

# Made FOR THE shade

*There are woody plants that do well in partial shade and those that prefer full shade. Most varieties do best in partial shade conditions.*

By STEVEN GUSTAFSON, Ph. D.

Good landscape design takes its clues from nature. A forest is a good model of plants growing in a shade environment. A forest consists of the overstory and the understory of living plants. Dominant trees compose the overstory providing various degrees of shade. The understory consists of smaller tree species, shrubs, vines and groundcovers (annuals and perennials).

Understory plants are well suited to conditions beneath the much larger dominant trees. Environmental factors such as the degree of shade, soil moisture and soil pH determine which plants thrive in a particular understory. These same factors help determine which plants will grow well in a manmade landscape.

In horticulture we often use the terms partial and full shade. Full shade defines an area that receives no direct sunlight. Partial shade refers to an area that receives filtered sunlight or some full sunlight part of the day, and less or none at other times. There are plants that do well in both, but more that do well with partial shade.

That's why it's so important to do a careful site analysis before determining which plants to put in a particular area. The site may be sunny when you visit the site, but receive shade most of the rest of the day. Or it may receive just morning or afternoon shade. In a site analysis, take into account other factors like topography and pertinent architectural features of the adjacent building(s). Be aware of microclimates in the planting area you select. They're a product of geographical orientation and anything affecting exposure to prevailing weather and exposure to the sun.

Equally important to the process of determining plants for a particular landscape is your "customer needs" analysis. Consider the needs, desires and tastes of your clients, whether they're landscape clients or members of your golf course. This includes the use of the area, specific preferences, and the amount of maintenance the plants will require after planting.

—The author is horticulturist and grounds manager at  
The University of Tennessee, Martin.



*Trees that generally do well in shade. Check with local nurseries or extension service for new, popular cultivars.*

Scientific name	Zones	Common name
<i>Acer circinatum</i>	1-6	vine maple
<i>Acer palmatum</i>	5-8	Japanese maple
<i>Acer pennsylvanicum</i>	3-8	striped maple
<i>Alnus sp.</i>	2-7	alders
<i>Cercis canadensis</i>	4-9	eastern redbud
<i>Cornus sp.</i>	1-9	dogwoods
<i>Corylus sp.</i>	4-9	hazels
<i>Illex sp.</i>	3-8	hollies
<i>Podocarpus macrophylla</i>	4-9	yew pine
<i>Thuja occidentalis</i>	5-9	arborvitae
<i>Tsuga sp.</i>	3-8	hemlocks

*Shrubs that generally do well in shade. Check with local nurseries or extension service for new, popular cultivars.*

Scientific name	Zones	Common name
<i>Berberis sp.</i>	5-8	barberry
<i>Euonymus japonicus</i>	7-9	evergreen euonymous
<i>Fatsia japonica</i>	8-10	fatsia
<i>Illex sp.</i>	3-8	hollies
<i>Ligustrum sp.</i>	3-7	privets
<i>Lonicera sp.</i>	5-7	honeysuckles
<i>Nandina domestica</i>	6-9	heavenly bamboo

# '3 x 3' program controls apple scab

*Crabapple trees on this program stayed green and healthy looking, with little or no leaf yellowing or defoliation.*

By PAUL C. PECKNOLD/  
Purdue University

**I**t's not too early to begin planning your spray program for apple scab of crabapple, especially after five or six consecutive years of epidemic scab.

We suggest you use Banner fungicide in a "three-by-three" (3 x 3) spray program.

#### **Why three sprays?**

All spray programs should strive to be as minimal, efficient, and efficacious as possible. The challenge with landscape plants is to determine the fewest number of sprays that will provide the most "aesthetically acceptable" disease control; realizing that perfect scab control is not needed for landscape crabapples. Over the past number of years we have field-tested both a 2-spray and 3-spray program for season-long control of apple scab on crabapples. While the 2-spray program generally gave acceptable early season scab control, it often resulted in poor mid- and late season control; trees on the 2-spray program frequently showed light to moderate leaf yellowing and defoliation by late July. However, the 3-spray program has proven to be very reliable in providing season-long control of scab. In all years tested (most of those being epidemic years for apple scab), trees on the 3-spray program remained green and healthy appearing with little or no leaf yellowing or defolia-

tion at the time final evaluations were made, generally in late August or September. Scab lesions did develop during the latter part of summer on trees treated with the 3-spray program, but never to the extent of causing significant defoliation.

#### **Why a three week interval?**

In those years when we attempted to stretch the interval from 3 to 4 weeks the program was a distinct failure. For example, the percent of leaf scab jumped from 10 percent to nearly 80 percent by late June, when a four week rather than three week interval was used in our early field trials. Growers are advised to mark their calendar with three week intervals and "stick to it", being sure not to stretch the interval.

In those years when infection periods are few, you could get away with stretching the interval between sprays or using just two sprays.

However, a primary benefit of the program is that it takes the guessing out of scab control, it's a "no-brainer"; you simply spray when the calendar tells you to spray.

#### **Why begin at pink?**

The first spray should be applied at the phenological pink stage, just prior to bloom. We recommend early pink if wet conditions have predominated before pink; however, if conditions have been dry, late pink is preferred. On average, the pink stage of tree phenology coincides with the time primary scab spores are at their peak. Before pink, there would be the probability of too much scab coming in later in the season, while if sprays are started after pink, there is the risk of having so much primary scab build-up you could never bring it under control. Trials in which the initial spray was delayed until petal fall showed severe cluster leaf scab before the

initial spray was even applied, and much defoliation by late summer.

#### **Why Banner?**

The excellent curative abilities of the new sterol demethylation inhibitor (DMI) fungicides have allowed us to stretch spray intervals and reduce the number of applications for numerous landscape foliar diseases, such as powdery mildew, dogwood anthracnose, and cedar-apple rust. Recently, DMI fungicides have also been used to reduce the number of sprays to control primary apple scab on commercial apples; where an accepted alternative to early season primary scab control is to make just

*Starting at the pink stage, trees are sprayed three times at three-week intervals.*

four spray applications starting at tight cluster. The DMI fungicide, Banner, has been the primary fungicide used in our field trials, because of its broad ornamental labeling and excellent systemicity and curative abilities. Most years we used a Banner 1.1EC formulation at 2-oz. per 100 gallons. This past year we re-evaluated our 3-spray program using the newly improved formulation of Banner (Banner Maxx), at 2- 5- and 8 oz per 100 gallons of water. All rates gave excellent season-long scab control. However, the higher 5- and 8-oz. rate gave significantly better control of early season scab than the lower 2-oz. rate. Based on these findings, we believe the best season-long control of apple scab can be achieved by using a 5-oz. rate of Banner Maxx with the 3 x 3 program. **LM**

*Paul C. Pecknold is professor of plant pathology at Purdue University.*

# Crew mobility!

## Guide to Landscape Vehicles

*The key to getting your job done each day is mobility; getting from place to place quickly, safely and with the tools you need to complete the job with maximum efficiency. You need a dependable vehicle.*

By DANIEL INGHAM

**F**or the landscaper, mobility means his truck. For the golf course superintendent, athletic field manager or grounds manager, it's his utility vehicle. For both, it means the options and accessories they choose to outfit them with.

### The truck you have, the one you want

The most important, and expensive, purchase most landscapers will ever make is their truck, or trucks. The truck you choose is the one you will be stuck with for the next several years, so you need to choose carefully, matching the truck to the job being performed. The place

- ▶ Will you regularly be pulling a trailer with this truck?
- ▶ How long do you plan to keep the truck?

Matching the vehicle to the job is the most important part of the selection process. Because so much depends on your vehicle, price is not going to be the key factor in choosing it. Durability and functionality will be. The biggest mistake a contractor can make is to buy a vehicle that is not going to be up to the demands placed upon it because of price considerations, or one that will actually hamper him on the job.

Identify problems you may be experiencing with your current vehicle choice. These may include things like seating space

for work crews that can be solved with an extended cab option. Perhaps you want to eliminate the use of trailers, in which case you might consider a box van. A flat-bed or stake-bed truck can make it easier to

haul equipment or debris. Your current vehicle may be wearing itself out pulling trailers in addition to the load in the bed, so you need more power or might want to consider a diesel engine. Perhaps you need a truck with more all around versatility, or one that is more specialized. A heavy-duty vehicle with reserve power and capacity to handle all you will throw at it will last longer and incur less downtime than one that is worked to capacity every day.

haul equipment or debris. Your current vehicle may be wearing itself out pulling trailers in addition to the load in the bed, so you need more power or might want to consider a diesel engine. Perhaps you need a truck with more all around versatility, or one that is more specialized. A heavy-duty vehicle with reserve power and capacity to handle all you will throw at it will last longer and incur less downtime than one that is worked to capacity every day.

The most commonly used truck in the industry is an unmodified, 3/4-ton or larger fleet-side or stake-bed.

With that in mind, let's look at a few of the trucks available to you today:

- ▶ What problems are you having with your current truck or truck/ configuration, and how might a different type or model of truck correct them?
- ▶ What will be the main purpose of the vehicle (landscape maintenance, irrigation maintenance, material hauling), and how much flexibility do you need to perform varied functions?
- ▶ What are your crew transportation needs?
- ▶ What accessories (equipment racks, dump inserts, specialty bodies), are you planning to install?

With that in mind, let's look at a few of the trucks available to you today:

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### LONG-HAUL WINNERS

GMC trucks have long been leaders in the heavy commercial truck market. They also have a solid reputation in the light commercial truck segment and one of their

## Price, size, 4WD considerations

Kevin L. Dilliard, Superintendent of Parks, Collinsville Area Recreation District, Collinsville, IL

**Big acreage for Ford, Dodge:** "We have about 150 acres split between parks and a number of municipal and school athletic fields.

"We have a one-ton dump truck that we use for hauling rock and gravel and sand, and which also has snow-plow hook-up on. We have a four-wheel drive Dodge truck that we use to pull the trailers to transport our mowers during the summer.

"We've got a four-wheel drive Ford Ranger that our mechanic uses for running errands. He is also in charge of the ball fields and the cleaning maintenance crews, so he uses that during the day. We have a Dodge Ram 3/4-ton that is used by the sports complex maintenance crew. And then we have a GMC Sierra 3/4-ton truck that I use. We also have a Ford bucket truck that we use for tree work, hanging nets on the field, and any other work where we need to get up in the air.

**What's it cost:** "The major thing we look for is the price. We have to use Illinois State bid sheets to go by and see what's available and we pick and choose from what they've got on the bid sheets. We also look at the size of the truck and its capacity. Whether it is four-wheel drive or not. Whether its an extended cab. The durability of the truck in general, especially if we're going to put a snow plow on it."

**Configuration:** "The pickup trucks are standard fleet-side bodies. We don't do any customizing them other than to add some tool boxes and bed-liners."

latest offerings is the Sierra 3500 HD cab chassis. "Commercial operators are becoming increasingly sophisticated in their truck purchases," says Dick Pennell, GMC brand manager for commercial trucks. "They recognize that, long term, premium trucks like ours provide the biggest return on their investment by allowing them to do more work and do it more easily and efficiently. We're finding that vocational operators want to do as many things as possible with their trucks."

The Sierra 3500 HD has a gross vehicle weight rating (GVWR) of 15,000-pounds with a payload of from 8,587- to 9,036-pounds, depending upon the bed choice. Add to that a pulling capacity of 12,000-pounds and you have a truck that can easily handle a daily landscaping regimen. Fitted with a dump or a stake bed, it has a large material handling and towing capacity that is augmented by a heavy-duty 5-speed transmission with a deep low gear and overdrive fifth. Engine options include a 195-hp turbo diesel or a 290-hp Vortec V8.

If you don't mind going with the smaller 2500 Sierra, you can purchase a bi-fuel engine that runs on both gasoline and compressed natural gas (CNG). This package will add about \$5,000 to the sticker

price, but much of that will be recouped by greatly reduced fuel costs, a longer lasting engine and a total driving range of over 550 miles which can eliminate some of your daily fuel stops.

**Chevrolet's C/K Series** pickup trucks have probably been their biggest seller in just about all market segments. In fact, they sold over a half million of them in 1996. This has to do, no doubt to the wide range of options and configurations available.

Payload capacities range from 1,656-pounds in the C/K 1500 to 4,155-pounds in the C/K 3500. Towing capacities range from 7,000- to 10,000-pounds, respectively. Depending on the C/K you want, engine options range from a 200-hp Vortec V6 to a 290-hp Vortec V8 or a turbo-charged V8 Diesel in either 180 or 195 hp. Plenty of power to haul materials.

Transmission options include a heavy-duty 5-speed manual transmission with overdrive or a 4-speed, electronically controlled automatic. The heavy-duty manual transmission is available on the 2500 and 3500 C/K's and features a single-piece countershaft for increased durability. The electronically controlled automatic has a number of improvements, including a second-gear start feature which provides extra



The GMC Sierra 3500 HD Cab Chassis with dump body provides plenty of hauling and towing capacity.

control in slippery driving conditions. A nice feature for those doing snow removal. It also has a wide range of gear ratios which provide good low-gear torque and increased mileage in overdrive.

Finally, there are both the extended and crew-cab options. The extended cab is available on the 1500 and the 2500, while the crew-cab is available on the 3500. The

## Box van user

*Thomas "Cooper" Lee, Country Heritage Landscaping, Fayetteville, AR*

"In the landscaping division we use one-and-a-half ton flat-bed dumps, two GMC's and two Fords. In our maintenance end, in years past, we have always used 1/2-ton pickups pulling a trailer.

years ago we had to break those people of only driving a truck and teach them to drive a truck and trailer combo. They became confident with that, then had to switch again. But, after a week, nobody wanted to back to the half-ton trucks."

**Likes his Fords:** "We have worked the

'big three': Dodge, GMC and Ford vehicles. We have looked at the strength and power of the vehicles — the durability behind the truck. In the half-ton class our people have been pleased with either the Ford or Chevy truck. When you get into the larger work trucks, one-ton and ton-and-a-half, there is no doubt that our people have been more impressed with the Ford. Why? I can't answer that, but they have been. We've worked some of these trucks, the Dodges, Chevy's and GMC's



The Chevrolet C/K Series trucks offer an extended-cab version with a passenger-side third door.

extended cab can seat six adults and comes with an optional passenger-side third door. The crew-cab offers a full back seat with four-door access.

Ford has been making all sorts of trucks for a long time, favorites of quite a few contractors. "We discovered that the real volume opportunities with our work trucks depend on our ability to compete in multiple niche markets," said Ross Roberts, Ford Motor Company Vice President and General Manager of Ford Division. "So we've added four-wheel drive to the dual-rear-wheel trucks and raised the GVW ratings, increased the horsepower and torque on our engines, and designed the vehicle to be capable of snowplowing in Super Cab and Crew Cab configurations."

In January, 1999, Ford debuts its Super Duty F-Series. The Super Duty F-Series is an all-new full-size truck developed and built on a separate platform from the F-150 and F-250, and extends to the F-350, F-450 and F-550 models. The Super Duty F-Series trucks feature the new 5.4-liter Triton V8 and V10 engines and an im-

**Box vans:** "Last year, we purchased two, 14-foot Isuzu NPR box vans and are now looking to get two more of them. We've really enjoyed them. We don't need to pull a trailer with these trucks unless we are cleaning up debris. Another is that there were always things laying on the bed of the trailer or truck that now hang on the walls of the van. We've actually made shelving for the inside of the box vans which eliminates having to step on things.

"With the vans we have everything and more that we had with the truck and trailer combination. The crews just love them. Its like their own little workshop there in the back of the truck, and its tall enough that they can stand up inside. Also, there is better security because we can lock it up, and everything is protected from the elements. Things like fertilizer don't need to be tarped and covered-up when it rains."

**Box van maneuvering:** "At first, our drivers were hesitant and didn't want to drive the box van because of the height — they were real concerned about that. Two

for 10 to 12 years. We've only been working the Fords for about four to five years.

"Overall, the guys are much more pleased with the Ford product in the heavy trucks. These are all gasoline powered trucks, too."

**Configuration:** "Our one-tons are typically a 12-foot dump bed. They're flat-beds with a hydraulic dump and removable sides. We usually buy the cab and chassis and have them done locally."

**Racks:** "We are installing racks that extend over the cab on our dumping trucks. We can put tools and wheelbarrows up there and not have to unload them when we want to dump. Also, around the bed, we have welded 12- to 14-inch lengths of pipe that the tool handles can slip into and stay in place while we dump. This eliminates a lot of the time that was spent loading and unloading when we used to pile the stuff on top of the load. We've also fastened water-proof tool boxes to the under frame. On the front bumpers we have a rack we built to hold the plastic traffic safety-cones."

## Pirates like durable Mules

John Adler, Pittsburgh Pirates, Asst. Superintendent, Bradenton, FL

**Infield team player:** "We have two 2500 Kawasaki Mules and one 500 Kawasaki Mule that we use.

"The main thing we use them for is hauling the packing clay for the infield. We do this on a daily basis because we are continually having to pack all the bases and mounds. We also use them for

edging our fields. We use the Mules to haul the debris and for other general clean-up."

**Considerations:** "Other than price, the most important consideration was durability.

"We opted for the hydraulic dump-bed, which is not a standard option. Also, we went for the 2500 because it is wider than others we looked at, so we can sit two people comfortably. Lights, too, were important because we start work very early in the morning and end late at night.

"I like the air-intake on the Mule. They route it through the roll-bar. Obviously, on a ball-field, it gets rather dusty when we move all that clay and debris, so this is really a nifty way to keep clean air going to the engine and help with maintenance."

proved 7.3-liter diesel engine.

The new Super Duty trucks will offer over 44 vehicle configurations, compared with the 24 currently available. Among the choices are: pickups or chassis cabs available as Regular Cab, Super Cab, or Crew Cab models; a 19,000-pound gross weight vehicle offering designated as the F-



Ford will introduce its Super Duty F-Series truck in January, 1999.

550; two- or four-wheel drive; short-or long-box configurations and a box-delete option; and transmission choices ranging from a 4-speed automatic, heavy-duty 5-speed manual, or a 6-speed manual standard with the diesel engine.

The redesigned Dodge Ram Series trucks have only been on the market a few short years but have been making serious inroads in the contractor market. One of the reasons is the wide choice of power trains. Five different engine options, a choice of 5-speed manual or 4-speed auto-

matic overdrive transmissions, and a wide variety of rear axle gear ratios allow you choose a drive train that will provide you with optimum performance.

Engine options include a 3.9-liter V-6, 5.2- and 5.9-liter V-8's, an 8-liter V-10, and a 5.9-liter straight-six Cummins turbo diesel. The V-10 gives the Ram 2500 a towing capacity of 13,200-pounds — more than the diesel and more than other trucks in that weight class. If you are looking for a good towing vehicle the Dodge Ram is definitely worth looking at.

Another interesting feature of the Dodge Ram series is the design of their crew-cab. The Quad Cab, as it is called, has rear doors that swing opposite of the front doors, creating a large, single, pillarless opening for easy passenger access and cargo loading. Another nice design feature takes into account that people who work with their truck often wear gloves. Many of the controls inside of the cab are designed to be easily used while wearing gloves.

Toyota has long been a favorite of light truck aficionados. In 1993 they rolled the T-100 out into the full-size truck market. Since then, they have proved themselves to be reliable work trucks for contractors in spite of the limited number of configurations available.

Engines available with the T-100 are either a 190 hp V-6 or a 150 hp in-line 4-cylinder engine. The 4-cylinder engine allows a payload capacity of 1,650 pounds and a towing capacity of 4,000-pounds.

The V-6 provides a payload up to 2,150-pounds and a towing capacity up to 9,500-pounds.

The T-100 is available in an extended-cab version in both the 4- and 6-cylinder packages. Other features include side impact airbags and door impact



The Dodge Ram Series offers a variety of powerful power train options.

beams, three point seat belt restraints and anti-lock brakes.

### TILT-CAB TRUCKS GAINING

Compact, tilt-cab trucks, usually configured as delivery vans, have been a common sight on our roads for quite a few years. It has only been in the last few that landscape contractors have turned a serious eye towards them. These trucks are easy to drive, maneuverable, and offer superior visibility to the driver.

One of these is the **Mitsubishi/Fuso FG** 4-wheel drive. According to Mitsubishi, this is the only medium-duty cabover with 4-wheel drive available in the United States. Body options for the FG include dumpers, utility, tool carriers, drop-side stake bodies and dry vans up to 14-feet in length. It seats three passengers in the cab.

The FG comes with a 135-hp, 4-cylinder, turbo diesel engine and a 5-speed manual transmission with a 2-speed transfer case. The gvw is 12,000 pounds and it can carry a payload of 6,590-pounds.

**Isuzu's NPR Series** of tilt-cab trucks offer both a gasoline and diesel versions in two different sizes. The gas NPR's are available in either 11,050- or 14,050-pounds GVWR, and come with a 250-hp V-8 engine coupled to a 4-speed automatic transmission. The diesel NPR's come in a 12,000- or 14,500-pound GVWR version, powered by either a 142- or 172-hp turbo-charged engine, coupled to your choice of a 5-speed manual or 4-speed automatic transmission. The payloads for these vehicles range from 4,700- to 9,880-pounds.

### SUPER UTILITIES

A utility vehicle may not be the most expensive purchase a grounds superintendent might make, but it can be one of the most important. Because of the wide variety of situations they are put to use in,

## The power of diesel

*Cornelius Brady, Community Landscape Services, Chantilly, VA*

**Ford loyal:** "Our entire fleet is made up of Ford trucks. We have a variety of F-250, F-350 and F-450's. We also have several larger trucks in the 600 and 700 series (over 10,000 lbs. Gross Vehicle Weight)."

**Diesel power:** "All of our trucks are diesel. The diesel engines have more power which is important. And, all of our trucks are four-wheel drive. We do a lot of snow plowing in winter, so we need that and so we purchase the trucks with plow kits."

**Attachments:** "The fleet-sides are easily available when we need them, are not as costly as a custom body and they're easier to sell when we want to trade them for a new truck."



Toyota's T-100 Series trucks offer extended cabs for contractors.

utility vehicles need to be more flexible, and able to perform more jobs, than ever before.



Tilt-cabs like this 4-wheel drive Mitsubishi/Fuso are gaining in popularity among landscapers.

## Dependable pick-ups

*Marc Ames, Ames Lawn & Landscape Svc., Inc., Huntsville, AL*

**Two brands:** "We've got four Chevy's, two GMC's and a Ford. The Ford's a one-ton, one of the Chevy's is a ton, one is a ¾-ton, and the GMC's are ½-tons. All of the one-tons are dumps and the rest are fleet-sides."

**Can it do the work:** "When choosing a truck, the most important consideration is dependability and workability. By workability, I mean how functional and how easy the truck is to use on the job site."

# Variety for multi-service company

Eric Spalsbury, Albuquerque Grounds Maintenance, Inc., Albuquerque, NM

**Dual axles:** "For the maintenance division we primarily use Ford F-250 pickup trucks with an extended cab so our crews can ride comfortably. Our landscaping division uses one-ton Ford dual-tire axles, usually with a stake body. Our chemical spray rigs are also mounted on one-ton Ford 'duallies.'"

**Racks are neat:** "We have an irrigation division as well and for that we use Chevy ¾-ton vans, with interior racks. We find that it gives a neater appearance on the job-site and it eliminated the problem of parts walking away from the trucks crews had their backs turned. Our interior division also uses Chevy vans, which we also use for all of our color installation because they have slide-out interior rack that can hold the flower trays."

**Utility vehicles:** "We have a couple of on-site, full-time jobs that we maintain with utility vehicles. At one we use a gas-powered Cushman with a pickup container on the back. The other site is a mall where we don't haul as much material and we use a gas-powered E-Z Go there."

**No down time:** "Dependability is the most important factor for us, by far. A down day costs us so much money."

**Go with gas:** "All of our vehicles are gasoline-powered. That's what we started with and I've stayed with it because I didn't want to switch horses mid-stream."

**Configuration:** "Our maintenance division uses the fleet-side pickup truck body while our maintenance division uses stake beds. On the stake beds we installed Tommy-Lifts [lift gates], and the trailers for the maintenance trucks have Trimmer-Traps installed on them. We had tried to make our own but that didn't work out too well."

**Snow removal:** "We have a combination of two and four-wheel drive vehicles. We have a total of 27 trucks and of those seven are four-wheel drive with plow kits."

The options available on many of today's utility vehicles include everything from live hydraulic hook-ups for hydraulic tools, to scissors lifts that can help with tree-trimming duties. They can operate a variety of attachments like aerators and core-harvesting using a variety of PTO systems or do double duty as a spray rig. Take a good look at all the options before you decide. And before you make that decision, go through the same question and answer process outlined for trucks earlier in this article.

E-Z-Go/Textron's *Workhorse* was introduced in 1996. The *Workhorse 800* turf vehicle is a new addition to this line. It is powered by a 9-hp gasoline engine coupled to an automatic, continuously variable transmission. If you prefer an electric vehicle, the 800E is powered by a heavy-duty 36-volt, high-efficiency motor. The 46 x 35 x 10-inch cargo bed has an 800-pound payload capacity which, when combined with the dump option, makes material handling quick and easy.

Features include a heavy-duty bed liner for durability, a center console with drink and radio holders, and rack-and-pinion steering. Options include a cab with doors, flatbed, light package (headlights, taillights and brake lights), light bar, power dump bed, top, trailer hitch, and an all-weather enclosure and windshield.

Club Car's latest offering is the *Carryall Turf II*. Powered by an 11-hp gas engine, it has a top speed of 15 mph when married to its synchromesh directional-shifting transmission. It has 1,200-pound payload capacity and has a 49 x 50-inch cargo box with 15 cubic feet of cargo space.

Standard features include: an anti-sway torsion bar, a differential guard, synchromesh transmission, maintenance-free rack and pinion steering, reduced speed reverse, pedal start, and dash-mounted instrument package. Another important feature of the Carryall is its rustproof, welded aluminum frame and rear body.

Available with a choice of either gas or electric power, the *Cushman Hawk* features a heavy-duty steel frame, reinforced



Club Car's Carryall Turf II has a 1,200-pound payload.



The E-Z-Go Workhorse can be had in gas and electric versions.





The Jacobsen SV's can now be fitted with the new SDI turf spraying system.

front suspension and rack-and-pinion steering to make it both stable and maneuverable. The gas version comes with a 14-hp air-cooled engine equipped with a maintenance-free remote air intake system. The electric version has a powerful 6.5-horsepower, 48-volt industrial electric motor supplied by eight 225-amp batteries.

The *Hawk's* payload is rated at 1,200-pounds and comes standard with a 40 x 48-inch wide cargo box. Other features include: a 50-amp alternator to allow the use of electrical accessories; a drum-type parking brake and rear-wheel hydraulic brakes for added stopping power; and powerful 35-watt halogen headlights.

Jacobsen/Textron produces the SV Series of utility vehicles. They're available with either diesel or gasoline engines and rated for payloads up to 2,800-pounds. In addition to the standard dump box, SV's can be mounted with sprayers, spreaders and topdressers for turf work. SV's come equipped with hook-ups for hydraulic landscaping tools which also is available from Jacobsen. Other options include a R.O.P.S. cab; a fully enclosed cab with heater and detachable doors; hydraulically driven mechanical PTO kits; and mounting kits for aerators and core harvesters.

New for the SV this year is the SDI line of sprayers. They come in 100-, 160-, 225-, and 300-gallon capacities. All are vehicle mounted except for the 300-gallon trailer mounted sprayer. The others offer easy to install with a choice of skid or pin-mountings. Customers can choose between diaphragm and centrifugal pumps; a choice of one manual and two electronic-lift

## Longevity of service

Curt Hart, Alderwood Landscaping, Mead, WA

**Big trucks:** "We have a couple of Ford one tons, a one-and-a-half ton, and we also have an International that is rated at 48,000 lbs. GVW."

**Important factors:** "We look for how long its going to last in our fleet. For that reason we go with the bigger trucks and choose diesel engines. The diesels last longer and have more power. We look for whatever truck is going to give us the best value for durability, whether its a Ford or any other make."

"We like the dump capable flat-beds or stake-beds."

**Builds racks:** "We build our own racks for the sides of the trucks. They're removable so that we can get plant material or whatever we are hauling, in and out easier. We don't buy equipment racks or anything else, though."

booms; and boom lengths of 15- or 20-foot. The SDI sprayers come with a host of other features to ensure easy and efficient spraying.

John Deere's *Gator Series* of utility vehicles offer superintendents a utility with a heavy payload as well a low ground pressure to minimize turf damage in sensitive areas. Although available in four and six-

## Smaller vehicles get the job done

Robert Berglund, Superintendent, Pine Crest Golf Club, Sharon, MA

**Price & power:** "We have two Cushman three-wheel Trucksters, two Yamaha's and a new Cushman Hawk. We've also just ordered another Truckster.

Price, strength and reliability were the most important factors in choosing them."

**Versatility:** "We like the Cushman because you can use it for a lot of different things. For example we use it for core-harvesting when we aerate. We use it for general clean-up on the course and other things as well; its just an all-utility vehicle. it has the features we need. I don't think you can beat a Cushman."



The Cushman Hawk comes equipped with a 50-amp alternator for running electric tools.

wheel versions, the six-wheeler provides the weight distribution that many find so important, especially when loaded to its 1,200-pound capacity. It is available with either a gasoline or diesel engine and can reach speeds of 15-mph.

The *Gator* can be set up for many dif-

**Cushman PTO:** "The Cushman's have the hydraulic PTO hook-ups for using the core harvester and 110 AC plugs so we can use electric trimmers and stuff like that. The new Truckster that we have on order also has the hydraulic plug-ins for hydraulic tools. We don't have any hydraulic tools at this time, but we'll be looking into that."

ferent uses including as a fire fighting vehicle that can handle emergencies in stadiums or on the course until help arrives. Options for the Gator include: a power dump; a bed liner; a rear towing hitch; a 72-inch front mount blade; seeder, spreader and sprayer attachments; a tail-gate ramp; back-up alarm kits; alternate fuel conversion kit; and equipment racks from Green Touch Industries.

Kawasaki's *Mule Series* range from the 550 which can fit in the back of a full-size pickup truck, to the 2520 Turf model. The 2520 is powered by a 617cc V-Twin engine, has a payload capacity of 1,330-pounds and a towing capacity of 800-pounds. Each model comes with a dual-mode differential that can be unlocked to minimize damage to turf, or locked to provide better traction.

Among the *Mule's* many features are: a continuously variable belt-drive transmission; a dual mode differential; full four-wheel suspension; high flotation, low pressure tires; noise insulated engine compartment; and a tilt steering wheel. In addition to the standard tilt-bed, stake-bed gates are available as are cargo baskets, toolboxes and tool holders. To keep things secure and out of the weather a locking van box is also available.

The *Groundforce 150*, new from The CheTech Company this year, has an impressive 1,500-pound payload which is moved with the help of 16-horsepower Vanguard V-Twin engine. The drive system uses an infinitely variable clutch and a Dana automotive-type transaxle for smooth operation and fingertip shifting. A dual tubular frame chassis with dual front and rear shocks provide a smooth stable ride as well. Options include a heavy-duty alternator; hydraulic bed lift; modular cab enclosure; and lighting package.

Columbia Par Car produces the *Util-*

*truck Series*. The *Util-truck* is available in both gas and electric versions. The GUXB uses a nine-hp engine that gives the vehicle a top governed speed of 15 mph (the GU4 electric version attains the same speed). Payload capacities range from 1,100- to 2,400-pounds and come with a variety of dump and flatbed cargo options. Options include van enclosures; dump beds; back-up alarms; suntops; and a direct tracking trailer with a 1,000 pound capacity.

Toro manufactures the *Workman* utility vehicles.

and top-dressing, to tree and aerial work. It can be fitted with a variety of hydraulic, pneumatic and electrical power units for using power tools of all types.

Some of the *Workman's* options include a choice of gas or diesel engines; dump, flat and stake-beds; spreaders, aerators and core harvesters; remote hydraulic and PTO kits; elevating work platforms; and a variety of different sprayer options, to name a few.

Smithco's *Red Rider* has been around for quite a while, and probably will be for some time to come.

The *Red Rider* has been providing superintendents with a versatile, low-cost utility vehicle for years. Using a tricycle design and low-to-the-ground rear bed, it is excellent for transporting mowers and personnel from one job to another. It comes fully-equipped from the factory except for an optional lighting package.

Equipment authority Daniel Ingham resides in Desert Hot Springs, Calif.

These versatile utilities come in two and four-wheel drive versions, can reach speeds over 20-mph, and have payload capacities up to 2,500-pounds. The *Workman* can be configured to perform an almost endless variety of functions ranging from spraying



The Che Tech Groundforce 150 is equipped with an automotive style transaxle.



The Kawasaki Mule routes its air intake through the roll bar to keep clean air going to the engine.