

just in

Station Editor Copy

# Progressive

# Agriculture

# In Arizona



**DON'T  
MISS  
PAGES 6 & 7**

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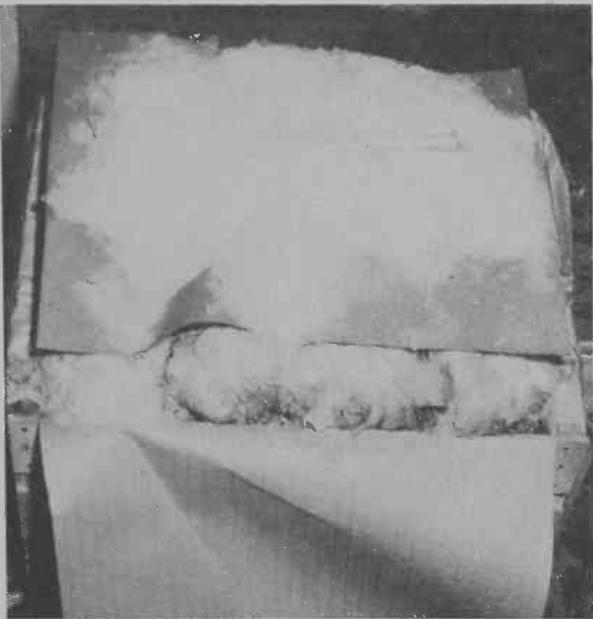
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Old method of packing lettuce in wooden crate with ice.



New method of packing lettuce in carton and then cooling by vacuum.

## Storage of Lettuce - -

### VACUUM-COOLED vs. ICED

By Joseph K. Stewart

Formerly, Department of Horticulture

At any given temperature of storage, there appears to be no appreciable difference in keeping ability of lettuce that has been vacuum-cooled as compared to lettuce that has been iced. With each 10° F. increase in storage temperature, both vacuum-cooled and iced lettuce progressively deteriorate at the same rate and in the same manner.

This is the conclusion drawn from replicated tests conducted by the Uni-

versity of Arizona Agricultural Experiment Station. All lettuce used in the test was Imperial 44, all from the same field, and all trimmed and packed by a commercial crew at a packing shed in the Salt River Valley.

The detailed findings that led to the conclusion are presented in the simple table below.

Appreciation is expressed to the Miller John Co. for its donation of lettuce and crates for this study.

#### RATINGS DURING STORAGE

Method of Cooling	Storage Temperature (°F)	15 days		15 days plus 2 days at 74°F	
		(Before Trimming)	(After Trimming)	(Before Trimming)	(After Trimming)
Vacuum	33	Good	Fair	Fair	Good to Fair
Ice	33	Good	Fair to poor	Fair	Good to Fair
Vacuum	42	Fair	Inedible	Poor	Fair
Ice	42	Fair	Inedible	Poor	Fair
Vacuum	52	Inedible	Inedible	Poor to inedible	Poor to inedible
Ice	52	Inedible		Inedible	Poor to inedible

### WE'RE A LOT BIGGER THAN THAT!

Some gremlin monkeyed with our statistics last summer and the result was a whopping error in the first sentence on page 10 of the October-November-December issue of *Progressive Agriculture*. There are approximately sixty-three million acres

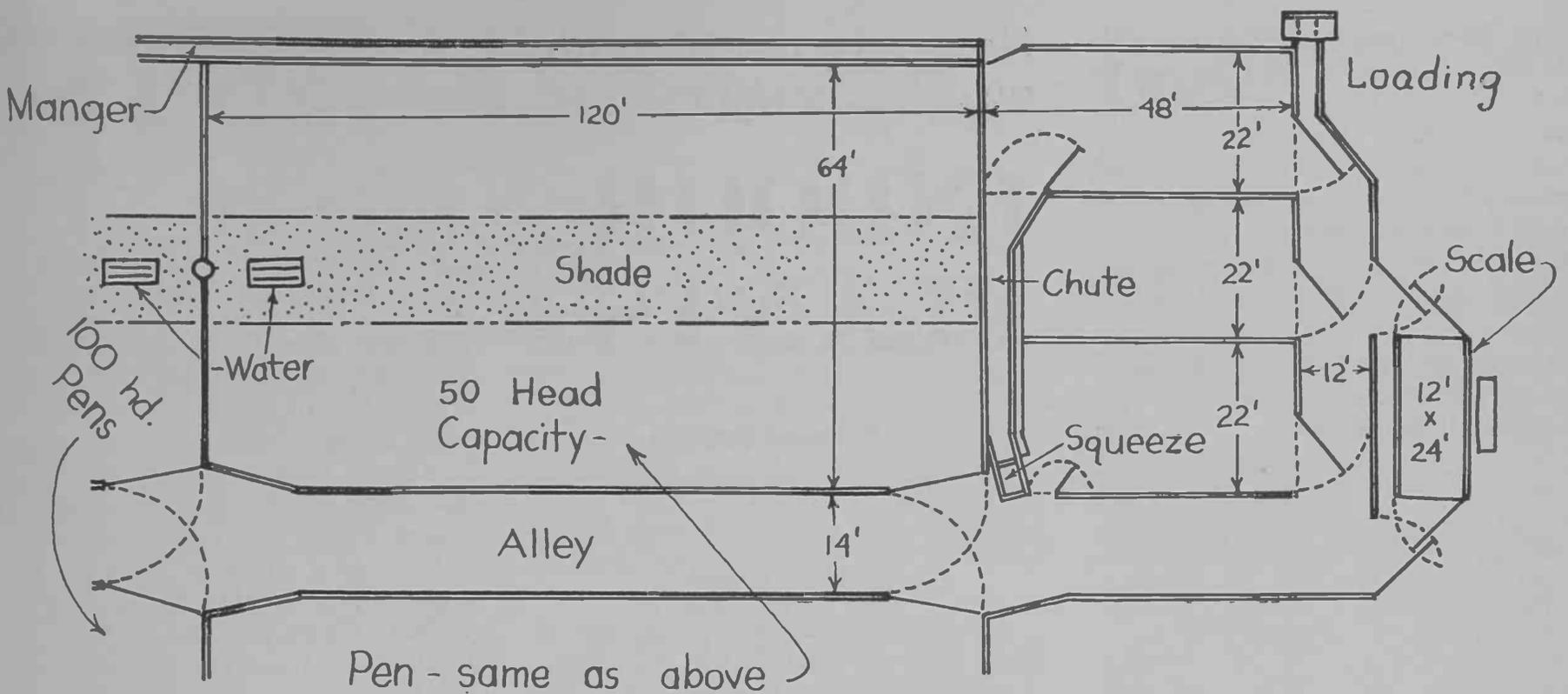
of rangeland in Arizona. Notice that this is 30 times as great an area as reported. If you keep a file of *Progressive Agriculture in Arizona*, as many do, please mark the correction in the previous article entitled "Rainwater Collection for Stock on Arizona Ranges."



- Cochise County  
Wed., 6:30 a.m.—KAWT
- Coconino County  
Tues. and Thurs., 8:15 a.m.—KCLS
- Graham County  
Sat., 10:30 a.m.—KGLU
- Greenlee County  
Sat., 11:15 a.m.—KCLF
- Maricopa County  
Sun., 8:45 a.m.—KOY  
(time may change)
- Yavapai County  
Mon., Wed. and Fri., 8:45 a.m.—KYCA
- Yuma County  
Mon. through Fri., 7:20 a.m.—KYUM

TELEVISION  
Thurs., 6:30 p.m.—KIVA, channel 11

ARIZONA FARM & RANCH HOUR  
Every Saturday at 12:30 Noon  
on Following Stations:  
KOY—Phoenix  
KYMA—Yuma  
KVNC—Winslow  
KCLS—Flagstaff  
KAWT—Douglas  
KSVN—Bisbee  
KTUC—Tucson



Here's a Practical

# FEEDLOT PLAN

By Albert M. Lane  
Extension Service

**LAYOUT**—Six pens handling 500 cattle, two of 50-head capacity, four of 100-head capacity; three pens on each side of the working alley; working corral adjacent to small pens as shown in the sketch.

**MANGERS** — Concrete construction, preferably with an 8-foot concrete apron; pipe post set directly in concrete manger and outfitted with adjustable clamps or eyes to run a one-half inch cable or larger through for neck yoke. See sketch. Use

the lower eye for calves and upper eye for big cattle.

**SHADES**—Continuous, 16 feet wide and 10 to 12 feet high, preferably of corrugated aluminum or heavy thatch.

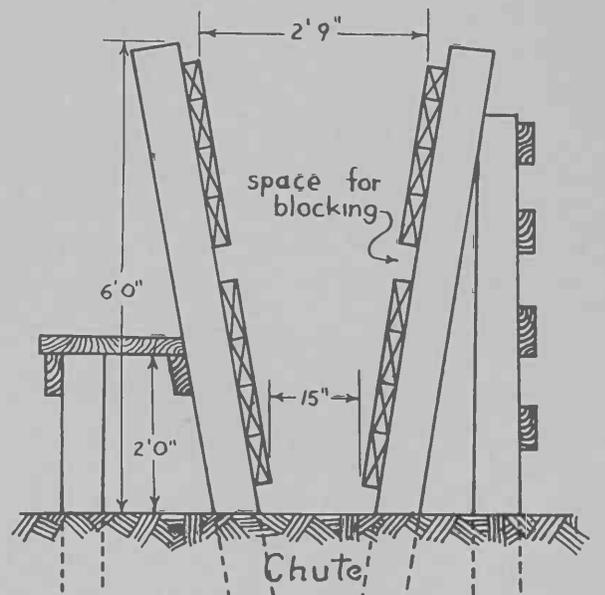
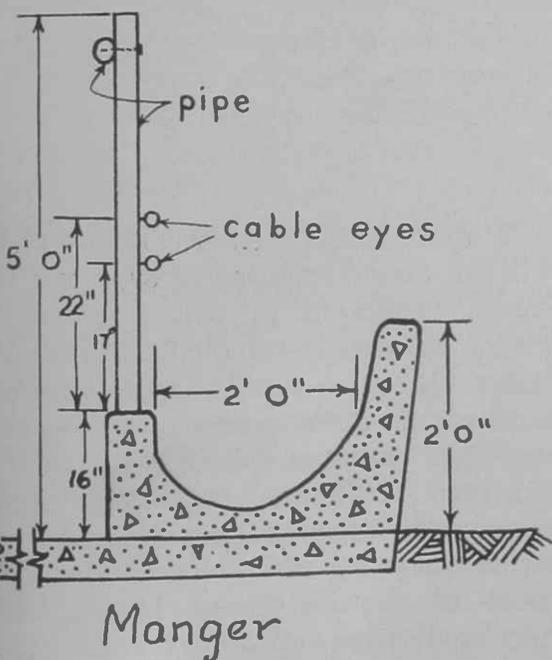
**FENCES**—Feeding pens: posts 5 feet 3 inches high, two top-rails of 2x6's, third rail 2x8's, and bottom rail 2x6's, all on 15-inch centers; posts are used ties or other heavy 8-foot posts, spaced 8 feet apart; five 3/8-inch or 1/2-inch cables on 12-inch centers may be used to replace the four rails, or a combination of the two materials. Cables pass directly through the post and are tightened with "turnbuckles."

**WATER TANKS**—Shallow tanks 26 inches high, water 6 to 8 inches deep; approximately 8 feet long and 2 1/2 feet wide, placed under the shade (as shown).

**GATES**—Feeding pen gates all 14 feet wide, all working pen and scale gates 12 feet wide, except a 10-foot gate at the mouth of the chute and a 5-foot gate next to the squeeze.

**CHUTE**—Two-inch boards on sloping 10-foot posts (as shown), solid construction except for space at the ground line for manure to work out and a blocking space to insert a pole or pipe to prevent cattle from backing up.

All feeding is in the outside mangers; and the scale is so designed and located to weigh both cattle and feed. Three working pens allow for sorting and working the cattle.



**Y**our home may not be a favorable place for indoor plants. The air may be too dry, the drafts too prevalent, the nights too warm. You may "kill your plants with kindness" by giving them too much to drink—or starve them by failure to feed them often enough.

But don't envy your neighbor who has a "green thumb." The "green thumb principles" are few. The chief ones for Arizona are on this page. Read, understand, and practice them—and a garden will grow in your home.



*Light  
on the  
Subject*

Light is essential for the manufacture of food by the plant leaves—food for growing flowers as well as more leaves and stems.

Plants that do not receive enough sunlight stop growing when the food reserves within the plant have been used up. Excessive sunlight destroys the chlorophyll (green color) in the leaf faster than it can be formed and yellowing of the foliage becomes evident after long exposure to direct sunlight.

Dark locations or exposure to full sunlight should be avoided in selecting a location for indoor plants. Most indoor plants will get light enough if placed near windows away from direct sunlight or in any area of the room that is well lighted.



*Don't  
"Draft"  
Them*

Some indoor plants are sensitive to sudden temperature changes. These must be kept away from doors, open windows—and out of direct line of cooler or heater vents.

#### *Gas Chambers*

Gas injury is often encountered in the kitchen where raw gas might escape from unlighted burners. An amount so small that it would not be detected by humans may be enough to cause injury or death to plants.

# Some "Green Thumb" Tips for Your INDOOR PLANTS

By Steve Fazio

Department of Horticulture

#### *It's the Humidity*

Control of transpiration (the loss of water through plant leaves and stems) is difficult, inasmuch as many home heating units are not equipped to increase humidity. During the winter, the average relative humidity in the home varies from 10 to 30%. Indoor plants are best adapted to 90% humidity, which is generally maintained in greenhouses.

Whenever possible a pan of water should be placed on the heating furnace to offset the drying effect of the heated air. A mulch of peat moss around the base of plants moistened at intervals increases the humidity near the foliage.

#### *Hot or Cold*

The uniform winter temperature in homes with thermostatically controlled heating is not favorable for growth of plants. Food manufactured during the day is normally held in reserve for new growth. When night temperatures are maintained at a constant 70 or 72°F., as during the day, respiration (consuming stored food) continues throughout the night. This depletes the plant's food reserve that would otherwise be used for growth. A continuation of high night temperatures will eventually cause yellowing of foliage and death of the plant.

Indoor plants are best suited to temperatures of 70°F. during the day and approximately 55°F. at night. Low night temperature will reduce respiration—and plants will maintain a balance of stored food for new growth.

Plants placed near glass windows remain cooler than in any other part of the house. Heat is radiated to the cold glass and a more favorable temperature is maintained. Avoid placing plants in direct line with heating vents. Air currents may dry out leaves faster than the plant can replace the lost moisture.



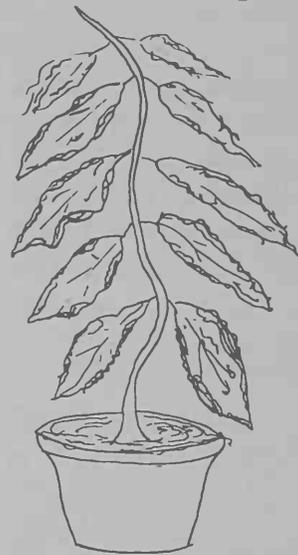
*Drain,  
Don't  
Drown*

Indoor plants often fail to thrive because they are given too much water or where there is a lack of drainage. The latter happens when plants are placed in containers with no means for draining off excess water. This excess water excludes oxygen from the root zone. A peculiar odor develops from the microorganisms developing in the absence of oxygen. Plants growing in this type of media show yellowing and browning of the foliage. Use of pots with holes in the bottom, or with a pebble drainage area will prevent this damage.

Watering at regular intervals is not recommended, since air humidity may vary and transpiration may increase or decrease between watering periods. Watering when the soil surface shows a lack of moisture is a more reliable method. Measured amounts of water will often prevent overwatering.

A suggested amount of water to apply for any given container is one cubic inch of water to each 6-8 cubic inches of soil. (Small pots dry out more quickly.)

Examples: 3" pot—3 tbsps. of water  
4" pot—1/4 cup water  
5" pot—1/2 cup water  
6" pot—3/4 cup water



*Feed  
Them  
Well*

Without added fertilizer, indoor plants will not maintain proper growth and leaf color. Depletion of soil nutrients by plants, with roots confined in small containers is quite rapid. Applications of fertilizer at intervals of 1 to 3 months in proper amounts should be sufficient.

Mixed fertilizers containing varying amounts of organic matter should be used rather than straight mineral types, because of the danger of burning with over-application of the mineral types.

# Promising New Chemicals Control Crabgrass In Bermuda Grass Lawns

By  
**Keith C. Hamilton**  
Department of Agronomy  
and Range Management  
and  
**H. F. Arle**  
A.R.S., U.S.D.A.

Many of the Bermuda grass lawns, athletic fields, and golf fairways in Southern Arizona become infested with crabgrass (*Digitaria sanguinalis* and *D. Ischaemum*) during the summer.

These invasions are considered serious, because—among other objections—when crabgrass dies in the fall the leaves and stem may shatter under heavy usage leaving bare ground exposed throughout the winter. While Bermuda grass turns brown after the first frost, it is sufficiently resilient to maintain a vegetative cover over the ground throughout the winter.

The maintaining of a healthy vigorous stand of Bermuda grass is one of the best methods to control crabgrass invasion. This maintenance includes proper irrigation, fertilization, and mowing. There is less opportunity for crabgrass to become established in a Bermuda sod when lawns are mowed and maintained at 1½-2 inches. When herbicides are used to control weeds in lawns, they can only supplement management practices which favor the lawn grasses.

## New Herbicides

During the past few years, several herbicides have been tested for use in controlling crabgrass. Among the new chemicals that have shown some promise are phenyl mercuric acetate and potassium cyanate. The use of these and other chemicals for crabgrass control has not become widespread because of high costs and erratic results, which are in part due to the necessity of precise timing of application. During the summer of 1955, the herbicides CMU (3-p-chlorophenyl-1-1-dimethylurea) and DCMU (3-(3, 4-dichlorophenyl)-1-1-dimethylurea)\* were tested for controlling crabgrass in Bermuda grass lawns. Applications of both herbicides were made on several dates at rates varying from ¾ to 2 pounds per acre.

## Effect of CMU

The effect of applications of CMU and DCMU made on June 14, 25, and July 20 is indicated in the table. In general, when crabgrass was small, the application of either CMU or DCMU resulted in excellent control. When crabgrass was more mature, DCMU still produced excellent control, while CMU was not effective.

The duration of crabgrass control in Bermuda sods by these herbicides is a factor not yet completely determined. Duration of control varies with soil type, amount and frequency of irrigation, and rate of herbicide applied. With a heavy irrigation schedule it has been noted that crabgrass may become re-established about eight weeks after treatment. If the Bermuda sod is vigorous its competition should prevent crabgrass from becoming re-established.

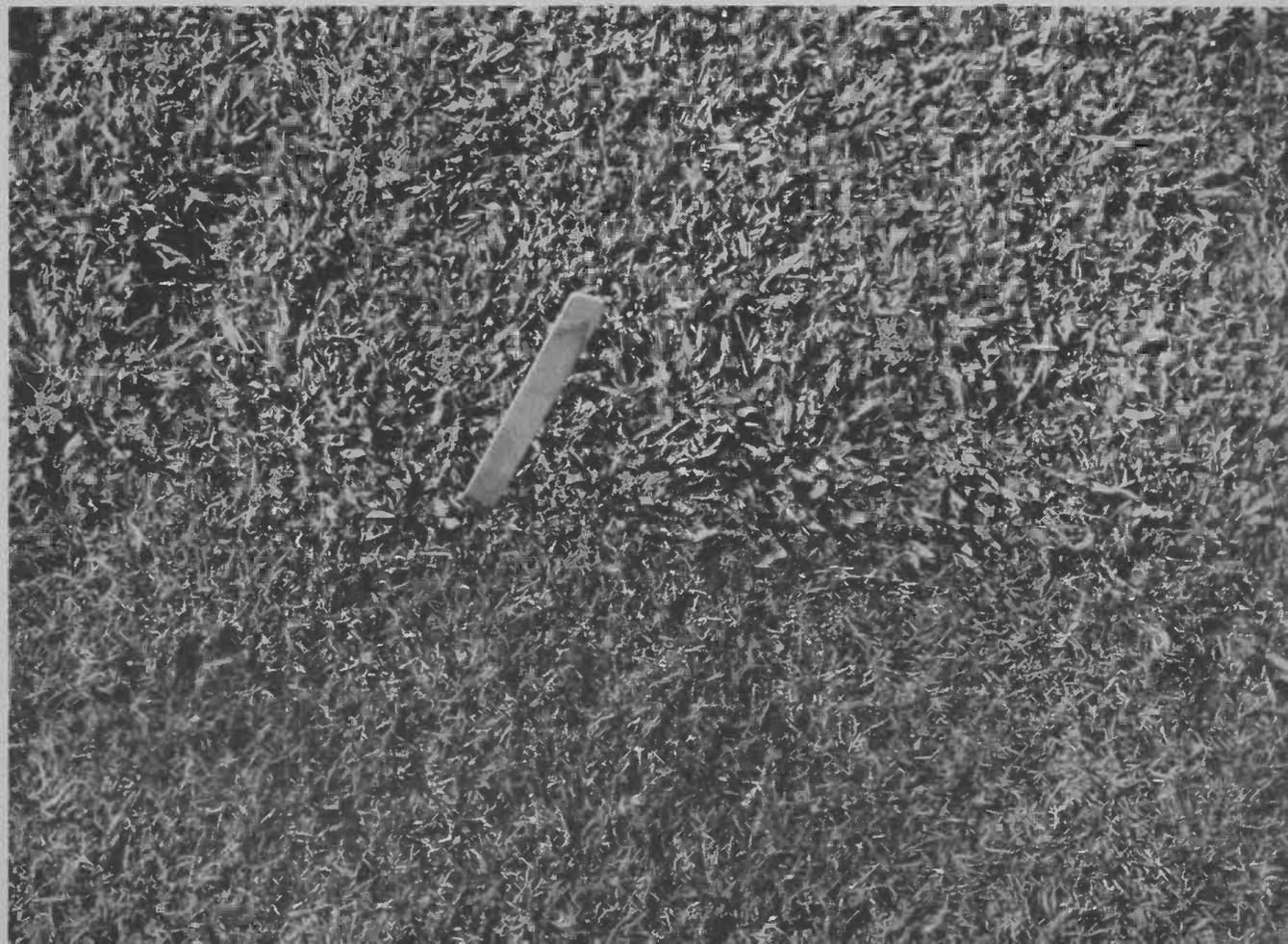
## Application Rate

Limited experimentation has shown that applications of 1 to 1½ pounds per acre of DCMU resulted in excellent control of crabgrass. This rate of application of DCMU often caused temporary yellowing of the Bermuda grass, but normal color was regained within a few weeks. Its vigorous new growth then covered over the spots of bare ground that resulted from death of the crabgrass.

The successful use of these herbicides for crabgrass control depends on applying them *uniformly at the proper rates*. The amount of chemical needed for crabgrass control is only about one-half the amount that can cause prolonged yellowing of Bermuda grass. The use of CMU or DCMU for crabgrass control should be attempted only by persons thoroughly familiar with the precision application equipment that must be used.

**Upper half of picture: solid stand of crabgrass on untreated plot.**

**Lower half of picture: good stand of Bermuda grass on plot treated with DCMU that was heavily infested with crabgrass when treated.**



The amount of CMU or DCMU needed to control crabgrass while only 1 to 1½ pounds per acre, is *sufficient to cause*

Treatment	Rate in pounds	Estimated Percent Crabgrass in Bermuda Sod			
		2 Weeks after treatment	4	8	
Date Applied	Chemical	per acre	2	4	8
June 14	DCMU	1½	0	0	0
June 14	CMU	2	0	0	0
	Untreated check		20	25	15
June 25	DCMU	1¼	2	6	15
June 25	CMU	1¼	15	27	50
	Untreated check		37	48	55
July 20	DCMU	2	0	8	5
July 20	CMU	2	15	42	35
	Untreated check		35	45	50

*yellowing of the leaves* of many ornamental shrubs and shade trees if their roots extend under the treated area. The effects, if any, of such applications on most shrubs and trees are temporary.

It is planned to continue this work during the 1956 season. The proper time and rate of application, duration of control, and herbicides related to CMU and DCMU will be investigated. While the results are most promising, there is not sufficient experience at this time to recommend widespread usage of these herbicides for crabgrass control.

\*These herbicides are commercially available under the trade names, Karmex W and Karmex D, respectively.



# Roses in the

## FLORIBUNDA ROSES

Spartan—'56—coral red  
 Jiminy Cricket—'55—coral orange  
 Embers—'55—glowing red  
 Fashion—'47—coral pink  
 Garnette—'47—garnet red  
 Vogue—'51—cherry red  
 Snowbird—'36—white  
 Pink Bountiful—'45—medium pink  
 Siren—'53—scarlet  
 Easter Parade—'53—pink and yellow

\*Year introduced

PEACEFUL, A 5-INCH  
 FULL HYBRID TEA ROSE

Photo courtesy of  
 Jackson & Perkins Co.

While roses are not native to our Southwestern deserts, a few were planted by early settlers so we have always had them. Following a slow but steady growth of interest in roses, the last ten years has brought a phenomenal increase in rose planting, and the beginning of what promises to be an important new industry for Arizona—the production of rose plants for the wholesale market.

### *Climatic Advantages*

While some features of our climate are not favorable for the production of the best blooms, there are many important advantages which offset these unfavorable conditions. Our long growing season gives us a very good spring bloom in April and May, followed by a hot, dry summer during which the blooms are inferior. This is followed by a fine fall bloom in October-November, often extending into December, so we have two full periods for fine flowers and plant growth.

### FAVORITE DOZEN (BUSHES)

Nocturne—deep red  
 Etoile de Hollande—med. red  
 Red Hoover—med. red  
 Tallyho—light red  
 Charlotte Armstrong—light red  
 Santa Anita—med. pink  
 Picture—med. pink  
 Countess Vandal—pink blend  
 Girona—orange blend  
 Fred Edmunds—orange blend  
 McGredy's Sunset—deep yellow  
 Frau Karl Druschki—white

In summer the intense sunlight fades the more delicate colors, such as the lighter pinks and yellows, and the combination of heat and very dry air may cause the drying of petals of the more tender varieties. During the more temperate spring and fall blooming periods, the same bushes produce excellent flowers.

The same bright sun and dry air gives our roses complete freedom from black spot, the most serious and troublesome disease affecting the rose. Powdery mildew occurs on susceptible varieties but is much less prevalent than in more humid climates. Rust and anthracnose are practically unknown. The two most important root and crown diseases, crown gall and root-knot, are not found in new lands.

### *A New Industry*

This freedom from rose diseases, together with the availability of large blocks of new irrigated land and the long growing season, led one of the nation's largest growers of roses (Jackson & Perkins) to establish new growing grounds in the north end of Deer Valley, about 18 miles from Phoenix. They have more than two sections of land of which about one-half is now planted to roses. The headquarters unit includes a large cold storage plant for budwood and two large buildings for storage and packing of dormant rose bushes and for the preparation of root stock cuttings. Results have exceeded expectations and the long season

plus rapid growth especially during the fall produces larger plants than are grown elsewhere in the same period of time.

The first crop of rose bushes was dug and shipped a year ago, and plantings and facilities are being expanded rapidly.

Some difficulties have been encountered, the most troublesome being the reluctance of the plants to stop growing and to shed their leaves in December so they can be dug and shipped in dormant condition. Even the application of the usual defoliant at first failed to discourage further growth. Chlorosis has affected some varieties. On the other hand, thousands of dollars are saved annually because it has not been necessary to spray for the control of blackspot and other diseases.

Other firms have become interested in rose growing and several of them have made plantings in Maricopa and Pinal counties, and there are prospects of a thriving new industry whose product has a very high dollar value per acre.

### *Superior Varieties*

The great increase in rose planting during the past ten years has been stimulated by the introduction of superior new varieties in the hybrid tea roses, and the breeding of an entirely new class of ever-blooming roses, the floribundas. A list of the best of these new varieties would be too long for this space but a few outstanding recent introductions and superior older varieties are given in the "boxes" on this page.

By Rubert B. Streets

## HYBRID TEA ROSES

Peace—'45\*—yellow, shaded pink

Santa Anita—'43—medium pink

Helen Traubel—'51—pink blend

New Yorker—'47—medium red

Tawny Gold—'51—gold

Buccaneer—'52—deep yellow

Christopher Stone—'36—medium red

Mme. Henri Guillot—'38—flame

Golden Scepter—'50—deep yellow

Tiffany—'54—clear pink

### COVER PICTURE

SPARTAN, a striking new orange-red floribunda, was named for the ancient Spartans who were famed for the great beauty of their women and the strength and vigor of their men. Bushes planted in the Tucson Rose Garden last summer produced brilliant flowers all summer and fall.

*Color plates, courtesy of Jackson & Perkins Company, Newark, N.Y.*

### KONRAD ADENAUER, HYBRID TEA ROSE

Photo courtesy of  
Jackson & Perkins Co.



## SOME TIPS ON PLANTING ROSES

Roses are hardy and adaptable and will grow under a variety of conditions. The following suggestions, however, are based on many years of experience and observation and should give very good results under average conditions.

**1. WHEN TO PLANT:** The new crop of bare-rooted roses are received by our nurseries early in January. Select your bushes as early as possible, and plant promptly. The bushes will grow new roots while the cool air is retarding top growth, which is desirable. January and February are the best months to plant bare-rooted roses. For later plantings, buy roses well established in cans. Remove the can carefully to avoid injuring the new roots.

**2. DEPTH OF SOIL:** Roses will grow well in two feet of good soil with adequate drainage. Three feet of soil are better.

**3. SPACING:** Experience has shown that bushes spaced 3 feet apart and allowed to grow large so they shade the ground are much longer-lived and produce many more flowers than those spaced 18 to 24 inches and pruned severely.

**4. PREPARATION OF SOIL:** Except in deep, fertile soils, the soil should be excavated to the depth of 2 to 3 feet. In digging, caliche or other unsuitable soil should be separated from the topsoil and removed and replaced by good topsoil. Manure, spoiled hay, or other organic matter should be mixed with the soil up to one-fourth by volume, as the holes are refilled. Soil sulphur at the rate of 2 ounces per cubic foot and ammonium sulphate at the rate of one ounce per cubic foot of excavation are well worth while. When the hole is filled to within six inches of the top, flood with four inches of water to settle the soil.

**5. SETTING THE BUSHES:** When the soil is no longer muddy (in 2 or 3 days) in the center of the depression build a low mound of soil (no manure) and spread the roots on this mound. Cover with 2 or 3 handfuls of moist sphagnum or peat moss to keep the roots moist. Then cover with 3 inches of soil (again, no manure). The soil-manure mix can be used to complete filling the hole.

**6. DEPTH OF PLANTING:** The point of budding, as shown by the swelling on the main stem, should be at, or slightly above, the soil line. Too deep planting is a common cause of failure with roses.

**7. IRRIGATION:** It is vital that the soil around newly planted roses be kept moist by frequent light irrigations (two or three times a week) until the root system has become established (6 to 8 weeks).

Established roses (one year or over) should thrive on one good soaking per week except in the hottest weather when a 5-day interval may be necessary in lighter soils.

**Editor's note:** Dr. Streets, a specialist in plant diseases and head, Department of Plant Pathology, University of Arizona, has been devoted to rose culture in Arizona for 30 years, and has gained national recognition as an expert on roses. His testing of varieties to find those most suitable to Arizona has been greatly aided by the Tucson Rose Society through its test garden facilities in Randolph Park.

### FAVORITE CLIMBERS

- Cl. Christopher Stone—med. red
- Cl. Etoile de Hollande—med. red
- Blaze—med. red
- Cl. Santa Anita—med. pink
- Cl. Show Girl—med. pink
- Cl. Pinkie—light pink (repeats)
- Cl. Talisman—pink blend
- Cl. Mrs. Sam McGredy—orange blend
- Cl. Hinrich Gaede—orange blend
- Cl. Peace—yellow blend
- Cl. Goldilocks—deep yellow
- Silver Moon—white

# Double Cropping Sorghums

in the Salt River Valley

By Lee S. Stith  
 Department of Plant Breeding  
 and David C. Aepli  
 General Superintendent of Experiment  
 Station Farms

Sorghums can be grown successfully almost anywhere in Arizona. Sorghums are now grown on more than 180,000 acres in the state and double cropping (often called ratooning) may move sorghums another step forward in economic competition with other crops in the lower elevations of Arizona.

Double cropping should be attempted only at elevations under 2,000 feet. The second crop has added a ton of grain per acre to the annual yield; and 6,000 pounds total yearly grain yield of Double Dwarf 38 milo per acre is the usual thing at the University experimental farm near Mesa.

### Three Alternatives

A grower who follows a double-cropping system in producing grain sorghums has three alternatives: (1) to produce two crops that are suitable for seed, or for feed, or for either if the season is favorable, (2) with a less-favorable season, produce two crops with one seed and one feed crop or one seed and one silage crop, (3) two silage crops.

Usually 70 percent of the yield is from the first cutting; however, not all varieties respond the same as Double Dwarf 38. D. D. Yellow Sooner, CBR Milo, and regular Hegari have given high grain yields.

Hegari is the only variety that can be grown satisfactorily as a combination silage and grain crop, or for a double cropping of silage. The other varieties shown in the table are grain varieties not suited for silage production. Caprock

### Yield of Double-Cropped (Ratooned) Sorghums Grown at the University Experimental Farm, Mesa, Arizona, 1950-55

Variety	Percentage harvested 1st cut	Average grain yield as per cent of DD 38 (6404 lbs. acre)
Double Dwarf 38 Milo	73	100
D. D. Yellow Sooner	64	109
CBR Milo	67	121
Hegari (regular)	60	104
Plainsman	83	96
Martin	74	90

and Plainsman are good producers for a single crop but are slow to mature and dry out—making a second crop doubtful. Martin is a low producer and should not be considered in this program.

The crop can be removed and safely stored when the moisture level has reached 15 percent. It is essential that the first crop be matured and harvested in early August so that regrowth for the second crop can be started. Data on the type of heads produced on ratooned plants show that 6- to 8-inch stubble produces heads of fair size and yield. Heads on plants of combine stubble (18-24 inches) are produced more quickly than those from the low-cut stubble, are more numerous, but are usually rather small.

### The Payoff

The payoff of the double cropping of sorghums is in the pounds of grain per acre. The longer the growing season (240-day minimum) the greater the opportunity for high production under double cropping. The crop, therefore, should be planted when the soil temperature is 65° or more and before April 1, because of the length of time required to mature the first crop and dry the seed to 15 per cent moisture. The April 1 planting should permit an early August harvest and allow time for a second crop before frost time.



Row width and planting rates are also not to be overlooked. Varieties, such as D. D. Yellow Sooner, that tiller little can be planted in 18- to 20-inch rows at approximately 8 pounds of seed per acre. Do not have the planting rate too heavy as the stalks would be small and weak and breakage could be detrimental during the summer rainfall period. Profusely tillering varieties such as Hegari should be planted in 36- to 40-inch rows at the rate of 6 pounds per acre.

Although sorghums are traditionally drouth resistant, *never let the crop suffer for water*. Shortage of water during the blooming stage may cause blasting of the heads. Excess water at maturity will encourage branching and tillering which will interfere with harvesting operations of a grain crop and prevent the heads from drying properly. Branching and tillering are to be encouraged if the crop is for silage.

### Double Use Takes Skill

Double use of the land requires considerable production skill. In 1955, about 800 pounds of grain paid for the additional expense at the University Farm. To expect an extra ton of grain or its silage equivalent is entirely reasonable if a grower will:

- (1) Plant as early as possible (before April 1) with high-quality, treated seed.
- (2) Fertilize according to soil fertility—and always apply at least 100 pounds of nitrogen to the first and 50 pounds to the second crop.
- (3) Never let the crop suffer for lack of water.
- (4) Harvest the first crop as soon as the grain moisture is 15 percent.
- (5) Plant non-tillering varieties in 18- to 20-inch rows at approximately 8 pounds of seed per acre. Tillering varieties should be grown in 36- to 40-inch rows planted at the rate of 6 pounds per acre.

Sorghums respond to applications of nitrogen of 100 pounds per acre applied at or before planting time. A second application of at least 50 pounds of nitrogen fertilizer at the start of the second crop in August will usually be profitable with most varieties. Fertilizer application rates above the amounts recommended brought profitable returns at the Mesa Farm in 1955.



**Deciduous fruit experimental orchard, University of Arizona Agricultural Experiment Station, Mesa. Hollywood plum at left proves to be well adapted. Trees planted early Spring, 1949. Photographed May 24, 1955.**



developed in recent years varieties which require less chilling. This makes available a greater selectivity of adaptable varieties. Late maturing varieties of peaches in lower elevations of Arizona have proven less desirable than early-maturing varieties from the standpoint of producing marketable high-quality fruit.

#### *Plums*

There are several varieties of plums which have proven desirable, with ripening seasons ranging from late May through July. The Hollywood and Mariposa varieties require a pollinizer variety flowering at the same time for better fruit production. The Hollywood plum is especially desirable for home plantings due to the very attractive purple-bronze color of leaves, the pink blossoms, and red-blood fruit. The fruit size of the superior plum varieties grown are being increased by proper thinning of immature fruit. The Santa Rosa variety is a very desirable producer of high-quality plums. The Climax variety produces very large and juicy fruit that tends to drop at the time of ripening.

#### *Apricots*

The superior apricot varieties ripen during late May and June. Some apricot varieties are not consistent bearers, in part due to blossom injury by late frost. One of the most promising apricot varieties is the Reeves. This is an early variety and through proper orchard management its fruit can be developed into a suitable larger size, for premium marketing. The Royal is the consistent bearer.

#### *Other Fruits*

Of 15 grape varieties tested, Cardinal, Perlette, and Thompson have proven superior as early table grapes. Other grape varieties recently planted at the Mesa Station include Calmeria, Crystal, Queen, Beauty, Black Rose and Italia. Black Mission and Kadota fig varieties are suitable. The Hachiya persimmon is attractive as a late fruit, maturing in October.

#### *Planting Suggestions*

Planting time is January or February. Your local nurseryman or county agricultural agent can help you select fruit varieties best for your locality, and help with planting procedures. If interested in apricots and plums, be cautious of locations along lower portions of valleys, where late frost is more likely to damage blossoms.

## Before you plant, consider DECIDUOUS FRUIT VARIETY TESTS

By Leland Burkhart  
Department of Horticulture

One hundred and fifty varieties of deciduous fruits have been or are being tested at the University of Arizona orchard at Mesa. Successful varieties are reported to the public; and as soon as a variety is found unsuited to this area, it is discarded and a new one put in its place for testing.

This testing program has been under way at Mesa since 1949. Such testing is necessary because many varieties on the market are not adapted to Arizona, and, if planted either commercially or in the home "orchard," would lead to disappointment.

On the basis of productivity, quality, and ripening period, certain varieties are found to be superior. Presumably, varieties successful at Mesa would be suitable in other locations in Southern Arizona where conditions are similar to those at Mesa.

The Mesa test orchard consists mainly of peaches, apricots, and plums—however, apples, pears and nectarines are included.

#### *Peaches*

The superior peach varieties are those maturing before mid-July. Springtime variety is the earliest ripening peach in the test. Blazing Gold is the earliest yellow-fleshed variety now in the plantings. Recently, new and attractive flowering

peaches with edible fruit have been developed in the Southwest, namely Daily News, Altair, and Saturn—they bloom very early.

Additional new varieties planted in recent years require more time for evaluating fruit characteristics. Also, each year new releases developed by fruit breeders require testing in various localities in order to determine their adaptability.

The lack of chilling during the winter period has been a limiting factor in the adaptability of peaches in the lower elevations of Arizona. There have been

### SUPERIOR FRUIT VARIETIES (Mesa Experiment Station)

Variety	Ripening Season
<b>PEACHES:</b>	
Robin	Late May
Meadow Lark	Early June
Starking	Mid-June
Delicious	
Redwing	Late June
Early Elberta	Early July
<b>PLUMS:</b>	
Beauty	Late May
Climax	Early June
Hollywood	June
Santa Rosa	June
Mariposa	Early July
Duarte	July
Kelsey	July
<b>APRICOTS:</b>	
Reeves	Late May
Royal	Early June
Wenatchee	Mid-June

# Need a SCHOLARSHIP?

By Russell W. Cline

Department of Agricultural and  
Home Economics Education

The University of Arizona offers financial aid through the scholarship program to more than 400 students including about 250 freshmen. The amount of these grants ranges as high as \$1000 per year for undergraduates and to more than \$2000 for certain graduate fellowships. In addition to scholarships available to any qualified University student, the following are offered specifically for students in the College of Agriculture including Home Economics.

## SCHOLARSHIPS

*Arizona Dietetic Association:* This scholarship of \$125 is awarded to a senior in Home Economics who is majoring in foods and nutrition. The selection is based upon scholastic record, need and probable attainment in the field of nutrition.

*Arizona Men's Scholarships:* These awards include a scholarship of \$400 for this year sponsored by J. Rukin Jelks for a worthy student in the College of Agriculture in need of financial assistance.

*Arizona Dairy Technology Society:* Two scholarships of \$225 each are offered to a junior or senior in the College of Agriculture majoring in dairy science, or a junior or senior in the College of Business and Public Administration majoring in dairy plant management.

*Borden Agricultural Scholarship:* This award of \$300 is offered each year to a senior in the College of Agriculture with the highest grade average. Applicants must have completed at least two dairy courses.

*Pilot Club of Tucson:* Two scholarships, one each semester of \$50 are offered each year to students in Home Economics. Selection is based upon achievement, need and promise.

*Ralston Purina Scholarship:* This scholarship of \$500 per year is awarded to a senior student in animal, dairy or poultry science. The selection is made on the basis of scholastic record, character, leadership, activities, interest in agriculture and financial need.

*Sears-Roebuck Scholarships:* Each year eleven freshmen including one woman in Home Economics are awarded scholarships of \$200 each. Selections are based upon high school scholastic record, probable future attainment and need.

The scholarship student in agriculture who has the highest grades in the freshman year receives an award of \$250 for the sophomore year and is eligible to compete for a junior scholarship at the national level. A total of 119 students have received scholarships since this program was started at the University in 1941.

*Arizona Cotton Growers Association Fellowship:* This fellowship pays \$2000 with an additional \$500 for equipment and travel to a graduate student for research in cotton breeding. The applicant is selected by the Plant Science Graduate Committee and a representative of the Arizona Cotton Growers Association.

*Arizona Bankers' Association Fellowship:* This fellowship of \$500 for the year is offered to a graduate student in either the College of Agriculture or the College of Business and Public Administration whose research problem deals with commercial bank loans to farmers and/or ranchers.

*Paul Steere Burgess Graduate Fellowship:* This fellowship of \$900 per year is awarded upon the recommendation of the Dean of the College of Agriculture to a graduate student for study in any department of that College.

*Irrigation-Engineering Fellowship:* This fellowship of \$600 per year is provided by G.E.P. Smith to a graduate student for study in the field of Agricultural Engineering. The selection is made upon the recommendation of the head of that department.

A complete description of all scholarships and fellowships will be found in the biennial catalogue of the University of Arizona. High school graduates interested in a scholarship at the University should see their high school administrator for further information and application forms, or make inquiry directly to the Chairman of the Committee on Scholarships and Awards, University of Arizona, Tucson.

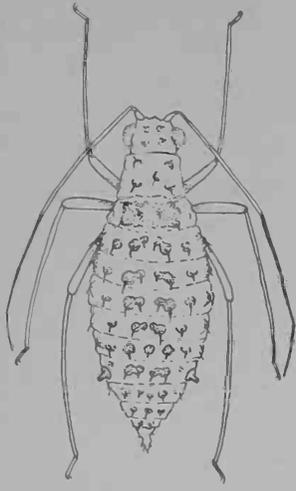
## FELLOWSHIPS

The following fellowships are available to students pursuing graduate study in the College of Agriculture.

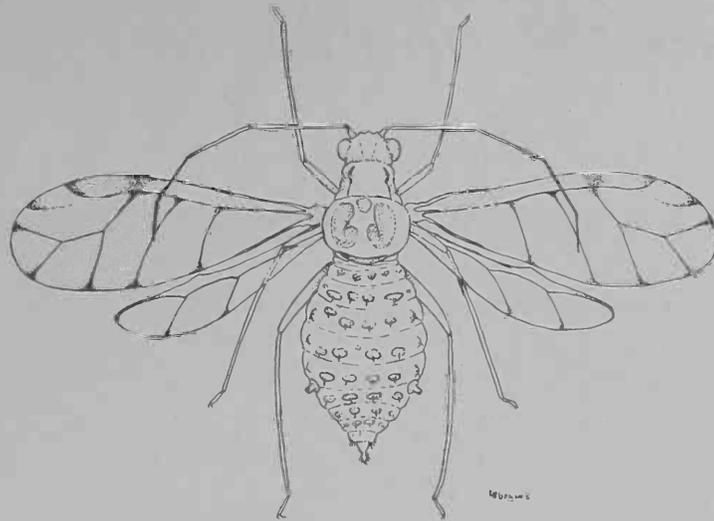
*Teaching Fellowships:* These awards pay the student approximately \$900 per year for service requiring 12 hours per week. One or more fellowships are offered each year in the departments of Agronomy, Botany, Entomology, Home Economics and Plant Pathology.



Dr. T. F. Buehrer, Associate Dean of the College of Agriculture, presents Brian Bryans of Tucson with the Sears-Roebuck Sophomore Scholarship for 1955-56. Winners of Freshmen Scholarships (left to right) are: Dale Deal, Phoenix; Billy McKinley, Casa Grande; Everett Broaday, Yuma; Raymond Trappman, Willcox; Janice Newett (Home Economics), Warren; Ronald Crismon, Willcox; Howard Clonts, Casa Grande; Hilary McMahan, Elfrida. Not in picture, Robert York, Tolleson.

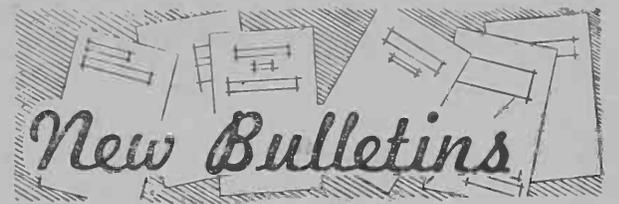


Wingless



Winged

(About 12 times natural size—actual length from 1/16 to 1/8 inches.)



#### AGRICULTURAL EXPERIMENT STATION

Bulletin 266: Forage Production on Arizona Ranges, IV. Coconino, Navajo, Apache Counties. A Study in Range Condition

Bulletin 268. Dearfism in Beef Cattle. The Description, Cause and Control

Bulletin 269. Growing Potatoes in Arizona (Available about Jan. 20)

Report 121. Small Grain Variety Tests

Report 122. Statistical Tables, Consumer Preference for Beef, Phoenix, Arizona, 1955 (Tables only)

Report 123. Seasonal and Inter-Area Shifts in the Western Lettuce Industry

Report 124. The Value of Pyrite and Pyrrhotite as Soil Conditioners (Technical)

#### AGRICULTURAL EXTENSION SERVICE

Circular 323. Yeast Bread and Rolls

Circular 233. How to Process Your Home-Grown Olives

Circular 234. New Ways of Cooking Pinto Beans

## The Latest on the SPOTTED ALFALFA APHID IN ARIZONA

Donald M. Tuttle  
Department of Entomology

"Spotted Alfalfa Aphid" is now the accepted name for the very serious alfalfa pest which was first reported from Arizona, New Mexico, and California in 1954. This insect, which bears the technical name *Therioaphis maculata* (Buckton), had previously been known from an area extending from India to the Mediterranean region. It is now considered to be a different species from the yellow clover aphid, *Therioaphis trifolii* (Monell), which has been a minor clover pest in northeastern United States for many years.

The spotted alfalfa aphid may be distinguished from other aphids common on Arizona crops by its relatively small size (1/16 to 1/8 inch in length), yellowish-green color, 6 rows of black spots on its upper surface, dusky wing veins on winged individuals, the habit of feeding on lower leaf surfaces and of jumping when disturbed, and by its copious secretions of honeydew.

The spotted alfalfa aphid is capable of destroying entire stands of seedling alfalfa within a few days. It is, therefore, necessary that seedlings be closely examined, preferably "on hands and knees," at intervals of two to three days, particularly when plants are less than five inches high. Older seedlings should be examined at least twice weekly and mature stands at least weekly if serious losses are to be prevented.

For the present, at least, it is necessary to use insecticides to adequately control the spotted alfalfa aphid in Arizona. The following suggestions are based on re-

sults of recent field experiments in the Yuma area where infestations have been particularly heavy.

### SUGGESTIONS FOR THE INSECTICIDINAL CONTROL OF THE SPOTTED ALFALFA APHID IN ARIZONA

#### 1. Alfalfa Seedlings:

When 2 to 3 aphids are found per 10 seedlings.

**Dusts:** 5% malathion (preferred) or 2% parathion at 12-15 lbs. per acre (by ground duster), or at 17-20 lbs. per acre (by aircraft). Dusts are more effective when sulfur is added to formulations.

**Sprays:** Use one pint of one of the following emulsion concentrates in 6 gallons of water per acre: 50% malathion (preferred), or 25% parathion, or 25% demeton (Systox). (The latter is less effective on seedlings than on larger plants.)

#### 2. Alfalfa Grown for Hay:

When 30 to 40 aphids are found per plant, or when honeydew becomes noticeable. (Do not wait until plants become sticky.)

Same as above. Very thorough application is essential; missed areas are sources of rapid re-infestations. **WARNING:** Alfalfa grown for hay should not be cut or pastured for at least 14 days after treatment with the above materials. Insecticides with more persistent residues should not be used on hay crops.

#### 3. Alfalfa Grown for Seed:

Same as above.

Up to the blooming period, any of the materials listed above may be used. During and after blooming, use a dust containing 15% toxaphene, 5% DDT, and 40% sulfur, at 15 lbs. per acre (preferred), or 25% demeton (Systox) concentrate in a spray containing 6 gallons of water per acre. Ordinarily the insecticides used to control other pests of alfalfa seed crops will also control the spotted alfalfa aphid.

# There Is Personality Development in Clothing the Adolescent

By Ruth Allen

School of Home Economics

The parent and the adolescent may be equally unaware of how crucial is selection of clothing for the young person. The parent is aware only that the adolescent is making unseemly demands for independence, and the young person feels that being denied the right of selection is a reflection of his maturity.

## Dominating Desire

The dominating desire of young people is to establish themselves as a part of a social group their own age. Clothing is a very vibrant means of establishing identity, and a very articulate means of communication. Those feelings of insecurity and inferiority that result from wearing clothing different from the "crowd" assume far greater importance to the adolescent than to the adult who has had time to develop a sense of values to cover such circumstances.

## Everybody's Doing It

Children want to be "like the gang" in their activities and clothing from the time of their earliest contact with others. "But everybody is doing it!" is not a new phrase to a teen-ager's family. Even little tots are sensitive if their clothes are too different from their comrades. There is a stage when children want to be exactly like others their age. If Mary has a blue skirt, then friend Sally must have a duplicate. If Joe has a shirt with a space ship on it, then George and John and Bill won't go to school without one.

By adolescence, most young people have outgrown the desire for identical garments, and have reached the stage of wanting very similar garments but with just a touch of originality. Most adult women know that the desire to dress as individuals, irrespective of fashion trends and dictates, is a long-term development.

A source of some conflicts is a difference of opinion as to how mature the young person is. Some parents don't acknowledge the degree of responsibility that the young person claims. Since all aspects of development point toward an



Photograph by U. of A. Associated Students

Being allowed some freedom in choosing clothing, both from the standpoint of quality and of style will help the young person develop sound judgments that will be useful in later life.

Photograph posed by Mrs. Helena Murphy, Tucson, Arizona, (left) and Miss Mary Monroe, Lansing, Michigan, (right)

earlier maturity of people now than formerly, perhaps mothers need to guard against insisting on clothing that is too juvenile for their daughters even though they themselves wore that style at the same age. On the other hand, daughters need to guard against demanding an outlay of clothing that is not consistent with her needs nor the family income.

## Develop Their Judgments

From the standpoint of development of a young person's judgments, it is important that he or she be allowed increasing privileges in the selection of his clothing. The wife and mother usually is responsible for spending or portioning out the clothing budget as well as a large share of the total income. Since many young people marry early today, girls may face this responsibility sooner than formerly. It will be impossible for them to learn from books all the facts necessary for wise spending, nor from wearing clothing that someone else has selected. In this case, experience is a very good teacher. Some mistakes may be made, but who among adults can claim to never having made one.

## Teach Selection Early

Children can be taught selection from an early age. The very young child may be allowed a choice between a pink or a blue dress for any occasion after the mother has made the initial distinction between play and party clothes. Later, the child may help in the selection at the store, beginning the understanding of the requirements of a garment for a specific need and establishing the realization that what is selected must be lived with. No actual money need be in the child's hands until later when the less expensive items, such as socks, scarves, or mittens will involve less cash outlay, but can teach the value of a dollar. A small beginning, but an early one, seems the important principle.

## Clothing and Social Poise

Clothing aids a great deal in establishing social poise and emotional poise. If a well-adjusted, attractive, personable young person is the goal of both parents and educators, then the contribution that the right clothing can make toward that goal ought not to be overlooked by anyone concerned.