inside stained but rinsed clean



Inside is clean and dry

NOT ACCEPTABLE



Dried formula on container



Dried formulation on thread



Liquid residue in container



Dried residue inside container



Rinsing Best Practices

Why is rinsing important?

- Required by law - EPA 40 CFR Parts 9, 156 and 165
- ACRC contractors are not allowed to collect dirty containers!
- Improves your return on your chemical investment
- Properly rinsed containers are classified as clean, solid waste (non-haz)

- USE ALL OF THE PRODUCT – good financial sense!
- Rinse container immediately...don't allow drying and caking!
- Add rinsate to the mix tank and field apply all rinsate!
- Use proper rinsing tools and procedures
- After rinsing jugs – pierce bottom of the jug to drip dry
- After rinsing drums - remove drum bungs and flip upside down
- After rinsing IBCs – keep IBC valves open
- Remove / rinse caps, bungs and label booklets – discard in trash
- Base labels can remain
- Inspect the container per ACRC inspection checklist

**IF NOT CLEAN AFTER TRIPLE RINSING,
CONTINUE RINSING UNTIL CLEAN !!**



Rinsing Tools

Pressure Rinsing: Jugs

Axiom Products – Accu-Tech Jet Rinse Triple-Rinse Nozzle

<https://axiomproductsusa.com/accu-tech/jet-rinse/>



Connects to a conventional garden hose!



Rinsing Tools

Pressure Rinsing: Jugs

Chem-Blade Original

<https://chemblade.com/chem-blade-original>



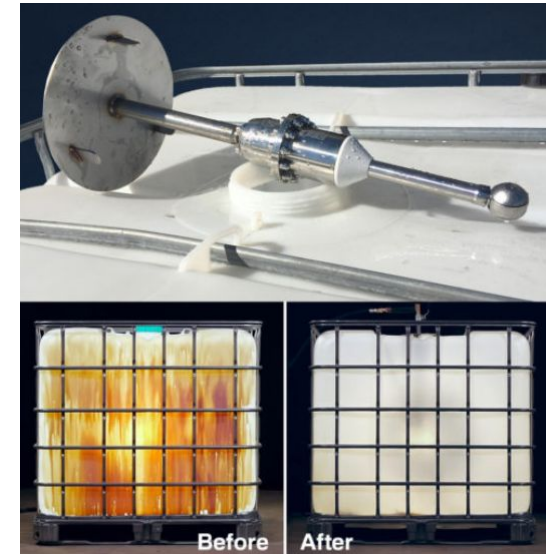
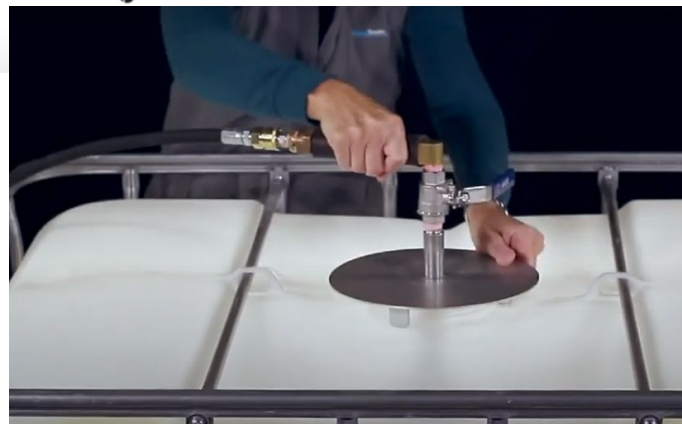


Rinsing Tools

Pressure Rinsing: Drums & IBCs

AaquaTools ToteBlaster LT

<https://aaquatools.com/products/rotary-spray-jet-heads/toteblaster-lt/>



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Rinsing Procedures

Procedure Resources:

<https://www.agrecycling.org/recycling/container-rinsing/>



- Pressure Rinsing
 - Small containers
 - Drums
- Triple Rinsing
 - Small containers
 - Drums





Collection Challenges



Key Collection Challenges

- Inefficiency of collection sites
 - Increase retail participation
 - Consolidate smaller growers to retail sites
- Inadequate rinsing of containers
- Unmonitored collection sites
- Safe access for contractor crews
- Proper storage of containers



Collection Site Concerns



- Dirty Containers
- Unmonitored Collection Sites



Safe access for contractors



- Dock safety
 - Stability / solid & secure
- Floor safety
 - Not slippery
 - No holes
- Odor / fumes – no spilled chemicals



ACRC Northeast Territory Contractor

Ag Plastic Solutions



- Justin Geisinger
- Chambersburg PA





Collection Model



- MACK compactor truck
- 2-person crew
- Well received collection model
- No on-site grinding



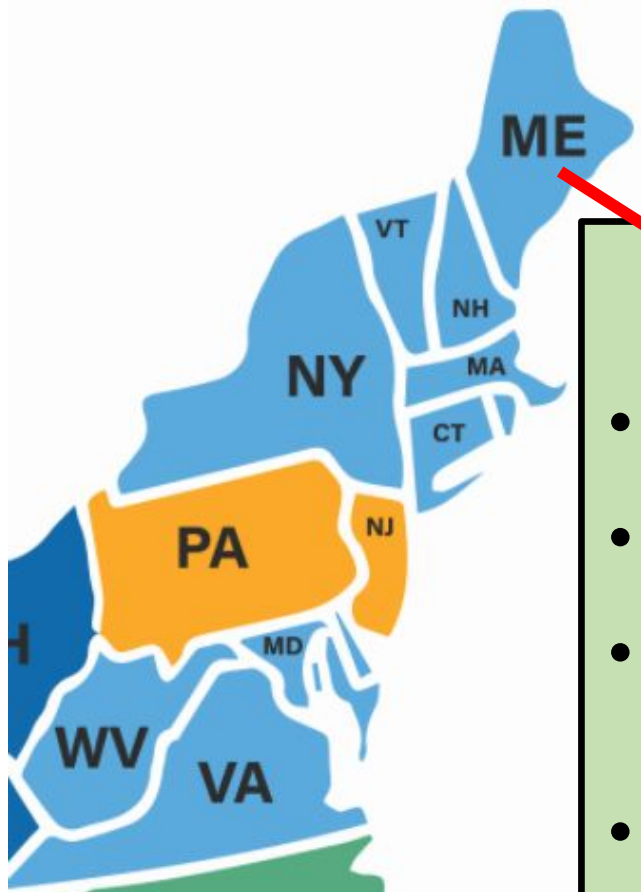
Collection Timing



- Timing based on regional applicator / grower needs
- Related factors:
 - Communicated needs
 - Consolidating multiple sites volumes
 - Past history
- Typically 1 – 2X / year
- June – December



Maine Collection



MAINE SPECIFIC

- July & October pickups – pending pounds available
- 10,000 lbs to fill truck = 4 full van trailers (53') of jugs
- Pickup at retail sites or large growers
 - Actively seeking new collection sites
- ACRC inspection criteria required; clean inside & out



Communication Process



Ag Plastic Solutions, LLC

- Justin Geisinger
- **717-446-9917**
- **info@agplasticsolutions.com**

- Call or email the office to request collection
- Office will follow-up to schedule collection and gather details
- Tentative schedule for specific week
- Will call ahead when en route



Access to Containers



- Driving access for truck
- Location of containers clearly communicated
- Crew access to containers
 - Safe access and environment
 - Storage unlocked or accessible



Resources Available

- Informational brochures
- Training brochures
- Posters – English / Spanish
- Cap Seal Removers





THANK YOU!

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MORE THAN 227,000,000 LBS OF AGRICULTURAL PLASTICS RECYCLED SINCE 1992



Challenges

New / Emerging

- Packaging Legislation
 - EPR – Extended Producer Responsibility – CA, CO, ME, OR
 - Recycled Content Mandates - NJ
- EPR will involve ALL packaging types

Impact to ACRC member companies – increased cost and regulatory compliance burden!



Current Situation

Vision & Targets – 2020 – 2024 Strategic Plan

- ✓ **Volume & Service** - Achieve measurably more credible collection performance (%) nationwide with satisfied end users.
- ✓ **Promotion** - Clearer nationwide recognition and understanding of who the ACRC is and the service it provides.
- ✓ **Regional growth** - Develop better regional penetration via contractor network.
- ✓ **New end use market growth** - Develop measurable sales growth in a more diverse set of HDPE end use markets.