



Field of perennial veldt. This South African grass does well in sandy soil.

Eight New Forage Plants

developed for California ranges

R. Merton Love

SEVEN NEW grasses and one winter annual legume have recently been certified by the California Crop Improvement Association and the seed placed in the hands of seed growers.

These new forage plants will serve to fill a serious gap that has existed in the improvement of the range areas of the state—two of them will contribute to higher production in irrigated pastures. All strains discussed in this article have been widely tested in California for a number of years. The recommendations apply to these certified strains only. Zones of adaptation are given in the accompanying table. The new forage plants, together with adjusted grazing practices designed to maintain them, will add many pounds of meat or wool or butterfat to California's livestock industry.

The Stipas

The nodding and the purple stipa are among the hardiest of the native bunchgrasses of California, with wide adaptation in the Coast Ranges from San Diego to Humboldt counties, and similarly in the Sierra Nevada foothill areas from south to north.

Nodding stipa, the hardier grass extends beyond the tree line of the wood-

land-grass association to the drier areas. Each species has been subjected to selection in the grass plots at Davis for five years and the foundation seed for each is a blend of 12 superior strains. This blend ensures wide adaptability. Seed harvesting is difficult and until more experience is gained only limited quantities of seed are likely to be available for some time.

Smilo

Because of the difficulty in obtaining stands of smilo, use of this valuable grass has been extremely limited. Following numerous trials in the ash of burned brush, however, the certified strain can now be widely recommended since successful stands are almost invariably obtained under such conditions. It is palatable, drought-resistant, and long-lived, and given a chance it volunteers well. Fortunately, smilo is almost the ideal grass from the seed production standpoint. Thus the livestock men should shortly be able to buy this seed in large quantities.

Perennial Veldt

Native to South Africa, this grass has done particularly well in sandy soil in the south and central coastal areas.

A four-acre planting seeded in 1942 near Corona del Mar in Orange County, has now spread over two more acres. Recent tests have indicated its range may extend further north.

Perennial veldt is palatable and drought-resistant, but it is not so long-lived as the stipas or smilo. Because the seeds on the panicles ripen over a very long period, it is difficult to obtain large seed yields. Thus this seed is likely to be high priced, but the fact that it volunteers will help compensate for the initial high cost of seed.

Veldt grass seed is produced in Australia, but until their material has been tested by the Division of Agronomy, ranchers are cautioned against buying imported seed except on a trial basis.

Harlan Brome

Harlan brome originated in the University grass gardens in Berkeley and was presumably introduced from Chile where it is native.

It is a palatable, aggressive plant. As it is a short-lived perennial, it will act as an annual under unfavorable conditions, where it reseeds well and thus maintains itself on the range. It has been observed

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FORAGE PLANTS

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to set seed on stems only two inches in height. It will probably replace or supplement much of the domestic ryegrass currently being so widely used on the range.

Prairie Brome

This strain was first grown in California at the Meloland Experiment Station of the University of California in the Imperial Valley with seed obtained from New Zealand.

Prairie brome is a strong winter grower. It has performed particularly well on coastal ranges. Elsewhere, without irrigation, its use is limited to good soils. There are indications that it is a good irrigated pasture plant. It is definitely distinct and superior to any of the "rescue grasses" of the southwestern United States.

Ryegrass 12

Ryegrass 12 is an increase from a packet of seed obtained in November, 1943, from the Plant Research Bureau, Grassland Division, New Zealand.

It is presumably a sister strain of their short rotation ryegrass. Both are selections from an artificial hybrid between annual and perennial ryegrass made in New Zealand.

Ryegrass 12 is morphologically about intermediate between the parents. It produces early fall growth, recovers more rapidly after pasturing than either annual or perennial ryegrass, and remains green much longer than annual ryegrass. It will

undoubtedly find a place in California's irrigated pastures and good soil on dry-land ranges.

Rose Clover

A winter annual, the foundation seed of rose clover is derived from F. C. 23014. The original seed was obtained from the U. S. Department of Agriculture at Beltsville, Md.

It appears to be less sensitive to low temperatures and short daylength than either bur clover or subclover, and therefore grows more rapidly than either of them in cool weather.

Rose clover is a true clover. It has no valuable burs and there is no intention of its eliminating bur clover. Rather, rose clover will supplement bur clover where it is difficult to obtain satisfactory stands or growth of the latter. It remains green one to two weeks longer than midseason subclover. It is especially useful on poor soils that are slightly acid as found in zones 1, 4, and 5.

All foundation seed of these forage plants is in the hands of capable seed growers. Under the direct supervision of the California Crop Improvement Association, the seed fields of those growers will be given every care, in order that the livestock industry may have better plants with which to revegetate their ranges and irrigated pastures.

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Further information about forage plants is contained in the California Experiment Station Circular 371, "Improving California Brush Ranges," which is available without cost at the office of your local Farm Advisor or from the College of Agriculture, Berkeley 4, California.

HOUSING

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Certain features are required by the State Labor Housing and Sanitation Act—for example, the 75-foot distance from privies to kitchen or mess hall.

The workers' camp and individual units should be well placed with regard to compass directions. Where strong winds occur, buildings should be sheltered behind trees or hedges. Privies should be downwind from dining and sleeping quarters.

If rains usually come from a certain direction, buildings should be protected by natural land features, and placed to secure the best weather resistance.

Where summer heat is severe, bunkhouses should be shaded on the south and west by large deciduous trees.

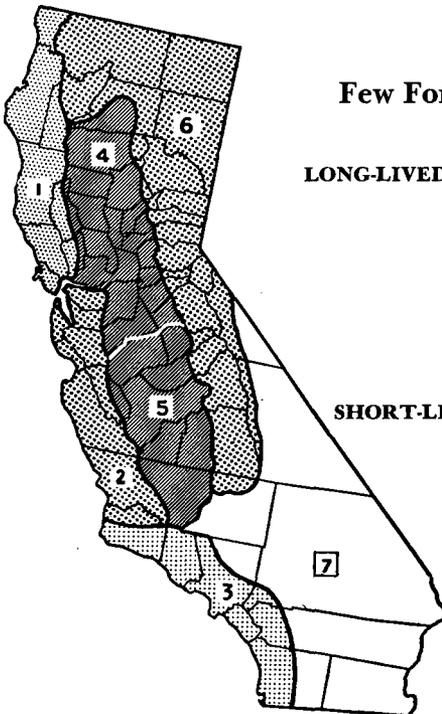
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The University has prepared a series of leaflets on farm labor housing structures and arrangement. The structures meet the requirements of the State Labor Housing and Sanitation Act. They have been approved by the Division of Immigration and Housing.

The leaflets listed below, by number and title, may be secured without cost by addressing the College of Agriculture, Berkeley 4, California.

- B-HD. Details (usually included with plans)
 - B-H1. A Four-Man Canvas-Roof Cabin
 - B-H2. A Two-Man Bunkhouse
 - B-H3. A Six-Man Bunkhouse
 - B-H4. A Two-Room Family Unit with Bath
 - B-H5. Two-Room Bathhouse, Men and Women
 - B-H6. A Farm-Labor Mess Hall with Kitchen
 - B-H7. Camp and Field Privies
 - B-H8. Labor-Camp Equipment
 - B-H9. A Twelve-Man Bunkhouse
 - B-H10. Bunkhouse with Separate Rooms
 - B-H11. Arrangement of Camp Structures
- The California Experiment Station Bulletin No. 472, "Adobe Construction," also is available.

Few Forage Plants for California



LONG-LIVED PERENNIAL BUNCHGRASSES

Plant	Origin	Use and Adaptation	Zone
Purple stipa	Native	Dry range Brushlands; woodland—grass areas	1, 2, 3, 4, 5
Nodding stipa	Native	Dry range Brushlands; drier areas beyond tree line	1, 2, 3, 4, 5
Smilo	Mediterranean	Dry range Brushlands; light soils	1, 2, 3, 4, 5
Perennial veldt	South Africa	Dry range Brushlands; sandy soils	2, 3, 4, 5

SHORT-LIVED PERENNIAL BUNCHGRASSES

Harlan brome	Chile	Dry range	Brushlands; poor soils	1, 2, 3, 4, 5, 6
Prairie brome	South America	Dry range	Brushlands; good soils	1, 2, 3
Ryegrass 12	New Zealand	Irrigated Pasture	Brushlands; good soils	1, 2, 3, 4, 5
		Irrigated Pasture		1, 2, 3
				1, 2, 3, 4, 5

WINTER ANNUAL LEGUME

Rose clover	Europe	Dry range	Brushlands; poor soils, slightly acid	1, 2, 3, 4, 5
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