

COMMON GRACKLES ANTING WITH "WEED AND FEED" LAWN CHEMICALS

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Birds sometimes apply ants to their plumage in a frenzied preening-like manner, a behaviour called "anting." The same term is used when birds apply, in much the same way, other insects or substances of any nature. The list of such materials is long. Whitaker lists: "fruits, foliages, raw onion, burning matches or tobacco, ... hair tonic, prepared mustard, vinegar, hot chocolate, and moth balls" as well as other insects.¹⁰ Whitaker concluded that these substitute items were all "thermogenic," causing a warming or burning sensation, not unlike the formic acid given off by most ants when handled. The known list of thermogenic substances used by anting birds continues to grow, but the basis for this behaviour is not altogether clear.^{4,5,6,8} That birds can detect certain chemicals by taste as well as smell has been documented by several authors.^{1,2,3,4,7} Clark *et al.*, in reference to anting birds, note: "The classes of objects or organisms reported in the literature invariably have antimicrobial or insecticidal properties.... We suggest that future studies focusing on anting consider the behavioral capabilities of birds to perceive chemical cues of high biological relevance."²

Whatever the relationship, although lawn chemicals, that is, a mixture of fertilizer and herbicide, are widely used on lawns, there seems to have been no report of birds anting with such material. About 11:00 a.m., 2 July 1995, a bright,

warm day, I applied, for the first time, a commercial fertilizer and herbicide mixture to our lawn. This compound consisted of white, tan and yellowish granules. The trade name was "Canada Way Lawn Weed and Feed" (Vigoro Canada Inc.) 21-7-7 and the contents were described as: total Nitrogen 21.0% with 5.25% derived from sulphur-coated urea; available phosphoric acid (P_2O_5) 7.0%; soluble potash (K_2O) 7.0%; 2,4-D (present as amine salts) 0.56%; and Mecoprop (d-isomer) (present as amine salts) (actual) 0.28%.

Later that day (4:40 p.m.), I noticed three adult Common Grackles anting on the lawn in the shade of a tree at the back of our yard. I assumed that this activity was being elicited by ants, and watched with binoculars while the birds anted vigorously for 15 minutes. After the birds left, I examined the site, finding not ants, but instead numerous chemical granules. Apparently the birds had been anting with this material. In turning around the mechanical spreader I had used, an excess amount of chemical had fallen on this spot. As if to prove the point, at 6:20 p.m., two males began anting at a second spillage spot close to our house. This time, I was able to see them pick up the tiny pellets. Once, I saw a pellet drop to the ground after it had been placed under a wing. Twice, pellets were carefully manipulated with the bill before being applied to the plumage. Both birds anted rapidly, applying pellets under



Common Grackle

Ted Muir

the tail, on the shoulder and back, and especially under the wings. One bird did this six times in two minutes. It appeared that extended manipulation of pellets led to vigorous scratching, especially of the bill and chin. Birds kept coming and going; after anting with the chemical, one walked into a nearby flowerbed and onto a known anthill where it actively anted, apparently using ants.

At 7:00 p.m. several grackles gathered in the original spot at the back of the yard. Once again, a frenzy of anting ensued, involving, at one time, nine males. Despite frequent signs of mutual antagonism, at one point eight birds were performing in an area of about 1 m diameter. Birds seemed to be attracted to the sight of one that was anting; one would hurry over to join the other, be repelled, then return, threaten the first, etc. At times the group would break up, then rejoin. The next day was overcast and humid. By now the pellets were

much reduced in size, but still one to five grackles anted on the same sites from 1:00 p.m.-4:30 p.m. Individuals picked up and applied pellets up to 22 times per minute. It was clear that they remembered the two sites on the lawn; single birds returned to our yard and flew or walked directly to the good areas and began anting. For the next several days, though grackles were present, none was observed anting. On 8 July, for example, a dozen grackles, including young which were often begging and being fed, were at our feeders, but no anting occurred. Chemical pellets, though now very small, were still visible.

A week later, wanting to see if anting could deliberately be elicited, I placed some fresh lawn chemical pellets (hereafter: lure) on a small piece of weathered plywood on the lawn near and below a bird feeder. It was hot and humid, but only one grackle came to the feeder and it soon left. The next day, two of six

grackles at the feeder, or below on the ground where some birdseed falls, actually walked on the lure without reacting. On 13 July, one adult male and three juveniles walked right across the lure, again with no reaction. This was puzzling. In mid-afternoon I put some birdseed on the board beside the lure, then watched with dismay when a juvenile grackle stood and ate birdseed beside the lure. At 5:00 p.m., I added birdseed to the other side of the lure, and eventually it worked. At 6:45 p.m., an adult male anted several times, picking up pellets and placing them or rubbing them on its plumage. It stopped when a second male threatened it, returned and anted again on the board, then left when threatened a second time. It seemed that the anting bird elicited aggressive behaviour from the second one, as if the posture of anting, lifting its wings, etc., provoked aggression. (Often the grackles at the feeder or on the lawn threatened each other, drawing themselves up with spread plumage, bills upward, etc., in typical agonistic display. Yet they kept together as a group.) During this period of observation, an adult female twice walked over the lure to get at the birdseed. It was clear that the birds had no difficulty distinguishing the birdseed from the adjacent lure material. At 7:00 p.m., another (?) adult male stepped on the board and vigorously anted with the lure.

The next day (14 July), another hot, bright day, despite as many as 12 grackles at the feeder, and near or on the board, anting was not observed. Birds walked on the lure, at times picking up birdseed right beside the chemical pellets. At midday, I added fresh chemical, thinking that this might heighten the effect, but nothing happened. Again, some birds walked on the fresh lure to feed

on the seeds. I concluded that the chemical doesn't always attract them or compel them to ant. Nor were other birds affected; Blue Jays, House Sparrows and Mourning Doves at times came close to the lure, but showed no response.

On 15 July, a warm, cloudy day, at 11:00 a.m. nine grackles were present, including an adult male that was anting vigorously on the board. It was stroking its wings above and below, its back, tail and even its legs. It kept other males away from the board for about five minutes, then it stopped and ate some birdseed. At 1:45 p.m., I added fresh chemical lure to the board. Within the next hour, 12 grackles, two doves, a Gray Squirrel and two Eastern Chipmunks fed nearby. Again, one grackle stood on the lure while feeding. The day was hot (30°C) and bright, and two grackles were sunbathing. At 3:05 p.m., one fed on the board, then a second one walked on the lure to feed — it anted once, then went to the nearby birdbath to drink. Shortly, this bird returned and walked on the lure to feed on the adjacent birdseed. At 6:20 p.m., with 10 grackles present, including several juveniles, an adult fed beside the board while a juvenile fed on the opposite side. Finally, a Blue Jay stood right on the lure while it ate some birdseed.

I made one more attempt to elicit anting with the lure. On 16 July, at 7:30 p.m., several grackles vied with each other for a spot on the lure board in order to ant! Up to three adult males were anting vigorously at one time at close quarters. The group of four adult males and two juveniles dispersed when a Red Squirrel dashed towards them.

The fact that the grackles didn't always react to the lure chemical

suggests that the anting compulsion partly depends upon a bird's inner state. Several authors have pointed to season, weather, ectoparasite load, sensual pleasure, moult condition, etc., as factors influencing anting.^{2,4,5,9,10} The grackles I observed were actively moulting, a number of shed feathers being found in our yard.

Clearly, some portion of the "Weed and Feed" material stimulates anting behaviour in the Common Grackle. The nature of that substance, and the particular conditions under which it has a positive effect on birds, remain unanswered. "Weed and Feed" material offers another basis for possible experiments leading to a further understanding of this aspect of bird behaviour.

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One fifth of the species of birds worldwide have been eliminated in the past two millenia, principally following human occupation of islands. Thus instead of 9,040 species alive today, there probably would have been about 11,000 species if left alone. According to a recent study by the International Council for Bird Preservation, 11 percent or 1,029 of the surviving species are endangered. *E.O. Wilson, 1992. The diversity of life. W.W. Norton and Company, New York. 424 pp.*