

CIRKIL® RAG IN A BAG® GIVES THE IDEA OF THROWING IN THE TOWEL AGAINST BED BUGS A WHOLE NEW MEANING.

HOW TO USE CIRKIL® RAG IN A BAG® (Not for use in NY)

1. Put bed bug infested items in a large plastic garbage bag. Do not fill more than 2/3rds full.
2. Apply 1oz CIRKIL RTU on a facecloth or rag.
3. Put 2-4 treated rags in a bag. Prevent the items from directly contacting the treated rags by placing a sufficient barrier, such as a plastic sheet between the rag and the items.
4. Close and seal the bag until it is airtight. Leave the bag sealed for 7 days.

To view and print the Technical Bulletin (2ee recommendation) please visit: <http://cirkil.com/rag>



TREATMENT RECOMMENDATIONS

VOLUME OF CIRKIL® (FL OZ)	BAG CONTENTS	LENGTH OF SEALED TIME	MORTALITY
4	Books	7 Days	100%
2	Electronics, DVDs, CDs, hard plastics/metals	7 Days	100%
4	Clothing	7 Days	100%
2	Footwear and Handbags	7 Days	100%
2	Mixed Items	7 Days	100%

CIRKIL PLANT-BASED BIO-PESTICIDES ARE EPA REGISTERED AND DESIGNED TO MEET THE HIGHEST STANDARDS FOR SAFETY AND EFFICACY.

- CONTACT AND RESIDUAL KILL OF BED BUGS & BED BUG EGGS
- RESIDUAL KILL OF BED BUG EGGS FOR UP TO 3 WEEKS
- EFFECTIVE AGAINST PYRETHROID-RESISTANT STRAINS
- BROAD AND FLEXIBLE INDOOR APPLICATION
- WORKS FAST
- BOTANICALLY-DERIVED ACTIVE INGREDIENT
- NON-TOXIC MODE OF ACTION
- EPA REGISTERED

If you are interested in learning more, or to order CIRKIL® RTU, please contact your local Target/Ehrlich or Univar representative. Rag in a Bag is currently not allowed in NY.

HOW THROWING IN THE TOWEL CAN HELP WIN THE BATTLE AGAINST BED BUGS

INTRODUCING



This new bed bug treatment protocol from Terramera, further tested by Dr. Dini Miller from Virginia Tech University, shows tremendous promise for dealing with hard-to-treat items such as infested books and electronics. CIRKIL® RAG IN A BAG® has been optimized to achieve total efficacy, killing 100% of bed bugs and bed bug eggs in possessions sealed in a plastic bag along with CIRKIL RTU sprayed on a rag. This innovative technique addresses a longstanding need of all pest management professionals – delivering an effective way to deal with hard to treat personal items which have the potential to re-infest treated locations, leading to costly & time-consuming repeat visits.



Typically, when we say that something is “in the bag” we mean there is nothing to worry about. This has not historically been the case when it comes to customer belongings from homes and apartments infested with bed bugs.

The current options to treat these possessions all have challenges. Discarded items are expensive to replace. Use of water-based emulsions can damage books or electronics. Treatment with dichlorvos organophosphate strips can expose your staff and customers to toxic vapors. On-site heat and off-site fumigation treatments are costly and complex. Simply leaving items untreated can lead to re-infestation.

“Overall, the Cirkil products and Proof performed very well in all laboratory evaluations. ... We thought these results were very impressive. Our laboratory has tested many bed bug products, and rarely have we seen a product that is effective at killing resistant strain (Richmond) eggs after it is dry.”

– Dr. Dini Miller, Entomologist, Virginia Tech University

Plastic bags filled with personal belongings are common to every treatment site. The vast majority of clothing can be washed, or even simply dried at high heat to effectively deal with bed bug infestations. The balance of items, such as hard cover and soft cover books, video game consoles, stereos, CDs and DVD players, etc. can’t be sprayed down with conventional chemical pesticides.

Terramera has discovered a unique characteristic of CIRKIL®: it is 100% effective against killing bed bugs and eggs without spraying them or infested materials directly. All you need to do is apply about one ounce of RTU to a cloth or rag, put the customer’s belongings into a non-porous bag (like a heavy-duty garbage bag), place a plastic sheet on top of the items, then place two to four CIRKIL-treated rags into the bag, tie up the bag and leave it to do the job.

“PMPs can avoid callbacks caused by re-infestation and residents can save the items they would otherwise have to get rid of.” – Shannon Lentz, Technical Support Manager, Terramera

“Even if a PMP uses a different pesticide for their broadcast treatment, CIRKIL® RAG IN A BAG® is a must-have complement to that treatment. It gives PMPs an important tool to complete their total bed bug protocol.”

– Shannon Lentz, Technical Support Manager, Terramera

This has led to the development of the CIRKIL® RAG IN A BAG® protocol (a 2e recommendation), something that Shannon Lentz, Senior Analytical Chemist and Technical Support Manager at Terramera Inc. describes as “A dead simple solution to a common concern for all PMPs.”

“Just spray one ounce of CIRKIL® RTU onto a rag (or paper towels), place t to four rags inside a plastic bag along with items that need ‘de-bugging’. Seal the bag and leave it closed for 7 days, and any bed bugs or eggs that are in these items will be killed.”

The benefits are significant. First, it not only works, but it works very well. Secondly, it is fast and very easy. PMPs can do it or they can leave their clients to do it by selling them CIRKIL RTU leave behinds. Finally, it’s a botanical product with a non-toxic mode of action, which means lower risk to PMPs and customers. It’s a product PMPs and customers can feel good about using.

The protocol is highly effective. It addresses another major concern of pest management professionals: potential re-infestation from infested items that have been bagged, left untreated, and reintroduced into the home environment. It is a grey zone that requires many pest management companies to foot the bill for costly re-treatment – an operating cost typically associated with bed bug treatment.

“CIRKIL penetrates into cracks & crevices. It kills not only bed bug adults, but eggs as well.”

– Nate Woodbury, Senior Entomologist, Terramera

CIRKIL® RAG IN A BAG® can be used as a complementary treatment in conjunction with any other broadcast treatment – including heat treatment.

According to Lentz, the key is putting effective treatment choices in the hands of the PMP. “They’re the ones in the field who know what works and what doesn’t. I think they’re going to love this product just because it addresses a concern that they all have. And it works.”

This new protocol addresses a gap in the current Integrated Pest Management protocol and significantly reduces the likelihood of re-infestation and costly re-treatment.

The Study was designed to assess efficacy without direct contact with CIRKIL® RTU spray. Substrates, e.g. paper towels or cloth rags treated with CIRKIL® RTU spray were placed inside sealed plastic bags. The bed bugs and eggs were never sprayed directly or exposed to the treated substrate. From this an optimized protocol was produced: 100% bug and egg mortality was observed for all conditions after five days.

Previous laboratory studies conducted at Terramera PlantScience have demonstrated bed bugs exposed to CIRKIL RTU and CIRKIL CX without direct contact exhibiting 100% mortality in 1-5 days. The goal of testing an impregnated substrate was to create a solid protocol for treating delicate items (such as electronics, books, etc.) that cannot be directly sprayed with an insecticide, even a plant-based product such as CIRKIL RTU.

INFESTED COMPUTER: Bed bugs were placed in a housing consisting of nylon stocking stretched taut over the ring of a Mason jar lid or a piece of cardboard of a similar size (Figure 1 and 2). A similar housing containing filter paper mounted with eggs was placed within a Mason jar lid ring inside a stretched nylon stocking. The computer housing was removed and the bed bug and egg samples were placed within the computer.

INFESTED BOOK: An entire book was encased in a nylon stocking along with 10 bed bugs (Figure 4). The infested book was then placed inside a 31” x 42” clear plastic bag along with 35 other books of random shapes and sizes. Eggs were mounted on filter paper and placed on the outside of a book, within a stretched nylon stocking (Figure 3).



Figure 1. Bed Bugs Placed on cardboard inside of stretched nylon stocking.



Figure 2. Bed bugs placed inside Mason Jar lid ring, inside stretched nylon stocking.



Figure 3. Eggs on filter paper infested onto book.



Figure 4. Book inside of stretched nylon stocking, infested with bed bugs.



Figure 5.

PROTOCOL: Cotton facecloths¹ were treated with CIRKIL® RTU spray. Approximately 1 ounce of CIRKIL was applied to each rag. This translated to about 40 pumps of the current CIRKIL RTU bottle. One to three rags were placed inside the sealed plastic bags for up to 5 days.²

Each bag of electronics contained one desktop computer, one keyboard and one desktop telephone. (Figure 5) Each bag of books contained the infested book as well as 34 randomly selected books (both hard and soft cover).

35 books (34 un-infested and 1 infested with 10 bugs and 5 live eggs) were placed inside a sealed bag for five days. This served as the untreated control group.

RESULTS: After 5 days the bags were opened and the bugs and eggs were transferred to petri dishes lined with filter paper for observation. All variations of the CIRKIL® RAG IN A BAG® protocol exhibited 100% mortality for both eggs and bed bugs over the course of five days. Materials were also inspected for residual odor of the product with very minimal odor noted on the books or electronics one day after opening the bag.

DISCUSSION: By treating rags or paper towels with CIRKIL® RTU and placing them into a sealed plastic bag with infested books and electronics, we have demonstrated 100% efficacy at killing bed bugs and eggs. This was accomplished strictly through proximity to CIRKIL® RTU and no direct or residual product coming into contact with the bugs, eggs, or infested materials.

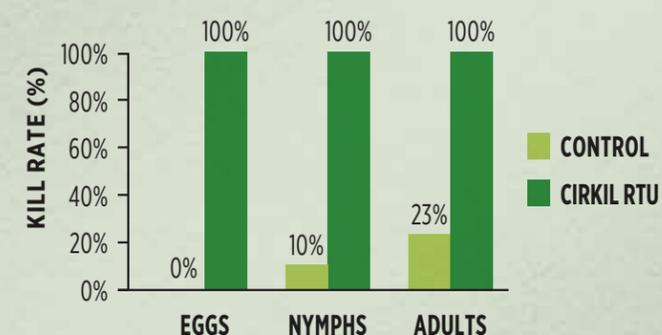
Please Note: To account for variations in tolerance levels in field strains, we recommend bags be left unopened for at least two days longer than the minimum time required for efficacy. Also, in order to avoid damage of delicate materials such as books or electronic wiring from contact with a wet rag, it is recommended the treated substrate (rag or paper towels) be placed on top of a plastic bag or similar material to provide a barrier between the damp product and any delicate items.

¹ 4 sheets of heavy-duty paper towel can be used instead of a rag

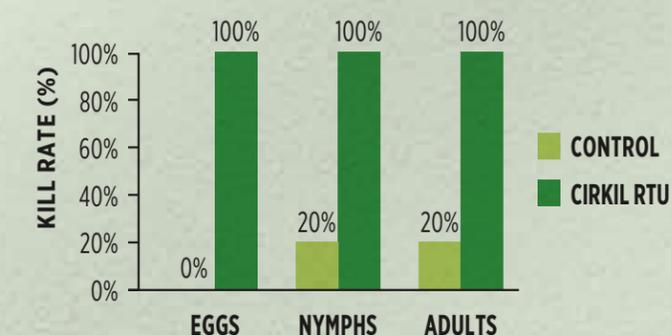
² To account for variations in tolerance levels in field strains, we recommend bags be left unopened for at least two days longer than the minimum time required for efficacy.

Summary of Dr. Miller’s Studies: These independent studies were conducted at The Dodson Urban Pest Management Laboratory at Virginia Tech University with highly pyrethroid resistant Richmond strain bed bug adults, nymphs and eggs.

RAG IN A BAG STUDY: ELECTRONICS



RAG IN A BAG STUDY: MIXED SHOES AND PURSES



The findings were presented in a PCT magazine webinar, which you can view at: www.pctonline.com/Vapor-Effects-Bed-Bugs-webinar.aspx