The STMA, sportsTURF and Beam Clay introduce the 1997 College Baseball Diamond of the Year: the field of Al Worthington Stadium on the campus of Liberty University. Courtesy: Brock Van Faussien

plugs of Vamont bermudagrass each June, then slice and mat drag it in.

"We also sprig Vamont into the high wear areas. The Vamont plugs are pulled from our other fields to cut expenses. This provides a thicker bermudagrass base and a better look to the field. But during the harshest winters, we lose some, or even all of the Vamont."

In early October, the field is core aerated in four directions. It’s overseeded with a blend of perennial ryegrasses and one bluegrass cultivar. The crew applies seed at a rate of six lbs. per 1000 sq.ft. using a drill seeder. They set the blades at a one-inch depth and cross the field at 30-degree angles. They drag in the cores and thatch, and remove excess material once the young plants emerge.

Johnson notes, "We don’t try to phase out the cool-season grasses, because we need to keep all of our options open for active growth in fall and spring. Our bermudagrasses don’t begin active growth until mid to late May in a ‘normal’ year.

"We mow almost every day during the growing season, using a triplex reel mower. We alternate directions at each mowing, and change the patterns frequently to keep the turf upright. Mowing height for play ranges between 1-1/4 and 1-1/2 inches. If growth patterns allow, we drop to one-inch for a week or so once play ends to encourage the bermudagrasses."

As a private school with a ‘somewhat limited’ budget, the field-care program must look to outside sources - not only for the ‘extras,’ but also for many of the necessities. Johnson notes that some of the coaching staff and former players with time in the Major Leagues have made significant dona-
top fields up to speed is an ongoing process.

Johnson adds, “To maintain any good facility takes a good working relationship between the end user and the care providers. We have that here, especially with baseball. They understand that what we do makes a difference and they appreciate it. The Al Worthington Stadium field is very important to them and it’s very important to us.”

Coach Pastors adds, “Success builds on itself. Each time field conditions improved, that became the standard to build beyond. The award and the recognition it brings present another set of challenges. To make the field worthy of the award, we need to maintain and exceed the standards met to receive it - and we’re all dedicated to making that happen.”

Players take an active role in maintaining the award winning field. Many who are continuing their degree programs after completing four years of play join the daily maintenance crew to remain involved.

Courtesy: Brock Van Faussien

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Plan of Attack

The basic maintenance plan

**Fertilization:** The fertilization program and pH adjustments are based on soil test results. Soil testing is done every three years. If problems arise, testing is done annually.

Fall fertilization is done three times a year, in September, October and November. The crew uses a 30% slow-release, complete fertilizer. They spread a total of 4 lbs. of N per 1000 sq.ft. per year. Spring fertilization is done in March at the rate of 1/2 lb. of N per 1000 sq.ft.

During the summer, light applications of nitrogen are used to encourage the bermudagrasses.

**Aeration:** Core aeration is performed once a month from April through November. The crew covers the field in at least two directions each time. They verticut once each summer, and use deep tine aeration every third year as compaction levels warrant.

**Pest control:** Split applications of Dimension herbicide for preemergent crabgrass control are used in conjunction with a three-way broadleaf herbicide, the first in March and the second in May. The crew monitors for grubs and red thread, and uses IPM methods with control products only as needed.

Mound and skinned area standard maintenance

**Daily procedures:** The bullpen, practice and on-field pitching mounds are reconditioned, as are the batting boxes. The skinned area is dragged and watered, the warning track is dragged, and the infield turf bordering skinned areas is swept to prevent lip build-up.

**Other procedures:** Base lines and batter’s boxes are chalked for each game; also, the bases, homeplate and the pitching rubbers are painted for each game; foul lines are painted as needed; and infield and warning track turf edges are edged monthly.

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S
pring has arrived, and more
people will be outdoors enjoy-
ing the warm weather. Man-
agers of sports turf will want the
sites they maintain to be in top condi-
tion for spring use. One important
management concern for spring is
weed control.

Weeds affect our recreational activ-
ities in a number of ways. Weeds
reduce the aesthetic value of our
parks, golf courses and ball fields. But
they have other impacts besides effects
on turf appearance.

Some weeds, such as sandbur,
pose a hazard to people walking bare-
foot in turf areas. Weed flowers can
attract bees, posing a hazard to those
sensitive to bee stings. Poison ivy
causes a skin rash in sensitive indi-
viduals. Common ragweed pollen
causes allergies in late summer,
when the plants are in bloom. Weeds
growing on golf greens can affect play
by altering ball movement. Weeds
growing in cracks are a problem in
tennis courts. They block water flow
in drainage ditches, and interfere
with swimming and boating in our
lakes and rivers. Weeds can harbor
insect and disease pests, which then
can move to desired plants.

For these and other reasons, man-
gers need to develop a weed man-
agement plan for properties they
maintain. An
important component of
such a plan is weed identification.
One must know the major weeds pre-
sent at each site.

Why is this important? Weed iden-
tification will be our guide when
choosing chemical control options and
determining time of application. Weed
identification can also point us to situ-
ations that can be corrected through
cultural control strategies.

**Weed identification**

Weeds can be divided into grasses,
grass-like plants and broadleaf weeds.
The grass family includes common
weeds, such as crabgrass, goosegrass,
annual bluegrass and dallisgrass. The
grass-like group includes sedges, rush-
es and certain members of the lily fam-
ily. Prostrate spurge, common chick-
weed and dandelion are examples of
broadleaf weeds.

One needs to be able to separate
these plant groups. The herbicides we
use for grass control generally have no
effect on sedges; and, conversely, most
of our sedge herbicides have no effect
on grasses. Further, the postemer-
gence broadleaf herbicides will not
control grasses.

Crabgrass is a common weed that
belongs to the grass family. It is classified
as an annual, and can be controlled quite
well with preemergence herbicides.

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**Crabgrass**

How do we tell these plant groups
apart? Grasses have narrow leaves
with parallel veins, and the leaves are
two-ranked. Stems are either round or
flattened. The root system is fibrous.
Sedges are similar to grasses in that
their leaves are long and narrow with
parallel veins. But sedges have trian-
gular stems, and the leaves emerge
from three sides (three ranked).

Rushes generally have round stems,
and primarily occur in aquatic sites or
other moist areas. Weedy members of
the lily family include wild onion, wild
garlic and greenbrier.

Grasses, sedges, rushes and lilies
are all monocots. When these plants
germinate from seed, they have one
seed leaf (cotyledon). In monocots, the
flower parts occur in threes - for exam-
ple, three petals and three sepals.

Broadleaves are dicots - they have
two seed leaves at germination. Dicots
generally have broad leaves with net-
ted veins. Don't be fooled by this, cer-
tain broadleaves, such as buckhorn
plantain, have somewhat narrow
leaves. The root system of
broadleaves is characterized by a tap-
root, and flower parts occur in twos,
fours or fives.

It's a good idea to have at least one
weed identification guide on your
shelf. Listed are some of the guides I
use:

- **Weeds of Southern Turfgrass**, the
  Cooperative Extension Service,
  University of Georgia, Athens, GA.

- **Weeds of the Northeast**, Cornell
  0-8014-8334-4.

- **Weeds of the West**, Pioneer of
  Jackson Hole, Jackson, WY, ISBN 0-
  941570-13-4.

**Weed life cycle**

While we need to be able to identify
our major weeds, we also need to
know their life cycle. Weeds can be
classified as annuals, biennials or
perennials. The ability to distinguish
between the different types becomes
important when selecting methods of
control.

Comparing crabgrass control with
bermudagrass control in turf provides
a good example. Crabgrass, an annual,
can be controlled quite well with pre-
emergence herbicides. Perennial
Weeds are generally not controlled by preemergence herbicides. As a general rule of thumb with some exceptions, we use preemergence herbicides to control annual weeds and postemergence herbicides to control perennials.

Annuals must germinate from seed each growing season. This category can be divided into summer annuals and winter annuals. Summer annuals germinate in spring and early summer. They usually die off with the first frost. Winter annuals germinate in fall or early spring, and die off with the onset of hot, dry weather in late spring or early summer.

One needs to know when a weed germinates to set the timing of herbicide application. A crabgrass preemergence herbicide applied in March is long gone by the time annual bluegrass is germinating in September. Preemergence herbicide applications for winter annual weed control must be made in August; but for summer annuals, these chemicals must be applied in March or April.

Examples of summer annual grasses include large crabgrass, goosegrass and yellow foxtail. Common summer annuals in turf are prostrate spurge, prostrate knotweed and lespedeza. Annual bluegrass and annual ryegrass behave as winter annuals. Common chickweed, henbit and corn speedwell are examples of winter annual broadleaves.

Biennials take two years to complete their life cycle and spread strictly by seed. They germinate from seed, produce a rosette the first year, and then flower in the second year. Plants die after flowering. There are only a few biennials, and they are broadleaves. Examples include wild carrot, musk thistle and common mullein.

Perennials live for many years. Simple perennials, such as dandelion and plantain, spread strictly by seed. Creeping perennials, like bermudagrass, white clover and yellow nutsedge, spread vegetatively by rhizomes, tubers or stolons, in addition to being spread by seed. Important perennial grass weeds include dallisgrass, quackgrass, nimblewill and bermudagrass. Yellow and purple nutsedge are common perennial sedges in turf, especially in wet sites. Ground ivy, common blue violet and Virginia buttonweed are examples of perennial broadleaves.

Weed management in turf

The three main weed management strategies are cultural, biological and chemical control. At present there are very few biological control options for weeds, so this strategy is essentially not an option for sports turf applications. This is an active area of research, so we may see development of specific insects or diseases to suppress weeds in the future. But for now, turf managers must rely on a combination of cultural and chemical control for weed problems.

The goal of cultural control is to allow turf to compete with weeds more effectively. Choose a turf variety that...
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