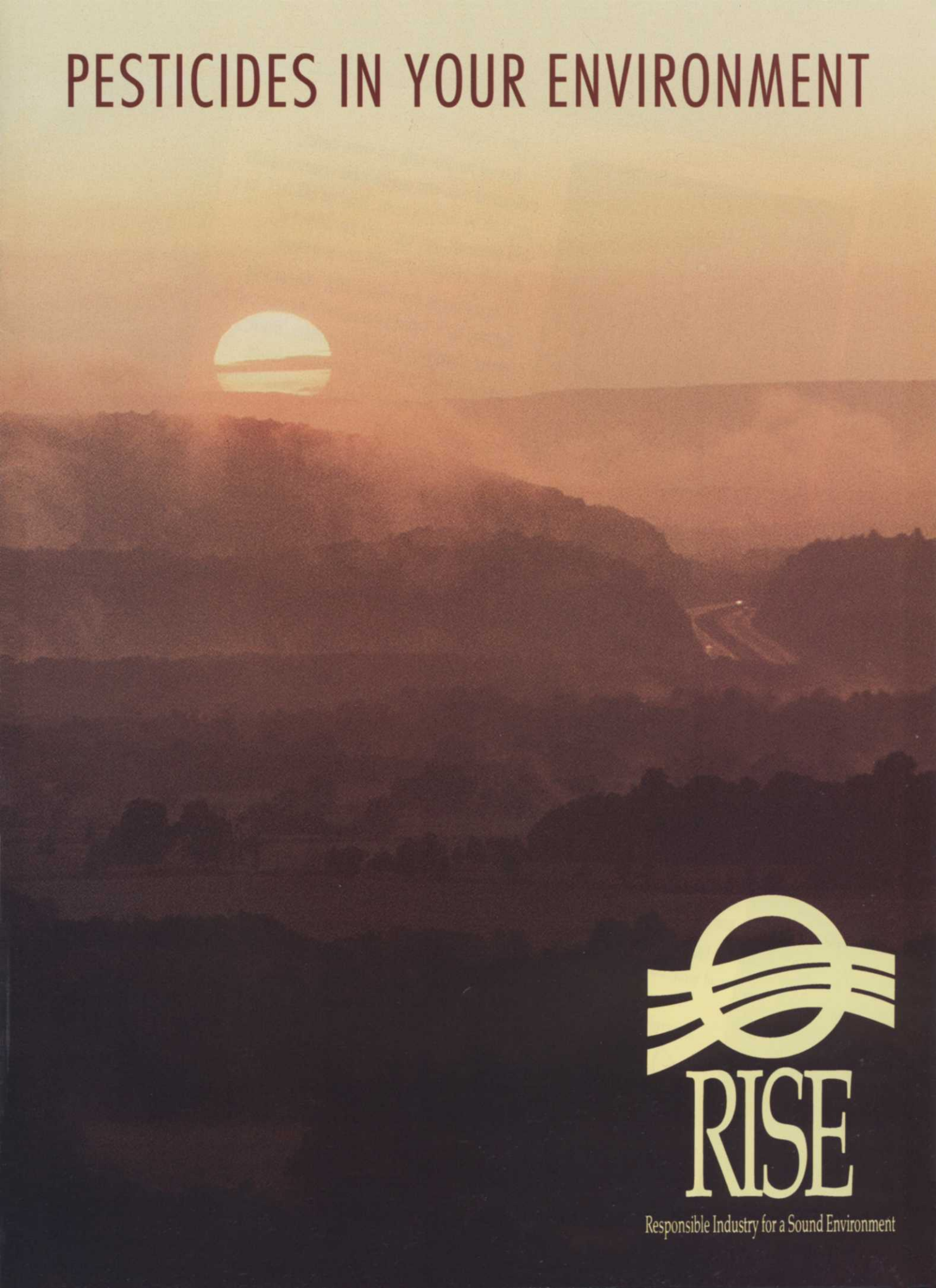


PESTICIDES IN YOUR ENVIRONMENT



Responsible Industry for a Sound Environment



Dear Friends:

You are familiar with the scare tactics, Hollywood hype and questionable research results put forth by our opponents. Now we ask that, for a few moments, you approach the subject of specialty pesticide use with an open mind.

In the pages that follow, RISE (Responsible Industry for a Sound Environment) wants to set the record straight on specialty pesticides, those products used to protect and enhance lawns, gardens, trees, homes and other non-agricultural areas, like roadsides.

This project represents an industry first — editors of usually competitive publications worked in cooperation to present the facts. Their mission is straightforward: Define the benefits of specialty pesticides and put the risks in proper perspective.

Homeowners and professional applicators can use specialty pesticides with confidence. The specialty pesticide industry tests and re-tests all products to ensure they pose no unreasonable effects for humans, animals or the environment when used properly.

As a result of the strict testing standards imposed by manufacturers, the Environmental Protection Agency and various state regulatory agencies, only one in approximately 20,000 products makes it from the chemist's laboratory to the marketplace.

But even these impressive numbers don't let us rest on our laurels. Our industry continually works to discover and develop new products to protect human health, improve the environment and, in general, better our quality of life.

The specialty pesticide industry is dedicated to bringing you the safest and most effective products possible. Our goal is simple: Control undesirable pests and diseases in your neighborhood and our nation.

We want you to take heart in knowing the world is a safer, healthier, prettier place in which to live and work — thanks to specialty pesticides.

Sincerely,

Allen James
Executive Director

THE OTHER SIDE OF THE STORY

SPECIALTY PESTICIDES: SOCIETY'S UNSUNG HEROES

You've read it in the newspapers. You've heard it on TV. The decade of the 1990s is the decade Americans are embracing traditional values. Tired of the race to overachieve, Americans are rediscovering the pleasures their immediate environments provide.

Many Americans don't give a second thought to a kitchen cupboard free from cockroaches, a front lawn minus weeds, a nearby pond teeming with fish. Such benefits — all part of a clean, healthy living environment — are taken for granted. They're as American as mom and apple pie.

Without the use of specialty pesticides, however, the story would be radically different. Disease-infested trees? Shade is scarce. Vegetation-choked waterways? Fish don't flourish. Roach-infested kitchens? Forget the food.

Specialty pesticides rid homes and workplaces of annoying and damaging insects, noxious weeds and plant diseases. They work selectively, like antibiotics work to rid the human body of only the undesirable bacteria and germs.

Properly used, specialty pesticides play a big role in helping this nation maintain one of the highest standards of living in the world. However, the road isn't always smooth. Specialty pesticides are under fire from several sectors, both public and private, but their value to society is proven.

While risks must be considered, the benefits of specialty pesticides can't be denied. Any medicine used properly and according to label instructions can do much good. Used improperly or abused, it becomes a poison. The dose makes the poison. The tests that specialty pesticides undergo

during the registration process are similar to those for pharmaceuticals. But, in most cases, specialty pesticides must undergo even more tests to prove they can interact with the environment, as well as humans, without undue risk.



Specialty pesticides help deliver a pest-free living environment for Americans.

Former U.S. Surgeon General C. Everett Koop encourages the public to recognize the difference between real risk and hypothetical risk: "The risk, for example, of being killed by an automobile (1 in 6,000) is much greater than any hypothetical risk of a pesticide. Yet that doesn't keep us off the road, either as passengers or as pedestrians.

"By focusing on a hypothetical risk, like that from pesticides, not only do people find their anxiety levels elevated, but by focusing on a straw man, they also feel that they are doing something to improve their health. In so doing, they often neglect all the other things that they could be doing more readily, more legitimately, and with greater effect, such as paying attention to smoking, alcohol, exercise, balanced diet and so on."

The lesson is simple: Everything has risks, but risks must be weighed against benefits. Americans use potentially toxic products — from cleansers to gasoline — every day. Used properly, they serve their purpose and improve our quality of life. Specialty pesticides do, too.

Thanks for a job well done to the editors and publishers of *Arbor Age*, *Grounds Maintenance*, *Landscape & Irrigation*, *Landscape Management*, *Lawn & Landscape Maintenance*, *Pest Control*, *Pest Control Technology*, *SportsTURF* and *Tree Care Industry*. Thanks also to the National Roadside Vegetation Management Association and others who contributed information and graphics.

SPARING THE PLANET OF PESTS AND DISEASE

There was a time when pest-borne diseases — malaria, yellow fever and typhus — were feared by every American.

There was a time when nearly one-fourth of Europe's population was wiped out by bubonic plague. There was a time when the constant biting of bed bugs prevented a good night's sleep.

Before widespread mosquito control, as recently as 1935, 4,000 Americans a year died of malaria. Further back, during the summer of 1878, a yellow fever epidemic affected 132 U.S. cities and 75,000 Americans. Of those, 16,000 people died of the mosquito-carried disease.



Close inspection inside a structure leads the pest control operator to actual and potential problems. Early identification of a termite infestation can save the homeowner money and headaches. It's estimated termites and carpenter ants cause \$2.5 billion in structural damage annually worldwide.



And it was in 1845 that the Honorable John Randolph addressed Congress and declared that Florida would never be developed nor would it ever be a fit place to live. He described Florida, one of today's most popular tourist destinations, as "a land of swamps or quagmires of frogs and alligators and mosquitoes."

Today, we live in a country where plagues and epidemics are a vague memory. "Americans no longer worry about getting malaria, yellow fever or dengue fever," says Norman Cooper of the National Pest Control Association. Once common and greatly feared problems in America, these diseases were transmitted to humans by insects and rodents.

D I D Y O U K N O W ?

Few Americans worry about health threats posed by insects. That's because pest populations are held in check by pest-management programs, which include responsible use of specialty pesticides. A pest-free living environment:

- Wards off disease. Pests, such as mosquitoes, no longer pose the disease threats of the past, when whole cities and nations were wracked by outbreaks of malaria, yellow fever and typhus.
- Allows the public to enjoy outdoor recreation. Some of today's popular tourist destinations, such as Florida and other tropical locales, once were seen as unfit places for humans to live or visit. Pest control cleared the way for development and commercialization of recreational facilities.
- Protects the food supply. Without pest control, rodents and insects would dine on much of the food meant for human consumption.
- Enhances property values. Homes and offices, free from wood-infesting and other pests, enjoy a longer life span and maintain more of their original value.

"Fortunately, we no longer must fear pest-borne diseases — not only because of great advances in modern medicine but because of modern pest control, too," Cooper says.

Even President George Bush recognizes the important role the pest control industry plays in protecting public health and property. In a letter recognizing National Pest Control Month, he wrote: "We Americans have come to expect pest-free homes, places of employment and food supplies. Yet we know that we could not enjoy living in a clean, healthy environment if it were not for the efforts of pest control professionals."

PAYOFFS FOR THE PUBLIC

The payoff for this commitment to pest control and public health programs is a dramatic increase in life expectancy. In 1940, the average American lived to age 63. Today, the average American lives to age 75.

Unfortunately, the media has been slow to spread a positive message to the public. "The overwhelming majority of the news we get from radio, television and print media about health and the environment is bad news...despite the fact that national health statistics indicate we have never been healthier," says Dr. Elizabeth Whelan of the American Council on Science and Health, a consumer education and advocacy group.



Pest control operators and technicians take time to review problem spots with homeowners and business operators.

The control and monitoring of public health pests through integrated pest management (IPM), including the use of specialty chemicals, is a key reason for America's improved health. Pest control professionals keep fleas, ticks, cockroaches, rats and other pests from reproducing in large numbers. But it's a constant battle. Consider these statistics:

- Rats bite more than 45,000 people annually, mostly infants and children.

- Seven to eight percent of the U.S. population is allergic to cockroaches. Studies of inner-city children in Atlanta with chronic wheezing, runny eyes and noses revealed that 44 percent were allergic to cockroaches.

- Rodents are responsible for, or implicated in, the spread of numerous diseases, including plague, acute food poisoning, rat-bite fever and typhus.

- Lyme disease, transmitted to humans by the deer tick, infects thousands of Americans annually — and the numbers are rising.

- Cockroaches transmit a variety of digestive tract disorders, including food poisoning, dysentery and diarrhea.

- Mosquitoes are prime carriers of several types of encephalitis, a devastating illness that attacks the central nervous system of humans.



Precise application of specialty pesticides keeps living environments pest-free.

continued on following page

PEST CONTROL

ENVIRONMENTAL DAMAGE

Public health isn't all that suffers when pests reproduce in large numbers. Wood-destroying insects, including termites and carpenter ants, cause nearly \$2.5 billion in structural damage annually. In the United States alone, termites cause an estimated \$800 million worth of damage to more than 600,000 structures.

And termites aren't the only villains. Rodents eat or contaminate millions of dollars of food daily. The National Pest Control Association



Americans largely take a pest-free home for granted. Specialty pesticides have eliminated the threat of many diseases that wracked humans in decades past.

estimates a single rat in the United States may contaminate up to \$1,000 worth of food annually. Worldwide, experts estimate rats and mice destroy enough food each year to feed 200 million people! By damaging electrical wiring, rats are suspected of causing up to 25 percent of all fires of unknown origin.

Fully one-fifth of all U.S. households have had a pest problem in the past year. Yet, despite the risk of disease and structural damage, many Americans still fear the use of specialty pesticides to control pests. Why? Experts say the general public doesn't understand the relationship between benefits and risks.

Part of the reason for the pesticide phobia, says former U.S. Surgeon General Dr. C. Everett Koop, is "the public doesn't have a very good grasp of the relationship between the dose of a toxic substance and its risk in human beings." Information often comes from those who use scare tactics rather than science when warning the public.

But the truth is hard to deny. Professional pest management programs improve the nation's standard of living. Widespread outbreaks of yellow fever, malaria and similar maladies — plagues that once swept the nation and the globe — have thankfully been committed to the history books.

BUG OFF

SPECIALTY PESTICIDES LESSEN THREATS TO HUMAN HEALTH

While the threat to human health from harmful insects has been greatly reduced, it hasn't disappeared. Insects and other pests pose many common and not-so-common health problems. Each of the following problems can be and is being controlled through efficient and effective pest control methods, including use of specialty pesticides.

Ants	Bite and sting Infest stored food
Bats	Associated with rabies, histoplasmosis and other diseases
Bees	Bite and sting Infest stored food
Beetles	Infest stored food Cause dermatitis
Cockroaches	Cause food poisoning Associated with gastroenteritis, dysentery, allergies and skin infections
Fleas	Cause dermatitis Transmit plague, typhus and tapeworm
Flies	Transmit typhoid, cholera, dysentery, infantile diarrhea, tularemia and other diseases Some species bite
Hornets	Bite and sting Infest stored food
Lice	Cause dermatitis Transmit epidemic typhus, trench fever and relapsing fever
Mites	Can cause dermatitis Transmit rickettsialpox and hemorrhagic fever
Mosquitoes	Transmit malaria, encephalitis, yellow fever and dengue fever
Nuisance birds	Associated with histoplasmosis, ornithosis and other diseases
Rodents	Bite Transmit leptospirosis and lymphatic choriomeningitis
Ticks	Transmit Lyme disease, Rocky Mountain spotted fever and tularemia
Wasps	Bite and sting Infest stored food

Source: National Pest Control Association

T R E E S

IMPROVING THE VIEW FROM ABOVE

Trees beautify the environment through colorful flowers, showy fruit and rustic winter bark and twigs. Trees also offer practical benefits, such as screening high winds, buffering sound, hiding unsightly views and providing cooling shade.

In fact, tree plantings significantly reduce temperatures in urban areas, which, on average, are 10 degrees warmer than the surrounding countryside. Tree plantings and light-colored surfaces can cut home energy bills by \$100 to \$200 a year, according to the American Forestry Association.

An admiring but busy public takes trees' value largely for granted. Few probably realize urban areas are losing trees at a record pace. According to the National Arbor Day Foundation, in some U.S. cities, up to four trees die or are removed for every one tree planted.

The full value of trees would not be realized without the benefits of specialty pesticides. Specialty pesticides are to tree health what medicines are to human health. When applied knowledgeably and responsibly, tree-care medicines are invaluable tools that make a positive contribution to our environment and to our health. Healthy trees improve our quality of life.

Unfortunately, trees are subject to insect attack. The gypsy moth, for example, has destroyed hundreds of thousands of acres of trees, mainly from the Carolinas up through Michigan. Favored hosts include oak, birch, apple and cottonwood trees.

However, biological and conventional specialty pesticides can control the gypsy moth caterpillar. Community spray programs and tree care firms are working to control the pest — and save trees.

No one wants those trees to go the way of the American elm, which once formed cool, green archways over streets in U.S. cities. Since the 1940s, thousands of the mighty elms have fallen victim to Dutch elm disease. Today, few are left.

A tiny insect, the elm bark beetle, carries the deadly disease from tree to tree. U.S. Forest Service research, however, has found that specialty pesticides, properly applied to the top of the tree, will reduce beetle feeding and limit introduction of the disease.

An integrated approach to control — pruning, specialty pesticide spraying and fertilizing — can save trees. Removing any segment of the three-part control program weakens the cure. The use of pest-specific specialty pesticide products, as part of an integrated approach, contributes to a better environment for today and tomorrow.



Top: Healthy trees provide cooling shade, protection from the wind and other benefits to society.

Right: The gypsy moth has devastated trees across the nation. The pest's expanding presence has left trees defoliated and property values diminished.



D I D Y O U K N O W ?

Trees bring beauty and practical benefits to modern society. They provide shade, beautify properties, strip pollutants from the air and much more. Kept healthy by specialty pesticides and mechanical controls, trees:

- Save energy. One large tree has the same cooling effect as 15 room-size air conditioners. Mature trees shading homes cut energy costs by 18 percent to 50 percent.
- Increase property value. Trees can add up to 20 percent to the value of a home. However, without proper maintenance, the value of trees declines. Timely use of specialty pesticides controls disease and insect damage.
- Clean the air. One acre of trees removes 5 tons of carbon dioxide from the air annually. According to the American Forestry Association, one average, mature tree absorbs 26 pounds of carbon dioxide per year. The same tree cleans up pollution created by a car driven 11,300 miles, as well as gives off enough oxygen for a family of four to breathe for a year.

TURF

PUTTING SPRING IN YOUR STEP



Turf does more than just look pretty. It's estimated that a well-maintained landscape can add up to 15 percent to a home's value.

The rain has ended, and you're ready to head to work. If you hurry, you can run the bills to your mailbox and still make it to work on time. You grab the stack of envelopes, dash out the front door — and sink in mud up to your ankles.

That's what life would be like if you didn't have a lawn.

It's easy to overlook the obvious, and turf is obvious. It's everywhere — home lawns, parks, roadsides, building grounds and more. People forget the main purposes of turf are to hold soil in place and offer solid footing. The beauty of turf overpowers its function.

FUNCTIONAL BENEFITS

In addition to stabilizing the soil, lawns offer many other benefits as well. Each makes life more enjoyable.

Turf moderates the climate. It cools city streets and reduces energy costs of cooling homes and businesses. Concrete and other hard building materials often cause urban areas to be 10 degrees warmer than nearby rural areas. According to The Lawn Institute, eight average-sized lawns have the cooling effect of 70 tons of air conditioning; the average home-size air conditioner has just a 3- to 4-ton capacity.

DID YOU KNOW?

The role of turf often is overlooked by the public. Healthy turf provides a number of benefits, and specialty pesticides play a key role in keeping turf in top condition. Well-groomed turf:

- Promotes safety and health. Turf reduces fire hazard, reduces injury to children or athletes and provides a safety buffer for roadsides, airport runways and agricultural fields.
- Improves the environment. Turf tempers the climate around homes, as well as stabilizes the soil and prevents runoff.
- Beautifies and improves the value of property. Turf is critical in landscape design. Its green color accents and frames plantings of ornamentals. Well-maintained landscaping typically adds up to 15 percent to a home's value.
- Provides recreational opportunities. Turf provides the safest, least expensive and most resilient outdoor surface for sports. No other surface of vegetation tolerates as much abuse.



Turf also reduces noise levels by as much as 30 percent, and cuts glare along roadsides, which poses a hazard to drivers and an annoyance to those in homes and offices. Turf's rough surface breaks up incoming sunlight.

As with ornamentals, healthy turf provides a zone of protection that slows the spread of wildfires around buildings. Northern California residents learned this lesson in 1991. Because of their healthy lawns, many homes survived the Oakland fires.

In addition to helping save lives, a thick lawn improves quality of life. A healthy lawn averages six turfgrass plants per square inch and 850 plants per square foot. There are 8 million plants in an average 10,000 square foot yard. Each plant converts carbon dioxide from the air into the oxygen we breathe. A turf area 50 feet by 50 feet releases enough oxygen to meet the needs of a family of four. Turfgrass also absorbs smog-produced ozone and sulfur dioxide.

When it intercepts rain, turf prevents hardening of the soil. If turfgrass leaves didn't take the brunt of the downward force, driving rain would wash away soil and leave the top layer hardened. Turf's root system helps the soil breathe and allows water to enter the soil.

Golf greens wouldn't be "green" if not for natural turf. A diligent weed control, aeration and fertilization program keeps turf healthy, dense and attractive.

Similarly, turf reduces runoff of water and nutrients. In fact, agricultural extension agents recommend grass buffer strips around crop land and feedlots to reduce runoff and keep nutrients from entering waterways.

Because of its ability to remove nutrients from water, turf is used as a living filter to clean up sewage waste. Waste water is applied to turf and soil to be purified before entering ground-water systems.

On another safety front, turf is required along airport runways to prevent dust from flying into aircraft engines. Along highway roadsides, turf serves the same purpose. Turf also serves as a safety strip in case a plane strays from the runway or a car runs off the highway.

continued on following page

TURF



Natural turf is preferred for athletic fields. Turf takes abuse and bounces back, providing sports enthusiasts with solid footing and cushioning.

HUMAN HEALTH AND SAFETY

Family health and safety is a prime concern. Surprisingly, many dangers exist around the home. Despite its appearance as a beautiful, lush carpet of green, a lawn plays a vital role in minimizing dangers. Many Americans seem to have forgotten turf's role in maintaining the health and safety of families and pets.

Turf that is free of weeds and mowed regularly provides a safe haven for allergy sufferers. Pollen from noxious weeds, such as ragweed, greatly bothers hay fever sufferers. The National Institute of Allergy and Infectious Disease reports 35 million Americans suffer from allergies, and 9 million of those have asthma. Although allergic reactions rarely are fatal, asthma causes about 5,000 deaths per year. By stopping seedhead formation with specialty pesticides and regular mowing, the source of pollen problems is eliminated.

Healthy turf also reduces allergic reactions caused by dust and other particles in the air. It's estimated turfgrasses trap much of the 12 million tons of dust and dirt released each year into the atmosphere.

Similarly, weeds such as clover and dandelion attract insects that can be fatal to humans who experience reactions. Various insects, including bees, wasps, hornets, yellow jackets, fire ants and Africanized killer bees, are responsible for about 40 deaths a year. Severe reactions to stings occur in 0.4 percent of those stung. Controlling insects and insect-attracting weeds with specialty pesticides helps prevent unnecessary deaths.

In daily life, turf provides a clean cushion on which children can walk and play. Turf cushions toddlers' falls. Children stay cleaner in grass, too.

Turf provides solid footing and cushion on sports fields. A study by the Sports Research Institute, the National Athletic Injury/Illness Reporting Service and The Pennsylvania State University found that one in five injuries and about 44 percent of ankle, foot and knee injuries are field-related. Fields in better playing condition are safer. The study also found that although practice fields were used much more than game fields, they received less care.

This safety message has not been highly publicized. A timely weed control, aeration and fertilization program promotes dense, healthy turf, which, in turn, promotes field safety.