CURRENT LITERATURE

Range Plants: Forage value, chemical composition, ecology, physiology, systematics


Grazing trials at Tifton show Coastal Bermuda grass to be adapted for upland pastures.


Report on feeding tests with lambs and on the chemical composition of sotol (Dasylirion texanum).


Results of experiments conducted at the Southern Gr. Plains Field Sta. on 24 varieties of wheat, rye, and barley to determine how late in the spring cereals can be grazed economically, relative forage production, chemical composition of forage, and subsequent yields of small grains as affected by severe and moderate clipping treatments.


Phosphate fertilization on a phosphorus-deficient silt loam soil near Plymouth, N. Car. produced no significant change in the composition of soybean hays or bullgrass contaminant. There was no evidence obtained in 2 years' digestion trials with lambs that fertilization affected digestibility of forages.


Methods used to control bitterweed (Actinea odorata) near Sonora, Texas.


Tall fescue grass is adapted as a permanent winter grazing crop in Georgia. Seeding, fertilization, palatability, utilization, grazing management, and seed production are discussed.

Results of a 4-year study conducted in northeastern Nevada of the yield and chemical composition of wire grass and sedge meadow hay clipped at bi-weekly intervals and of 100-day feeding tests with steers on early-cut and late cut meadow hay. Early-cut meadow hay was found to be superior to late-cut hay in feed value.


Its prolific seed production, rapidity of germination, and adaptability to varying climatic conditions have enabled cheatgrass to invade abandoned cultivated land, deteriorated sagebrush-grass, and even natural plant cover which has not deteriorated greatly in Southern Idaho. On poor range, forage production of cheatgrass is 75–85 per cent of that of crested wheatgrass; however, variations in forage production of cheatgrass caused by weather are greater than those of perennial grasses. The high inflammability of cheatgrass creates a distinct fire hazard and the species has spread rapidly where fires have burned sagebrush. Burning in early summer does provide a means of reducing the stands of cheatgrass to such a level as to allow the reseeding of perennial grasses without other treatment. Grazing management of cheatgrass ranges to obtain restoration of perennial grass cover remains a major problem but it is believed that minimum requirements should allow for the protection of cheatgrass ranges against accelerated erosion and loss of forage by fire.


Ecology and management of four weedy junipers of Texas rangelands with especial emphasis on redberry juniper and Ashe juniper. New evidence is cited which indicates that rabbits are a major factor responsible for the rapid spread of these cedars into grassland and abandoned fields. Eradication and control methods are reviewed and recommendations made as to the use of fire and reseeding in the management of treated areas.


Arundo donax has been extensively planted in the sand dunes on the King Ranch in Texas, because it is not very palatable to cattle. Chemical analyses are given for various plant fractions.

Range and Pasture Management: Management plans, surveys, utilization, maintenance

A survey of 13 counties and characterization of 6 major types and practices to improve forest range management and provide integration with timber management.


A discussion of types of pasture, feeding values, characteristics and adaptation of important hay and pasture species, pasture improvement practices, utilization, and management of livestock on pastures in eastern Canada.


A general discussion of the fields of study in range research and the needs for future work.


Reprint of a portion of a manuscript by Earl H. Morris "Archaeological studies of the La Plata district, southwestern Colorado and northwestern New Mexico", Carn. Inst. Wash. 1939, dealing with conditions in the Pueblo area before the advent of white man and the grazing of sheep and cattle.


Procedure used in the measurement of herbage production on artificial revegetation projects at the Great Basin Research Center for the past 10 years. An adaptation of the weight-estimate method in which the weight of herbage in lbs/acre is computed directly from estimates of grams of herbage on 96 sq. ft. plots. The technique may be used in connection with utilization surveys or for comparing production on seeded plots.


An address for the annual meeting.
of the Oregon Cattle and Horse
Raisers Assoc., May 18, 1948, on
practises and methods used in ranch
operation in Eastern Oregon.

PICKFORD, G. D. AND E. H. REID (Pa-
cific Northwest For. and Range Exp.
Sta., Portland, Ore.). Forage utili-
zation on summer cattle ranges in
Circ. 796. 27 pp. Sept. 1948.

Summer cattle ranges provide an
important part of the yearlong main-
tenance of cattle in Eastern Oregon.
The untimbered summer ranges sup-
port bluebunch wheatgrass, prairie Junegrass, and Idaho fescue on
bunchgrass ranges and thin bent
gress and red fescue on dry meadows.
These species are productive and
palatable throughout the growing
season. In timbered areas the major
types are: (1) pine-bunchgrass with
elk sedge, Idaho fescue, prairie June-
grass and bluebunch wheatgrass; and
(2) pinegrass-elk sedge with pine-
grass and elk sedge. Untimbered
grasslands are grazed throughout the
summer; timbered ranges are grazed
principally during the first half of
the season. Under free choice more
forage is obtained from the untim-
bered grasslands Indicators of good
and poor condition are given for the
bunchgrass and dry meadow range
types.

WALKER, A. H. (Range and Forestry
Dept., A and M College, College
Sta., Tex.). A new concept—range
management. Sheep and Goat

The development of the concept of
range management in Texas and the
role played by the Extension Service
in the promotion of grass conserva-
tion.

WYOMING AGR. EXP. STA. (Laramie,
Wyo.). The range lands of Wyom-
ing. A summary of the record of 50
years' study by the scientists of the
Wyoming Agricultural Experiment

Excerpts from the publications of
the Wyo. Agr. Exp. Sta. from 1891
to the present dealing with the con-
tion of Wyoming's forest and arid
range lands, the arguments for and
against public ownership of range
lands, the nature of range depletion,
and the possibilities of improving
existing range by management. The
quoted statements generally reflect
the opinion that little or no permanent
damage by the grazing of livestock
has been or is being done to Wyoming
ranges.

Range Improvement: Natural and artificial revegetation,
noxious plant control, mechanical improvements

Tucson, Ariz.). An improved spray
machine for experimental plot and
field work. Agronomy Jour. 41: 47–

Modifications of a 150 gallon trailer-
mounted sprayer for noxious brush
control include a reinforced boom, 4-
wheel spring trailer, fluid meter and
pressure gauges, and a 7-gallon paint-
spraying tank attachment for the
treatment of small plots.

BROWN, A. L. AND E. H. MCILVAIN
(Arizona Agr. Exp. Sta., Tucson,
Ariz.; U. S. Southern Gr. Plains Field
Sta., Woodward, Okla.). Suggested
techniques for testing airplane appli-
cation of herbicides. Agronomy Jour.

Information is given on the type of
spray equipment for planes, character of experimental plots, calibration of nozzle delivery, and preparation of chemicals for noxious brush control.


Sodium and ammonium trichloroacetates are effective in the control of noxious perennial and annual grasses at rates of 80-150 lbs. per acre. Prickly pear was killed with application of 1/2 lb./gal. of water in July.


Seed yields were increased considerably and certain broadleaved weeds were controlled with application of 2,4-D and di-nitro chemicals made when weeds were small and before buffalo-grass had reached the flowering or fruiting stage.


A summary of recommendations for the use of 2, 4-D by airplane application for the control of sand sagebrush. Lists of airplane spraying companies and vendors of spraying equipment and chemicals are included.


A report on the restoration of vegetational cover on the Land Utilization Projects in the Rolling and High Plains of Texas and Oklahoma.

Range Influences: Forests, watershed protection, wildlife, recreation


Attempts to deal quantitatively with the effect of annual precipitation upon range forage production are handicapped by the lack of a suitable measure of forage production on range land. In this article the range condition data collected monthly by the Bureau of Agricultural Economics were evaluated and found to be fairly reliable index to the volume of range forage produced. The monthly range condition index data for the 17 western states collected over a 24-year period were analyzed to determine: seasonal movements of the index by states and regions, statistical distribution of the monthly indexes, regularity of change from month to month, the relation of range condition to annual precipitation of the current and preceding year, and the relation of the index of range condition to the associated index of livestock condition determined concurrently from estimates by ranchers and farmers. The high correlation ratios obtained between total annual precipitation of both the current and preceding years and the range condition index for the Northern and Central Great Plains states are considered to provide an accurate method of forecasting forage production, within certain limits, for a period several months ahead. It is believed that the relationship should facilitate adjustment of livestock numbers to the cycles of annual precipitation in that area.

The need is indicated for interpretive soil classifications in range management studies. Such classifications may indicate: (1) suitability of a soil for producing different types of forage; (2) yield potentials or the increase in carrying capacity to be expected by improvement of management; (3) areas for reseeding; (4) areas where fencing and water development may result in increased livestock production. Lack of specific information of soil-plant relations for the western range area is stressed. Modifications of the soil series as mapped at present appear to be the most desirable unit for classification of wildland soils.


A 2-year comparison of the effects of spring and fall burning in shortgrass, little bluestem, and western wheatgrass habitats in a mixed prairie and in an area of sand dropseed on land abandoned from cultivation for 25 years. Spring burning proved to be more harmful than fall burning in all types. In the shortgrass habitat the basal cover was reduced to 62 per cent on the fall-burned area and to 20 per cent on the area burned in the spring. Little bluestem lost 35 per cent of its previous cover.


A method of computing the expected runoff from flood producing storms is described from studies on the Ephraim Creek watershed in central Utah. The system involved: (1) recognition of classes of site deterioration or watershed condition based on plant density and the extent of visible erosion; (2) assignment of runoff values to each condition class on the basis of infiltrometer studies. Flood potential of a drainage basin may be approximated by this approach as well as the extent of improvements or watershed protection requirements needed.


Six pastures with a long history of continuous cattle grazing near West Chester, Penn. were rated as to beef productivity. Four pastures had received no fertilizer; two had had lime and phosphate. The highly-productive improved soils and the best unfertilized native-pasture soils have a higher degree of base saturation, increased replaceable bases (Ca, Mg), and increased P content. "Chem-osorbed" phosphorus is more closely related to productivity than any of the other fractions studied.

Range and Livestock Economics: Land utilization, public land administration, cost of production, coordination of range and ranch


Results of a survey of 48 farms in n.e. Louisiana on grazing practices, methods of establishment and maintenance of improved pastures, and economics of gains from woodland pastures.


The extent and distribution of the major agricultural land uses and a general analysis of the land use situation in the U. S. Data are presented on the acreages of pasture and range land by geographic regions. Trends in land use, present conditions, and expected trends in utilization are discussed.


The present status and future development of irrigation agriculture in the 17 western states. Physical and climatic characteristics of the area presented as colored maps include: moisture regions, frequency of dry years, average length of frost-free season, and great soil groups. Of particular interest to range managers is the section on land utilization which includes a detailed colored map of the major land use areas.

Range Livestock Management: Production, feeding, marketing, history


Protein supplements containing 25 per cent and 50 per cent of N as urea in pellet form were compared in maintenance, wintering, and fattening rations fed to steers and lambs in nitrogen-balance trials; identical rations lacking urea were used as checks. Lambs appeared to be more efficient than steers in utilizing urea. Nitrogen retention by steers and lambs on each type of ration was increased by the additional nitrogen supplied by urea; the apparent digestibility of ration nutrients other than protein was unaffected by urea content.


A comparison of the effectiveness of currently-recommended rotenone and rotenone-sulfur cattle-grub sprays with new chemicals such as benzene hexachloride and chlordan demonstrated the superiority of the former group.


Results of yearly mineral feeding tests of steers on summer pastures in 1942-1947 indicate that tricalcium phosphate is equal to steamed bone meal as a mineral supplement for cat-