

*Reprinted with permission from: 1996 Leafy Spurge Symposium. Brandon, Manitoba, Canada. Aug. 13-15, 1996. pp. 17-18.*

*Sponsored by: Manitoba Weed Supervisors Association and Manitoba Agriculture.*

---

## **A simple technique for separating *Aphthona* flea beetles from debris**

DAVE HIRSCH (PRESENTER), JIM JESKE, TERRY REULE and DOUG ANDERSON

USDA, APHIS, PPQ in North Dakota utilizes the volumetric method for counting *Aphthona* flea beetles as developed by the APHIS Bozeman Biocontrol lab. We have found it to be an efficient and practical in-the-field technique for counting large numbers of flea beetles. The purpose of our efforts is to provide flea beetles from insectaries to county weed boards or other land managers. Field crews collecting flea beetles from insectaries often get more plant debris and other insects than flea beetles. The debris makes it difficult, if not impossible, to use the volumetric counting technique.

The process of counting the beetles for redistribution is faster and easier by using this sorting technique devised this season. The sorting and counting is done in conjunction with an assembly line system of packaging beetles. We have utilized this technique at an excellent site to package approximately 2 million beetles, one thousand beetles per package, in one day. Weed board officials that are distributing beetles to land managers may find the technique useful.

The sorting system uses plastic pipe, 4 inches in diameter and 6 inches long, that is perforated using a 3/16th inch drill bit. To save weight, we use pipe rated only for vent and drain. It is thinner walled than pipe rated for water lines. Plastic end caps for this pipe are used and also perforated. One cap was glued onto the perforated pipe. We use white pipe to reflect heat, however, the inside of the pipe is sprayed with black paint so that the only light entering the pipe was through the holes.

The premise of this tool takes advantage of the flea beetles extreme attraction to light. The tubes are filled approximately 1/2 full of the beetles and debris. Six of the containers are placed in an 18 by 24-inch white nylon bag with a drawstring. The bag is placed in direct sun and within several minutes, the beetles have escaped the perforated containers and are trapped in the bag. The plastic containers then contain only plant debris, grasshoppers and other insects. The volumetric counting method can then be used with greater ease and accuracy. Nylon or muslin bags are recommended over mesh bags because the beetles can cling better to mesh.

We have experimented somewhat with the size and number of holes in the containers. Generally, we have found that you cannot have too many holes but if the holes are too large, other insects and small debris begin to come out with the beetles.