CASE SUMMARY

Case #2011/1096

Complainant: Esther Kiester
8935 W. CR700N
Middletown, IN 47356

Applicator: Bob Miller
Pro Green, Inc.
P.O. Box 143
New Castle, IN 47362
800-544-5296

Certified Applicator
Licensed Business

1. On June 21, 2011, I, Agent Andy Roth of the Office of Indiana State Chemist (OISC), performed an investigation at the property listed above in response to a claim of injury/damage to non-target trees possibly resulting from exposure to Imprelis Herbicide. I observed distorted tips, brown needles and tip dieback on new growth of mature white pines. A Norway spruce had extensive browning and tip distortion. A blue spruce had twisted, discolored needles on new growth.

2. I photographed the site documenting the symptoms I observed:


Figure 1


Figure 2


Figure 3


Figure 4

3. I collected plant samples from Norway spruce, blue spruce and white pines exhibiting symptoms and turned them in to the Plant & Pest Diagnostic Lab (PPDL) at Purdue for assessment.

4. I also collected plant samples from Norway spruce and white pine and a composite soil sample from the treated turf area for chemical analysis by the OISC Residue Lab.

NOTE: A decision was made by OISC management to not analyze the environmental samples in this case. That decision was based on: 1) the large number of similar environmental samples already analyzed that had produced representative results consistent with the presence of visible exposure symptoms; 2) the expertise developed by OISC investigators through repetition to identify Imprelis exposure symptoms without chemical confirmation; and 3) the large number of similar cases being investigated by OISC at the same time.

5. The report from the PPDL for the samples submitted indicates, *"The Spruce and Pine samples (and pictures) submitted show symptoms that are associated with injury caused by synthetic auxin (growth regulator type) herbicides. Typical symptoms caused by these herbicides can include epinasty (twisting and curving) of the leaves or needles, shoot and shoot tip; leaf cupping which can be upward or downward, and in extreme cases, new leaves can be irregular in size and shape (usually smaller than normal) and have abnormal leaf margins. The Norway spruce and white pine samples submitted showed no evidence of disease.* ***Disease Report for Blue Spruce only:*** *Spruce spider mites, Rhizosphaera needlecast and Stigmina, another fungus, were confirmed on the needles of your spruce sample. Rhizosphaera needle cast is a very common fungal disease that affects primarily Colorado blue spruce, and occasionally Black Hills spruce. This disease causes 2 and 3 year old needles to turn purplish-brown and fall off, working from the inside of the tree out and from the bottom of the tree up. Stigmina is often found alone or in combination with Rhizosphaera on needles of trees showing purple discoloration and loss of older needles (in the bottom up and inside out pattern). We don't yet know enough about Stigmina lautii to say if it really is a pathogen or whether it's secondary following damage from Rhizosphaera and stress. Research into Stigmina's possible role as a pathogen is ongoing. Fungicide treatments to help prevent Rhizosphaera needle cast (one application of a contact fungicide such as chlorothalonil in mid-May, and another treatment four to six weeks later) are recommended for high value trees that are not heavily damaged and are not too large to treat. Treatments must be consistently applied at the right time for 3 years in a row to prevent new infections and allow new growth to cover areas where needles are lost. If the tree has extensive needle lost over more than half the tree it is probably too late to save it. Fungicide applications at other times of the year are not likely to help. You can minimize stress to trees by choosing an appropriate tree for the site, buying high-quality planting stock, planting it properly with proper spacing, giving it a three-inch-deep layer of mulch over the root zone, and watering it during especially dry periods. Norway spruce is much less susceptible to this and other disease problems than blue spruce and may be considered as a replacement if infected trees are lost. Spruce spider mite feeding damage, eggs and actively feeding mites were detected on the needles of the branch sample submitted. This suggests that when the weather is dry, mite populations could continue to build to levels that could cause more damage. Since many factors, including temperature, rainfall, and the abundance of mite predators can affect how the population will grow, it is difficult to use current numbers of mites and eggs to predict future damage. For this reason I would recommend inspecting the plant via tapping the branches onto white paper every two weeks from April through*

June to monitor the situation. When you tap a branch over an 8.5 x 11 inch paper and two dozen or more mites fall on the paper, I would recommend applying one of the miticides with a low toxicity to natural enemies (such as floramite) that are listed in our bulletin found at:

http://extension.entm.purdue.edu/publications/E-42.pdf"

6. According to application information collected from Pro Green, Bob Miller applied Imprelis Herbicide (EPA Reg. No. 352-793) on May 3, 2011, at the rate of 0.08oz/1,000 square feet using ride-on, ground application equipment.

Andrew R. Roth

Andrew R. Roth
Pesticide Investigator

Date: October 27, 2011

Disposition: No violation of the Indiana Pesticide Use and Application Law was documented against the pesticide applicator. Effective September 15, 2011, the Indiana registration for Imprelis Herbicide, EPA Reg. #352-793, was cancelled because it was determined by OISC that the product is "misbranded" (it bears label directions that are inadequate to prevent unreasonable adverse effects to non-target vegetation).

George N. Saxton
Compliance Officer

Final Date: November 21, 2011