

Dog Urine Damage on Lawns: Causes, Cures and Prevention

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Dog urine damage is a common problem for home lawns everywhere, and one that has generated numerous home remedies and commercial products claiming to be THE cure for the dreaded brown and green spots. One could argue that no other lawn problem is more misunderstood than this one when it comes to causes and cures. Quite simply, dog spotting in lawns is caused by the deposition of a high concentration of nitrogen (N)-containing compounds and associated salts on a small area in the lawn. This deposition is often concentrated in a relatively small portion of the lawn, resulting in turf injury or death. Some of the more commonly repeated “urban legends” regarding dog urine damage include:

- **Only females cause dog spots in lawns.**
FALSE. Dog spots in lawns are most often caused by dogs that squat when they urinate, thus depositing a large volume of concentrated urine in a small area. Most “squatters” are female dogs, but some males do this as well. Male dogs tend to “mark” vertical objects in the landscape (trees, posts, etc.), which can present a problem over time to vertically growing landscape plants.
- **Dog spots are more common with certain breeds of dogs.**
MOSTLY FALSE. Dog spotting is more likely to occur (or may be more obvious) with larger dogs, since they produce larger amounts of urine. More important, however, than volume of urine is the concentration of urine produced by the individual animal. Dog spots can just as easily occur with smaller breeds, especially if the individual dog tends to urinate in a limited area of the lawn.
- **Dog spots occur because urine is alkaline (has a high pH).**
FALSE. Dog spots occur because a high concentration of N and salts has been deposited in a very small area of the lawn. In some cases, this concentrated N causes dark green spots and rapidly growing grass, but does not otherwise injure the grass. In many cases, however, the result is a dead-looking brown spot – often surrounded by a halo of dark green grass. In this case the concentrated nitrogen deposited in the center of the spot has burned the grass (the grass may or may not be dead), but the lower concentration of salts on the periphery has fertilized the grass.
- **Dog spots can be prevented by using food supplements that acidify a dog’s urine.**
FALSE. Dog spots do not occur because a dog’s urine is alkaline. Products advertised to “naturally” reduce urine alkalinity (including the amino acid, dl methionine, also known as methioform) may cause urinary system problems and can affect calcium deposition in growing bones of younger dogs. The addition of baking soda, potassium citrate and other salts as cures for dog spotting are likewise not recommended. A veterinarian should always be contacted before giving your dog a food supplement known to affect urine pH. There are medically sound reasons for altering urine pH, but the prevention of dog spots in lawns is not one of them. *There are no dietary supplements that have been scientifically proven to reduce either the incidence or severity of dog spotting in lawns.*
- **Dog spots can be “cured” by sprinkling the affected area with baking soda, gypsum, dishwashing detergent, etc. to neutralize the urine.**
FALSE. The only “product” that can neutralize the urine’s negative effects is water. Gypsum and baking soda (sodium bicarbonate) are salts themselves and may actually compound the problem. Dishwashing detergents, acting as wetting agents or surfactants, may enhance water movement into and through the soil. While this theoretically could promote leaching and dilution of accumulated salts in the soil, some dishwashing detergents can themselves burn grass plants.

Dealing with the Dog Spot Problem

What can be done with the dog(s)?

1. Train the dog to use an out-of-the-way area of the lawn where turf is not growing (an area mulched with gravel or mulch, for example) or where dog spotting will not become an aesthetic problem and damage can be tolerated. *This is the ONLY sure solution for the problem!*
2. Always provide adequate water for your pet; increased water consumption will dilute urine, reducing the potential for turf injury.
3. While the addition of salt, garlic, tomato juice and other “home remedies” to your pet’s food can increase water consumption (thus diluting their urine), your veterinarian should always be consulted before doing so. The increased salt intake can cause problems for older dogs, as well as for those with heart or kidney conditions.
4. Except for the addition of water to a dog’s food, no additive or supplement should be fed to your pet without first consulting with your veterinarian. Certain additives may increase a dog’s water intake, but can have detrimental and unintended consequences for its health.

If the affected spots are green and grass growth is stimulated (no browning is apparent):

1. Increase nitrogen fertilization frequency and/or amount to help mask the urine-induced stimulation of growth and color; these darker green spots will be especially visible on lawns that are not receiving adequate nitrogen fertilization.
2. Maintain adequate irrigation to prevent accumulation of salts in the soil; drought or lack of water can allow salts to accumulate and injure or kill turf.

If the affected spots are brown (the turf may or may not be dead):

1. Increase irrigation amount and/or frequency to help dilute salts that have accumulated in the soil. This may help still-living turf recover, and will dilute salts in those areas where the turf has been killed (allowing for more effective re-seeding).
2. When turf has been killed, the dead sod and some soil (1/2-1 inch of soil) can be removed and the area can be sodded with new grass.
3. Individual dead/damaged spots can be re-seeded as follows:
 - In a **Kentucky bluegrass lawn**, spot seed with Kentucky bluegrass (will be marginally effective) or perennial ryegrass (can be highly effective). Tall fescue, K31 tall fescue, “dwarf” fescue or annual (Italian) ryegrass should NOT be used for spot-seeding a bluegrass lawn.
 - In a **tall fescue lawn**, spot seed with turf-type tall fescue (sometimes called “dwarf” fescue). Perennial ryegrass can also be used, but it has a finer texture and the newly seeded spots will look different from the rest of the lawn. Do NOT use K31 fescue or annual (Italian) ryegrass for spot-seeding a tall fescue lawn.
 - **Fine fescue lawns** should be seeded with fine fescue seed. The use of perennial ryegrass or tall fescue is NOT recommended, as the spots will have a different color, texture and growth rate.
 - **Zoysiagrass and bermudagrass lawns** should be patched using sod from a sod farm, or by transplanting sod from an inconspicuous area of same the lawn.

Consult your veterinarian before supplementing a pet’s diet with any product or food additive claiming to reduce dog spots in lawns. Similarly, no “spray-on” product for lawns, claiming to prevent or “cure” dog spots, has been scientifically proven to be effective. Written 7/2009.