

Ask the Expert: Questions regarding pre-emergence herbicides and their effects on bermudagrass

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Question 1. *Following application of several of the commonly-used preemergence herbicides, I have noticed that the roots appear to be shortened and swollen. Why does this occur?*

Answer: Many of the preemergence herbicides on the market today are inhibitors of mitosis. This is an important process in cell division which is required for plant growth. When this process is disrupted, the results are visibly evident by exactly what you see with the roots. Additionally, you may notice a lack of secondary or lateral root formation. Some of the active ingredients that you may have used which cause this effect include benefin, dithiopyr, oryzalin, pendimethalin, prodiamine, and trifluralin.

Question 2. *How long will we continue to see the effects from these herbicides on the root growth?*

Answer. There are many factors involved which may affect the herbicide's activity including rate, soil moisture, temperature, soil texture and others. In our experiments, there were still significant numbers of abnormal-appearing common bermudagrass roots by 2 months following herbicide application. Our last sample date was 6 months after treatment and abnormal-appearing common bermudagrass roots were virtually non-existent by that time.

Question 3. *Since some turfgrasses initiate new growth from rhizomes, would these herbicides be likely to move throughout the soil profile where roots would initiate growth off of the rhizomes?*

Answer. Some of the factors which would affect the mobility of any given herbicide include soil moisture, soil texture, and water solubility of the herbicide. Our experiments suggest there is a potential for herbicide movement into rhizome-containing areas of the soil profile, particularly with high rainfall and coarse soil textures.

Question 4. *How well does common bermudagrass compensate for growth following application of preemergence herbicides?*

Answer. Research has shown bermudagrass to recover quite nicely after preemergence herbicide treatment. For example, in some of our work, pendimethalin, in some cases, decreased the total number of new roots initiated. On the other hand, the actual biomass or root weight taken from the same plot was not any less than plots which did not receive a herbicide application. This shows that bermudagrass is capable of producing an adequate root biomass from fewer numbers of total roots.

Question 5. *Are there above-ground symptoms from these herbicides such as delayed greenup of warm season turfgrasses in the early spring?*

Answer. There can be a very slight delay of spring greenup where standard use rates of preemergence herbicides are used on warm season turfgrasses.