Southern California Turfgrass Culture

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THE USE OF GROUND COVERS

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The rapid increase in land values, together with the increasing population pressure in California, is causing more and more building on rough and hilly terrain. As a result the interest in ground covers is increasing, since many of them are adapted to slopes on which grasses could not be mowed. Some of the bedding plant growers have developed a specialty of producing both annual and perennial ground cover plants and offer extensive lists. There has also been considerable interest in erosion control plants, for in spite of a long succession of dry years in California, there has been enough damage from water to create a demand for this type of planting.

The whole subject of ground covers is somewhat controversial, and widely divergent opinions may be found among competent horticulturists. Some of the qualities of these plants have not been accurately evaluated by experimental work. In general, we would recommend restricting the use of ground covers to situations where they are uniquely adapted and where turfgrasses do not meet the requirements.

A tour of the best residential districts of Los Angeles and Beverly Hills indicates that ground covers are having a great surge of popularity, and that often they are used on wide, level expanses where we would normally expect to find grasses. We are inclined to believe that they are being used in some places where standard turfgrasses would actually be less expensive and more satisfactory.

New trends in gardening are increasing the use of ground covers. A current gardening fashion, "mound gardening," is growing rapidly, since it reduces traffic noises, dust and fumes from busy thoroughfares, and increases privacy. This type of gardening necessarily makes large use of ground covers. "Mound gardens" probably represent the modern equivalent of the moat around a medieval castle, and are an interesting evidence of the increasing need for protection against some of the less desirable features of the machine age.

Another tendency in landscaping which is encouraging the use of ground covers is the frequent use of large boulders, statuary, and various architectural features which break up areas in a manner that prevents regular machine maintenance of grasses impractical. Ground covers often blend in very well with structural features of this type. Actually the architectural emphasis in gardening has gone so far that ground covers are often eliminated in favor of crushed rock in various textures and colors. The late Peter Riedel of Santa Barbara as a landscape designer was a generation ahead of his time in the use of crushed stone. For a time he operated a quarry which produced a beautiful red crushed stone which was used on some of the large estates of Montecito.

V. T. STOUTEMYER

FOOT TRAFFIC

Only a few of the ground covers can stand foot traffic. Among these are dichondra, the sedges, and lippia. The best known is perhaps dichondra. Widely divergent evaluations of its worth can be encountered. Nevertheless, the use of dichondra is speedily increasing, even to the point of creating occasional shortages of seed. Dichondra is being spread naturally from lawn to lawn. In another decade or two it will probably be found as a lawn weed

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almost everywhere, and therefore we believe that careful experimental studies should be conducted on it.

Doubtless too much has been claimed for dichondra by some of its enthusiastic partisans. It does not represent an easy solution to all lawn problems, and it does require some maintenance and adequate fertilization. It does not resist invasions of some weeds such as oxalis and euphorbia very well. It should be mowed occasionally. Regular watering is needed, in fact, more than with some of the grasses. It requires better-than-average soil, and regular applications of nitrogen. Dichondra is vulnerable to attack by soil nematodes, and it can also be attacked by fungus diseases, particularly if it is unclipped and a large mat of foliage is allowed to pile up.

The subject of dichondra is too large for extensive treatment here. It is particularly valuable in small areas in shade. We believe that a mixture of dichondra with bermudagrass has possibilities which should be studied. Apparently infrequent watering favors the bermudagrass and frequent watering, the dichondra. In this manner, the mixture can be kept in balance.

A vast field for experimentation on ground covers which will stand tramping is in the sedges. Only a few of these have been used as grass substitutes. Some years ago a tropical sedge, *Kyllinga brevifolia,* had a short vogue which disappeared when it was found that it lost color badly in the winter. Another interesting sedge from Queensland is *Cyperus gracilis,* which has been used with great success for lawns in Hawaii. This sedge grows well in southern California, but likewise turns brown under winter frost. Recently we have found a sedge from the Lower Mississippi Valley, *Carex texensis,* invading several locations in California. We believe this sedge may have more promise than the other two, because of greater hardiness. At one location in Hollywood it has carpeted ground under palms under rather unfavorable soil and light conditions.

One unclipped ground cover which will stand foot traffic and which has been popular in past years is lippia. Luther Burbank introduced and disseminated several distinct types of lippia. This plant has proven to be very adaptable to poor soils and restricted water. It spreads rapidly from runners. One of the most serious disadvantages of lippia as a ground cover is that the flowers attract hordes of bees, which may present considerable hazard to children. Lippia will grow in full sun or partial shade. Mowing occasionally will help to prevent the formation of the mat. It is drought resistant, but does best with water and fertilizer. Probably lippia deserves some of the attention that has been diverted to dichondra.

SUCCULENTS

Succulents, especially ice plants, provide much good material for ground covers. The California Highway Department has for many years used the larger forms of ice plant for planting on cuts along the highway. Most of the ice plants are somewhat tender to frost, but a few will stand temperatures of severe freezing.

Many of the sedums likewise are tender to frost, but there are a few sorts which are hardy. The *mesembryanthemums* or ice plants provide a wide range of brilliant colors, frequently somewhat seasonal. One of their disadvantages is the tendency to catch and retain papers, leaves and other litter.

SHRUBS

The low-growing shrubs are often excellent as ground covers. Some of the new dwarf selections of the Natal plum, *Carissa,* are outstanding for areas not subject to severe frosts. The various species of *Correa* are outstanding and will endure more cold. For coastal areas a number of prostrate species and varieties of the shrubby veronicas or hebes are excellent, particularly *Hebe menziesi, Hebe buxifolia,* and *Hebe chatamica.* There are a number of prostrate cotoneasters and pyracanthas which can be used as ground covers, although they are not nearly as popular in southern California as they are in the Pacific Northwest. The rock roses, the helianthemums and cistus which are available in many species and hybrids should not be overlooked for hot dry banks. Some of these can be grown in southern California without irrigation, after watering to establish well. They provide attractive foliage and long seasons of flowers in a variety of interesting colors.

A number of rather rampant shrubs which will cover considerable space on dry banks can be used where it is not necessary to keep planting low. One of the best of these is *Plumbago capensis,* which provides attractive foliage and a wealth of blue flowers in summer. This shrub needs very little water.

CALIFORNIA NATIVES

Several California native plants have been used as ground covers in recent years. One of the native strawberries, *Fragaria chiloensis,* makes a dense covering for either sun or shade, but will not stand much foot traffic. The Rancho Santa Ana Botanic Garden recently released an interesting dual purpose selection, Hybrid No. 25, which gives a fair crop of usable berries and also provides a good ground cover. This garden also pioneered in the use of the prostrate form of *Baccharis pilularis.* The prostrate varieties of ceanothus, such as *Ceanothus gloriosus* and *C. griseus horizontalis* have been very popular because of their rapid growth and ability to do well under restricted watering. However, they may deteriorate and die out in time. The Saratoga Horticultural Foundation has been breeding and selecting superior longer-lived types of prostrate ceanothus and we may hope for better material of this type in the future. Some of the many native wild buckwheats or eriogonums are drought resistant and attractive.

CONIFEROUS EVERGREENS

Coniferous evergreens of the prostrate types make

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good ground covers but the initial cost is rather high, and they do not always do well in areas where there is much reflection of the sun and heat from adjoining structures. Personally, we think that often other plants are better adapted to southern California. This again is a purely personal prejudice. One advantage is that there is a sufficient selection of types which will do well in high mountain areas.

WOODY VINES

Some of the woody vines make excellent ground covers. Doubtless the list could be greatly extended for the milder areas of California. *Trachelospermum jasminoides* has been outstanding as a ground cover and produces a wealth of very fragrant white flowers. We have seen a planting of *Distictis* var. "Rivers" which looked very promising. Some of the pandoreas and certain varieties of bougainvilleas make excellent ground covers. The Australian bluebell, *Sollya heterophylla,* has attractive, refined foliage and is exceedingly resistant to drought. Unfortunately, this plant is somewhat susceptible to nematodes if they are present. *Vinca minor* has been successful in light shade, with good soil moisture. English ivy does well only with adequate shade and should be in the cooler coastal areas. Algerian ivy, *Hedera canariensis,* is better for sunny and warmer situations. Both the plain and white-variegated forms of Algerian Ivy are used as ground covers. Ivies are dependable but sometimes bermudagrass invades them in sunny places. *Philadelphus mexicanus (P. karvinskyanus)* makes a dense evergreen ground cover which gives attractive white scented flowers at certain times of the year. The Japanese honeysuckle is a rampant trouble-free ground cover if it is given irrigation, and has some erosion control value.

HERBACEOUS PERENNIALS

One of the very best ground covers for hot dry banks is the prostrate rosemary. This roots readily from cuttings and covers space rapidly. Although they have not been used very much, some of the thymes would seem to deserve more attention. Probably the finest foliaged of all is *Thymus serpyllum.* Some of the types available have attractive odors of the foliage or interesting variegation of the leaves. They are native to areas with Mediterranean climate, and with proper selection doubtless forms could be found which would be quite satisfactory as ground covers. A ground cover which has had considerable publicity recently from the Gulf Coast States is *Mondo japonica.* There are several species of this plant which vary in size and height. One of the disadvantages of *Mondo japonica* is the scarcity of planting stock and the rather high prices which are charged for it. An extensive front lawn in Sierra Madre has been planted to *Mondo* and it has made an attractive ground cover. Another disadvantage of *Mondo* is that it tends to collect and hold leaves and other debris. The large tuberous swelling on some of the roots of this plant are natural and should not be mistaken for nematodes.

A dwarf smartweed, *Polygonurn capitatum,* has been very successful in southern California. The Santa Barbara daisy, *Erigeron mucronatus,* spreads well on dry banks and provides many attractive small flowers. The Mexican primrose, *Oenothera childsi,* is somewhat weedy but has a long season of pink flowers and is commonly seen.

Several fine textured perennials give somewhat the appearance of a grass or moss and can be very attractive in small areas. One of these is *Sagina procumbens* which is occasionally found as a weed in lawns and putting greens, more often in northern California or the Pacific Northwest, but occasionally here in southern California. This has sometimes been sold as Irish moss. It has occasional troubles from diseases, but on the whole is reasonably reliable. Somewhat similar in effect are the Arenarias and several of the Armerias or sea pinks.

One disadvantage of many of the very attractive herbaceous ground covers is that they have a tendency to become overgrown in a few years and require replanting. Typical examples of this are the ivy geraniums, which are particularly showy in the south coastal areas of the state near the ocean. These are susceptible to frost and give a great deal of color. Several years ago the home owners on one of the streets of Pacific Palisades agreed to plant ivy geraniums. This planting provided a notable spectacle of color, but it has begun to thin out somewhat, possibly because of the effort involved in keeping the planting effective.

The trailing purple lantana has been outstanding on dry banks and difficult slopes. It produces an abundance of attractive lavender flowers during most of the year. Recently yellow hybrid forms which are similar in growth habit have been introduced. Several varieties of *Ajuga repens* are available, including a variegated form, a giant-leaf type, and a bronzy-purplish type. They are highly satisfactory with an abundant supply of water. They do best in some shade. Light fertilization should be given at regular intervals. A mowing off of the top once each season will be beneficial.

The bergenias are attractive winter flowering perenniels which require little care and give a long season of bloom. Lavender-pink flowers are provided bv *B. crassifolia* or *B. cordifolia,* and a white species, *B. ligulata,* has been introduced in recent years. Several of the trailing veronicas such as *Veronica filiformis* and *V. pectinata* are good ground covers, and there are other species which are well known to rock gardening enthusiasts in parts of the country where the climate is more favorable *to* this type of garden activity. The gazanias are attractive but must, however, be used in relatively frost free areas. *Primula malacoides* and *P. obconica* are good for sheltered spots. Cyclamen would be seen more often if the plants were not expensive. *Lotus berthelotii* covers ground rapidly and provides interesting red flowers. A similar species with yellow flowers is

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Lotus mascaensis. They are adaptable only to the milder areas.

ANNUALS

Where labor is available for gardening, very attractive ground covers may be made with some of the annual plants. Many of the California wild flowers make excellent ground covers, providing weeds are pulled. Fumigation or drenches to sterilize soil would doubtless be helpful before planting seeds of this type. Among the annual flowers which may be used, the alyssums are outstanding for length of bloom and dependability. In fact, in California they sometimes naturalize almost to the point of becoming a weed. In the whites a good strain of the old variety Carpet-of-Snow is excellent. A tetraploid form, Snowdrift, is tall and can even be used as a cut flower. Several excellent purple and violet varieties have been introduced, among them Royal Carpet. Some of the dwarf, low-growing ageratums in several varieties are also excellent as ground covers. Many of the varieties and species of pinks and carnations are good, but require occasional renewal to present a satisfactory appearance. English daisies, forget-me-nots, dimorphothecas, lobelias, dwarf marigolds, nierembergias, pansies, violas, petunias, annual phlox, portulaca, verbenas, violets, are among the many flowers usually handled as annuals which can be used.

UNCLIPPED GRASSES

Certain unclipped grasses make useful ground covers. One of these is the blue strain of Sheep's fescue, *Festuca ovina glauca,* which is propagated vegetatively by breaking up the clumps. Some interesting patterns can be worked out with fescue. One other grass which has sometimes been used for an unclipped lawn is so-called velvet or Korean grass, Zoysia tenuifolia. Apparently this is not as widely used as formerly because with age the appearance of the very thick irregular mat tends to become less desirable.

CARPET BEDDING

Carpet bedding was once exceedingly popular in an age when labor was not expensive. Today it is seen occasionally in parks, where formal emblems or even messages are worked out in it. Such plants as *Alternanthera* and *Santolina* are used to form the designs. Some of the succulents are also quite useful in this work. However, the large initial expense and the constant maintenance which is necessary tend to restrict its use.

EROSION CONTROL

Several landscape contractors have specialized in erosion control work and have worked out special methods of planting and establishing plants on hillside areas. One operator has a method of wrapping cuttings of ice plant in sphagnum moss, which is held on with a twist of wire, and is planted in the soil. This helps to get the cutting started on rather steep slopes. Although plant cover is important in erosion control, it cannot handle really steep slopes and often special diversion channels, or retaining walls are necessary. The use of such devices as straw pegged down under chicken wire may be needed, at least while the plants are getting started. Such plants as ice plant and geraniums will break the force of rain and prevent surface erosion. However, as observation after certain periods will reveal, this does not prevent land slippage. Unquestionably such aggressive, deep-rooted plants as *Plumbago capensis* and some of the bush acacias and Japanese honey suckle have a distinct advantage for these situations. Some of the California native shrubs such as the sumacs should not be overlooked, although some of them can create a fire hazard in certain areas where they are maintained dry through the summer.

Erosion control is a complex subject which requires considerable experience and specialized knowledge. The value of plants on favorable sites is great; but on difficult terrain, they have often been over-estimated.

SUMMARY

Our personal viewpoints on ground covers can be summarized in the following propositions:

1. Ground covers are not competitive with grasses but largely fulfill quite different functions.

2. Only a very few ground covers will stand foot traffic.

3. Ground covers may succeed where grasses would be completely impractical.

4. Maintenance costs for ground covers often are as high or higher than for turfgrasses. Many of them require periodic renovation or replanting.

5. Large expanses of turfgrasses often seem to us to be more restful and satisfying than ground covers. This is a purely personal opinion which may not be valid for others.

6. Ground covers can provide endless opportunity for having a variety of texture and color. In the mild climate areas the choice of plant materials is particularly large.

7. In cold areas, the list of ground covers is greatly restricted, but some excellent choices are available.

8. Ground covers are useful in erosion control, but cannot handle conditions which are beyond certain limits.

RECENT GIFTS

Athletic and Recreational Turfgrass Association, California - $150.00

U. S. Golf Association Green Section:
To Department of Floriculture and Ornamental Horticulture - $500
To Department of Irrigation and Soils - $300

WEED CONTROL IN DICHONDRA

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The best method for control of weeds in Dichondra is one of preventing the initial infestation.

Most soils have innumerable weed seeds present, the viability of which must be destroyed prior to the planting of a Dichondra lawn.

This should start with the early working of the planting site in which the soil is prepared by whatever means of tillage necessary, soil amendments added, and the final grade of the site struck. A program of irrigating up the weeds for a period of not less than two weeks should then follow. Several materials may be used to destroy the weeds which appear - depending upon the nature of the weed. They may be newly germinated seedlings of innumerable weed species which can be readily controlled with a contact weed spray. If the emerged weed is a vegetative regrowth from an already established perennial, such as wild morning glory, dandelion, oxalis, plantain, nutgrass or bermudagrass, etc., then control measures must be more stringent and will require a longer time for application and for subsequent waiting. A sufficient growth period must elapse before concluding that no perennial weeds are present. Further, once the grade of the area has been struck it should not again be disturbed other than for the breaking of a soil crust not to exceed one-fourth inch in depth for seed bed preparation only. Table I indicates the materials which might be used in a pre-planting weed treatment.

TABLE I

Materials for Killing Weeds in Dichondra Site Preparation

NATURE OF WEED	MATERIAL AND RATE	WAITING PERIOD REQUIRED	REMARKS
All grass and broad-leaved seedlings (no perennials present)	Calcium cyanamid 1 lb./10 sq. ft.	3 weeks (watered frequently)	Excellent nitrogen fertilizer
	Fortified Diesel or weed oil to wet all seedling leaves	None	Allow weeds to die withou disturbing the soil
	Premerge* or other contact killers	None	Allow weeds to die without distrubing the soil
Perennials with rhizomes or deep taproots or regenerating underground parts	Methyl bromide 1-2 lb./100 sq. ft.	48 hrs.	Leakproof tarp required. Soil porous and moist before application
	Vapam l-2 qts./lOO sq. ft.	7-10 days	Soil porous and moist before application. Second treatment may be required.
Perennial grasses	Dalapon** or TCA***	3-4 weeks	Frequent watering to leach material from soil prior to planting. Best to spot treat
Broad-leaved or susceptible perennials (morning-glory, plantain, dandelion, nutgrass, English daisy)	2,4-D, 1 oz./2500 sq. ft.	3-4 weeks	Moist soil and warm weather causes breakdown of 2,4-D. Best to spot treat

* ***Premerge - proprietary contact weed killer***

** ***Dalapon - proprietary weed killer, effective mainly against grasses***

*** ***T C A - sodium trichloroacetate, effective mainly against grasses***

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Properly applied, these herbicides should give adequate control of 95% or more of the weeds which would otherwise appear. Certain materials listed cannot be used within the dripline of established ornamental trees or shrubs without possible injury to them. In all instances the manufacturers' recommendations should be carefully followed.

Weed control in an established Dichondra turf presents a problem in that the hormone weed killers cannot be used because Dichondra is sensitive to them. Unconventional methods and materials must therefore be used. There is no better control for weeds than the following of proper cultural practices. Foremost of these is correct watering, which will do much to combat the number one weed - crabgrass. In all areas and on all soils Dichondra can readily stand an irrigation frequency of three to five days provided the soil is wetted to a depth of six to eight inches. Daily light watering encourages the establishment and growth of this summer growing grass.

Second in proper management is the frequent (monthly) light feeding of the Dichondra with nitrogen for the encouragement of its vigorous vegetative growth. One pound of actual nitrogen per 1000 sq. ft. with a complete N-P-K fertilizer, applied in the spring will help to prevent bare spots.

Third is the timely application of insecticides and fungicides for the control of insect or fungus attacks, which further weakens the sward and permits weed encroachment.

Occasional hand weeding of invading weeds is necessary, particularly when they are small in numbers and have not set seed. Crabgrass in Dichondra can be controlled at all stages of growth by several materials. These are listed in Table II.

TABLE II

Chemicals Used for the Control of Crabgrass

MATERIAL	TIME OF APPLICATION	RATE OF APPLICATION	REMARKS
Lead arsenate	Prior to germination of crabgrass in late winter	10-15 lbs./1000 sq. ft.	Timing is important. Lead arsenate may be rendered ineffective in certain soils
Disodium methyl arsonate, liquid or dry form	At any stage of growth prior to seedhead formation	According to label on package	Dichondra is tolerant. Second or third application may be needed

The tolerance of Dichondra to small amounts of substituted proprietary urea compounds (Telvar W or DW, or Karmex W or DW), which are ordinarily used at high application rates for complete soil sterilization, permits the selective removal of yellow oxalis and of grasses other than crabgrass, bermuda and kikuyu grass. Care must be taken that not more than two ounces of 100% material is applied uniformly over an area of 2,500 square feet.

Other weeds which cause trouble in established Dichondra stands are the prostrate red spurge or milkweed, and of weedy veronicas in the summer and of chickweed in the winter. These can be controlled, preferably before they set seed, by the drastic application of a contact weed killer (see Table I), over the infested area. Although the above-ground portion of Dichondra will be killed it will regenerate within a couple of weeks from the extensive below-ground rhizome or stem system which possesses regenerative buds. This type of spray should not be applied to Dichondra which is less than one year old, or which has not developed its normal underground rhizomes.

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FINE-LEAVED FESCUES AS TURFGRASSES IN SOUTHERN CALIFORNIA

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The fine-leaved fescues, *Festuca rubra,* creeping red fescue and *Festuca rubra var. commutata,* Chewing's fescue are grasses of exceptional beauty and are used in many high quality lawn grass seed mixtures. However, these varieties have been recognized for many years to be poor performers under normal lawn conditions in the Southwest.

A collection of fescue species and strains was grown and observed at the UCLA test plots during 1956. Some of these strains are available commercially while others are breeders samples or new introductions. A preliminary evaluation of these strains may be of interest to many in the turfgrass industry.

In the summer months these plots were subjected to heavy disease attacks which brought out striking differences in degree of disease tolerance. The following disease organisms were observed: *Rhizoctonia, Helminthosporium,* and *Pythium.* A heavy infestation of nematodes was also noticed but it is not known whether or not these were of types which attack grass.

COMMERCIAL CREEPING RED FESCUE, *Festuca rubra*

This is the unselected creeping red fescue used in many lawn grass mixtures. It is somewhat variable in texture and color. *Festuca rubra* has a creeping growth habit by well developed rhizomes (rootstocks). Because of this habit of growth it forms a dense turf in the areas where it is adapted. At the UCLA plots it did not make a dense good quality turf at any time. Disease injury was severe during the warm season. By the end of the summer the plot had been invaded by weeds and bermudagrass.

ILLAHEE FESCUE, Fescuca rubra

The Illahee strain of creeping red fescue made a beautiful turf during the spring and early summer. This strain is characterized by extremely fine texture, bright green color, and high turf density. By mid July large diseased patches had appeared in all plots of this strain. The turf gradually thinned out and by October the fescue was in scattered tufts and much of the area was covered by weeds and bermudagrass. As the weather became cooler some recovery was noticed.

One small plot of Illahee fescue, breeders seed, from Oregon was nearly disease free throughout the summer even though adjacent plots of other fescues were rapidly dying out.

ILLAHEE FESCUE, Oregon Selection

This selection of Illahee fescue, received from the Agricultural Experiment Station, Corvallis, Oregon, appeared to be slightly superior to the above. The growth habit is more prostrate and the color a darker green. It formed a very dense turf early in the season and did not become as thin during the summer months. Recovery in the fall appeared to be more rapid. However, it did not appear to be enough superior to warrant using it in southern California.

RANIER RED FESCUE

The Ranier strain of *Festuca rubra* appears to be quite distinct from Illahee. The blades are wider, producing a slightly coarser textured turf. The color is darker green than Illahee. Early season ratings for turf quality were poorer than for Illahee. However, this variety retained a greater density throughout the warm season and appeared to be decidedly more tolerant of disease. Cool weather brought good recovery of thin or diseased spots. These observations indicate that this strain may be superior to others for use in this region.

PENNLAWN RED FESCUE

This is a synthetic variety developed at Pennsylvania State University Only a small amount of seed was available for planting so the initial stand was thin. Nevertheless the seedlings grew and spread quickly making a dense turf in about two months. Texture and color were similar to that of Illahee. The Pennlawn plots had some disease in spots but appeared to have less than most of the other strains. Except for the small diseased spots the turf remained dense throughout the warm season. This new strain may be of value for the Southwest if it continues to stand up this well under further testing.

CLATSOP RED FESCUE

Clatsop red fescue is a selection used primarily for control of northern coastal sand dunes because of its drought tolerance. Its performance here under lawn conditions was poor. The stand was thin and open at all times and it was severely damaged by disease. The turf was bunchy in appearance.

CHEWING'S FESCUE, Festuca rubra var. commutata

This variety was introduced by an English seed firm about 1833 and first grown by a Mr. Chewing who later sold seed to neighboring farmers. It differs from the creeping red fescues in that it does not have a well developed rhizome. In the turf plots it closely resembled Illahee during the early season but was slightly less dense. Disease damage during the summer was greater than in the Illahee plots and by September practically no fescue remained in some plots.

The Pennsylvania State University selection of Chewing's fescue appeared to be no better under these conditions than regular Chewing's.

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SHEEP FESCUE, *Festuca ovina*

This species is used occasionally for turf purposes because of its tolerance of drought and low fertility. It is a bunch grass and generally does not form a dense turf. It is one of the finest bladed of the fescues and has an excellent bright green color. At the UCLA plots it made a turf of fair density in the spring months but became thin and diseased in the summer.

HARD FESCUE, *Festuca ovina var. duriuscula*

Hard fescue is a var. of *Festuca ovina* introduced from Europe. It has a slightly wider blade than sheep fescue and a more blue-green color. The growth habit is also bunchy. This strain formed a more open turf than sheep fescue but was less affected by disease.

These observations indicate that it may be advantageous to use some of the better performing selected fescue strains such as Ranier and Pennlawn in our lawn seed mixtures for the Southwest. However, the use of these grasses alone or in large proportions in mixtures is questionable for this region.

TURFGRASS CULTURE COURSE OFFERED BY UNIVERSITY EXTENSION

The University of California, Extension, will offer a course in turfgrass culture beginning February 5, 1957. This will be a practical course for grounds maintenance personnel, golf course superintendents, park superintendents, cemetery maintenance personnel, nurserymen, seedsmen, landscape contractors, gardeners, and others interested in turfgrass management.

Subjects to be covered include: botany of grasses, turfgrass varieties, their characteristics, identification, and uses; watering and mowing; soils and soil management; fertilizers and turfgrass fertilization; turfgrass insects, diseases, and other pests, and their control; weeds and weed control; seedbed preparation, seeding, and vegetative planting.

The course will be taught by Victor B. Youngner, Assistant Professor of Ornamental Horticulture, U.C.L.A. The first meeting will be Tuesday, February 5, 1957, from 7:00 to 9:30 P.M. and every Tuesday thereafter for twelve weeks. The classes will be held at the U.C.L.A. Ornamental Horticulture Experimental Area, Building B, 300 Veteran Avenue, Los Angeles. A fee of $18.00 will be charged.

DALLISGRASS CONTROL

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Dallisgrass *(Paspalum dilatatum),* a perennial bunch grass continues to be one of the more difficult-to-control weeds on golf courses. Besides the hand grubbing method of eradication, there are a number of chemicals that will control dallisgrass, but none are selective. Areas under trees cannot be treated with most of these materials and, furthermore, the use of any of these means re-establishing new turf -- which sometimes can be a problem, especially on steep slopes and along ditchbanks.

Preliminary investigations were made during the past summer, starting in late May and continuing through July, in search of some effective and economical controls. The area used was a ditch bank in a rough area at Bel-Air Country Club. The following materials produced complete control of mature dallisgrass but being non-selective, also killed all other turfs.

Materials	Rates
Vapam 4-S	1 application at 1.5 qts./100 sq. ft.
Vapam 4-S	1 application at 1 qt./100 sq. ft.
Sodium TCA	1 application at 8 oz./100 sq. ft.
Dalapon	1 application at 2 oz./100 sq. ft.

Vapam, at the one-quart rate, gave results equal to that at one and one-half quarts per 100 sq. ft. with control within one week after application. Both the sodium TCA and Dalapon required from three to four weeks for complete control. These materials cannot be safely used around trees or shrubs. Calcium cyanamid was applied at the rate of fifty pounds per thousand square feet and resulted in only partial control due to the difficulty encountered in trying to obtain an even distribution of the material on the ditch bank. Repeated applications over several seasons of ordinary Deisel oil has given good control in some areas. This material can be safely used around trees and shrubs. Two other materials tried are safe to use around trees and shrubs but gave partial control only. NIX (sodium isopropyl xanthate at 91%) at a rate of one pound of the active material per 5,000 sq. ft. caused severe injury to all turf. Further trials will be made with this material. Di-met (Disodium methyl arsonate) (18.9%) at one, two, and three times the recommended rate for crabgrass control in four applications each, at seven to ten day intervals, gave partial control. There was some injury to the other grasses at the highest application rate. These last two mentioned chemicals merit further tests as to their effectiveness in controlling seedling dallisgrass.

In order that the information in our publications may be more intelligible it is sometimes necessary to use trade names of products or equipment rather than complicated descriptive or chemical identifications. In so doing it is unavoidable in some cases that similar products which are on the market under other trade names may not be cited. No endorsement of named products is intended, nor is criticism implied of similar products which are not mentioned.