

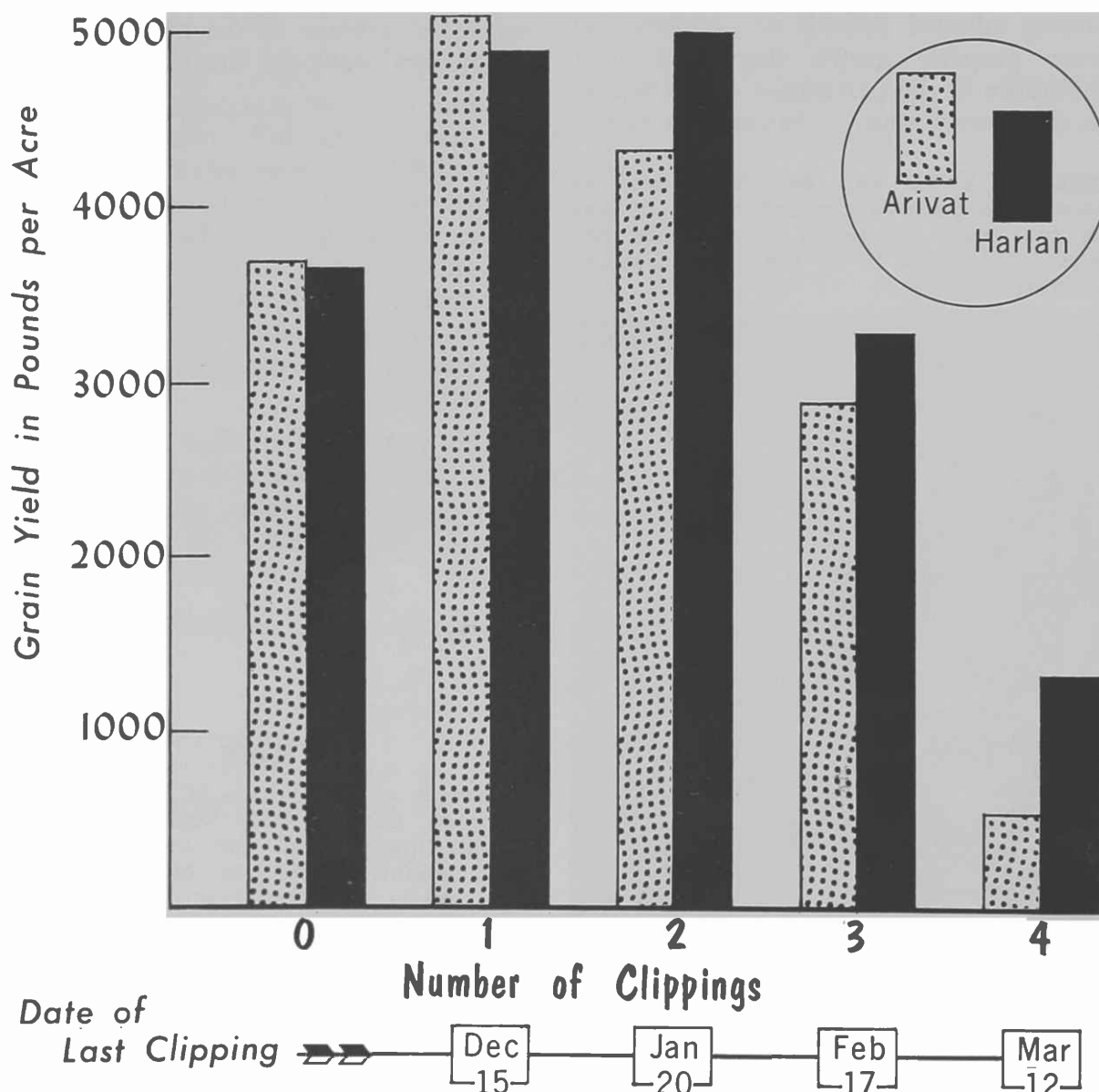
BARLEY

For Pasture Plus Grain

Harlan, planted in October, is best bet

R. K. Thompson and A. D. Day

Over 200,000 acres of barley are grown in Arizona annually. An estimated 25 per cent of this acreage is used entirely for forage, or pastured prior to grain harvest. Clipping or grazing tends to reduce lodging. With the continued lodging problem with barley grown under irrigation in Arizona, a much greater acreage could be utilized for pasture.



RESPONSE OF Arivat and Harlan barley varieties to grazing simulated by clipping. Note the decreased yield as a result of lodging when not clipped.

Several barley varieties were evaluated for pasture forage production at the Mesa Experiment Station over a four-year period (1958-61). The barley was seeded in a moist seedbed at the rate of 100 pounds of seed per acre. From 150 to 200 pounds per acre of elemental nitrogen was applied in two to four split applications (50 pounds at planting time and additional applications after the earlier clippings).

The first post-planting irrigation was supplied prior to the first clipping to firm the soil. Subsequent irrigations were given after each clipping. The plots were clipped to simulate grazing at two-and-one-half inches above the ground level. The clippings were made with a sickle mower at the onset of jointing when the plants were approximately 12 to 14 inches tall.

3 Reasons For Grazing

For maximum pasture forage production barley should be grazed at the onset of the jointing stage of plant growth for three reasons: (1) It controls regrowth for grazing uniformity; (2) It provides an opportunity to fertilize and irrigate between harvests, and (3) It permits the ground surface to dry out for harvesting and minimizes soil compaction from grazing.

Under simulated pasture conditions, maximum production has been obtained when clipping was delayed until the roots were well established and the plants were eight inches high. Clipping tests at Mesa have indicated that for uniform and sustained vegetative growth, barley should be grazed at the onset of the jointing stage.

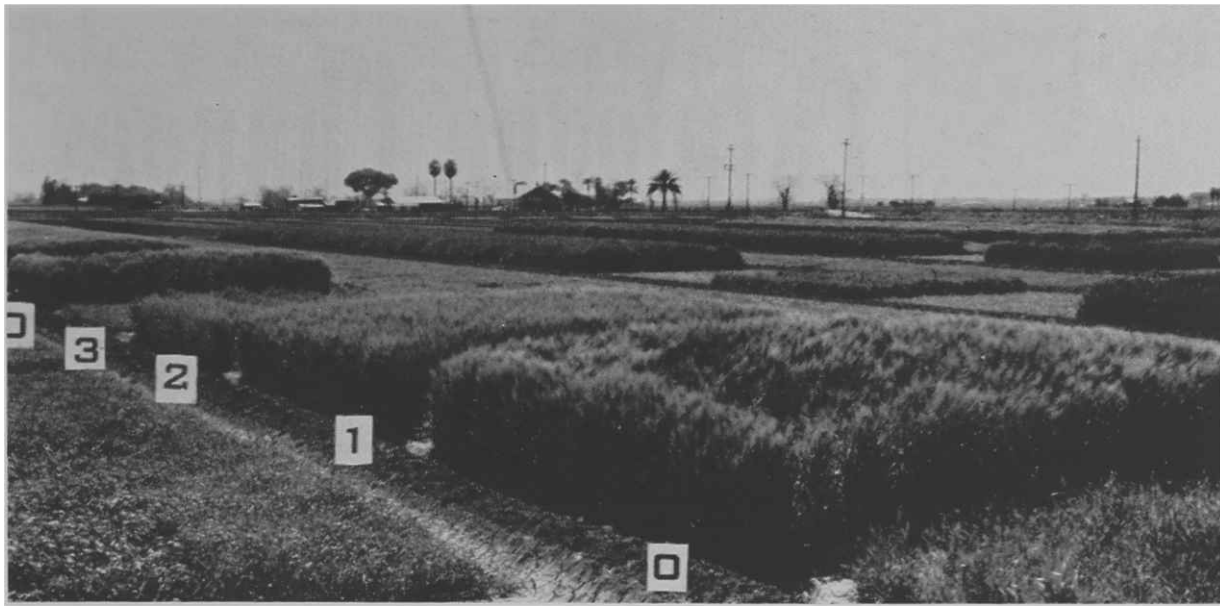
A delay in clipping after the onset of jointing resulted in larger total tonnage for any one harvest, but quality decreased and subsequent regrowth was reduced in quantity and uniformity. Clipping or grazing before jointing became increasingly important as the season progressed.

Plant Harlan In October

Two years' data on dates-of-planting for Harlan barley are available from Mesa tests. Harlan planted in October was more productive than when planted in September. November to January plantings resulted in greatly reduced yields. These data indicate that Harlan barley should be planted in October for maximum pasture forage production.

Effects of clipping Harlan and Arivat barley on subsequent grain yields have

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GENERAL VIEW of the 1960-61 Harlan barley simulated pasture and grain yield test at the Mesa Station. Numbers indicate how many times plots were clipped.

been evaluated at Mesa for three years (1959-61). Barley was clipped two times, or until late January, without reducing grain yields. Maximum grain production was obtained after one clipping for Arivat and after two clippings for Harlan.

Unclipped Barley Lodged

When the plots were not clipped, severe lodging occurred and lower grain

yields were obtained. The grain yields of Harlan, as shown in the graph, were maintained at a higher level following additional clippings at later dates as a result of less lodging. Also, more forage was obtained from the additional clippings.

Four varieties were compared for pasture forage—Harlan, Arivat, Vaughn and Hooded Atlas. Harlan consistently

Pasture Production of Four Barley Varieties. Grazing Was Simulated by Clipping at the Onset of Jointing.

Variety	Yield of Green Forage in % of Harlan				
	1958	1959	1959	1960	1961
Harlan	100	100	100	100	100
Arivat	79	77	94	83	87
Vaughn	99	—	—	86	86
Hooded Atlas	—	—	90	82	82
Yield of Harlan in tons per acre	15	14	11	26	24
Date planted	10-26-57	10-31-58	12-15-58	10-15-59	10-22-60
Number of clippings	5	5	4	6	6



HARVESTING pasture forage at onset of jointing stage of plant growth. Green weight of samples was taken at time of harvesting.

produced more total green forage than the other varieties, as shown in the table. Harlan was slower in reaching grazing height. In early growth it was less erect than Arivat, Vaughn or Hooded Atlas.

Harlan Best For Pasture

Harlan tillered more and retained its vegetative state longer prior to jointing. Of the barley varieties tested, Harlan was the most desirable for pasture production.



October

- 1—Cochise County Fair, Douglas
- 1—Greenlee County Fair, Duncan
- 1—Regional 4-H Leaders' Conference, Tucson (Pima, Pinal, Santa Cruz counties)
- 6-8—Graham County Fair, Safford
- 10—Dairy Field Day, U of A Campus
- 12-13—Plant Virus Disease School, U of A Campus
- 16-17—W-46 Regional Research Meeting, Animal Science Dept., U of A Campus
- 17—Cotton Ginning School for County Agents, Cotton Research Center, Tempe
- 18—Cotton Field Day, Cotton Research Center, Tempe
- 21—Arizona Hereford Assn. 4-H Field Day, U of A Campbell Ave. Farm
- 19-22—Pinal County Fair, 11-Mile Corner
- 25-27—W-38 Technical Committee Meeting, U of A Campus
- 27—Fall Field Day, Mesa Experiment Station
- 31—Western Vegetable Growers Annual Meeting, San Francisco, Calif.

November

- 1-2—Western Vegetable Growers Annual Meeting, San Francisco, Calif.
- 1—Citrus Field Day, U of A Citrus Research Unit, Phoenix
- 10—Citrus Field Day, Yuma Experiment Station
- 26-30—4-H Club Congress, Chicago, Ill.

December

- 9—Arizona Angus Assn. Field Day (4-H & FFA), Campbell Ave. Farm, Tucson