WHEN SHOULD BARLEY AND OATS FORAGE BE HARVESTED?

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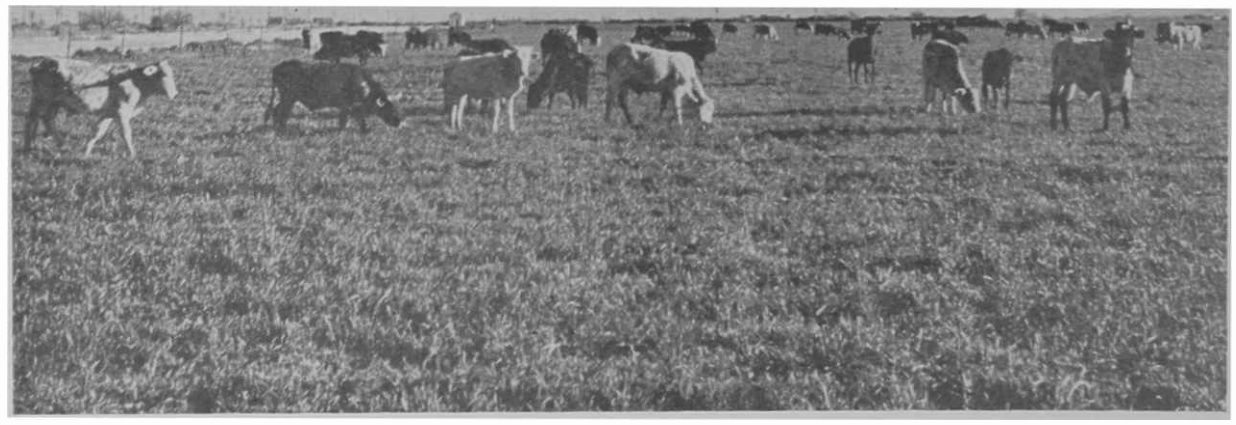

SMALL GRAINS provide excellent winter pasture for steers in southern Arizona.

More than 200,000 acres of barley and oats are grown in Arizona. Approximately 50,000 acres are used entirely for forage, and an additional 50,000 acres are pastured prior to grain harvest. In addition to extensive beef and dairy cattle operations, over 200,000 sheep are wintered in southern Arizona annually. Small grain forage plays a vital role in these enterprises.

In 1962, an experiment was conducted on the Mesa Branch Experiment Station at The University of Arizona to evaluate the yield and quality of forage from Harlan barley, Arivat barley, and Markton oats harvested at four stages of growth. These are varieties commonly used for forage in southern Arizona. Moisture, dry matter, digestible laboratory nutrients (D.L.N.) and total protein data were obtained from the pre-joint, joint, boot and early head stages of growth. D.L.N. is a simplified laboratory method for estimating total digestible nutrients.

Yields Highest at Heading

Dry matter, D.L.N., and protein yields were highest for all varieties when harvest was delayed until the early head stage of growth as shown in Figure 1 and the table on this page. The number of harvests, which varied from 6 to 10, was reduced with each delay in stage of harvest. Total dry matter and D.L.N. showed an increase as the plants developed. Per acre yield of dry matter and D.L.N. at the early head stage of growth was over 5 and 3 tons, respectively. The per acre yield of protein ranged from 704 pounds at jointing to 870 pounds at the early head stages of growth.

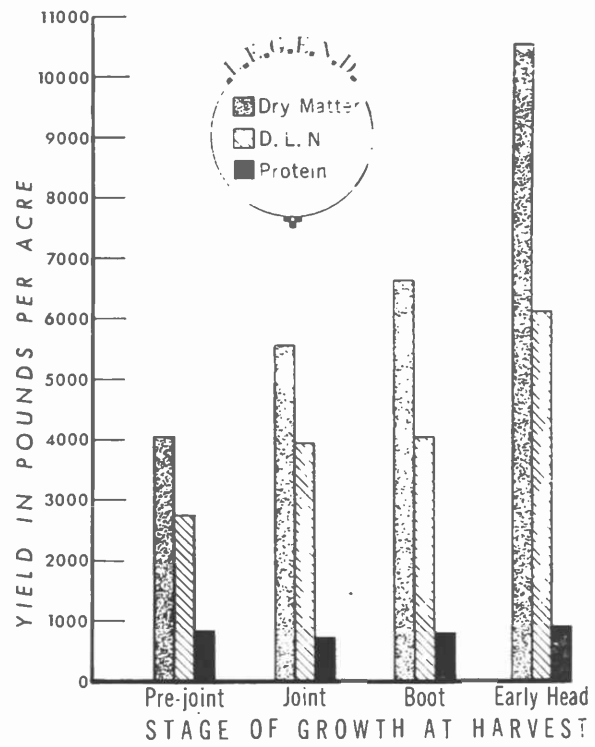

FIGURE 1, ABOVE, shows average yield per acre of dry matter, digestible laboratory nutrients (DLN) and total protein from barley and oats forage harvested at different stages of growth. (Mesa, 1962).

Moisture, D.L.N., and total protein percentages commonly are used to indicate forage quality. These measurements showed a reduction in quality in the overall development of plants from pre-joint to early head (Figure 2 and table). There was a constant

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Average Yield of Dry Matter, D.L.N., and Total Protein From Barley and Oats Forage Harvested at Different Stages

Stage of growth at harvest	*Total yield in pounds per acre*			
	Crop and variety	*Dry matter*	*D.L.N.*	*Protein*
Pre-Joint	Markton Oats	3960	2694	771
	Harlan Barley	4042	2768	767
	Arivat Barley	4042	2765	812
	Average	4015	2742	783
Joint	Markton Oats	6560	4742	609
	Harlan Barley	5680	3963	930
	Arivat Barley	4314	3093	572
	Average	5518	3933	704
Boot	Markton Oats	6642	4616	709
	Harlan Barley	7022	3690	825
	Arivat Barley	6111	3737	712
	Average	6592	4014	749
Early Head	Markton Oats	11841	6453	772
	Harlan Barley	11256	6714	982
	Arivat Barley	8465	5179	855
	Average	10521	6115	870

Table based on 1962 trials at Mesa, Ariz.

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decrease in percent of protein. Moisture and D.L.N. percentages fluctuated, with the highest D.L.N. at jointing and a slight increase in moisture at the boot stage.

Varieties Differ

At the pre-joint stage of harvest, yields of dry matter, D. L. N., and total protein in Markton oats, Harlan barley, and Arivat barley forage were similar, as shown in the table. As harvest was delayed to later stages of growth, Markton and Harlan surpassed Arivat in dry matter and D.L.N. All varieties showed some variation in protein.

These data were from plantings made October 13. Forage was available in mid-December, mid-January, late February, and late March for the pre-joint, joint, boot, and early head stages of harvest, respectively. Other Arizona research has shown that maximum available pasture forage is dependent upon a minimum delay in planting after October. However, December and January plantings have produced satisfactory forage yields when harvest was delayed until heading.

Heading Stage Recommended

Small grain forage utilization is flexible. For maximum returns from small grains forage, delay harvest until heading. Although there may be a decrease in quality from delayed harvest, it is more than offset by the increase in total feed value.

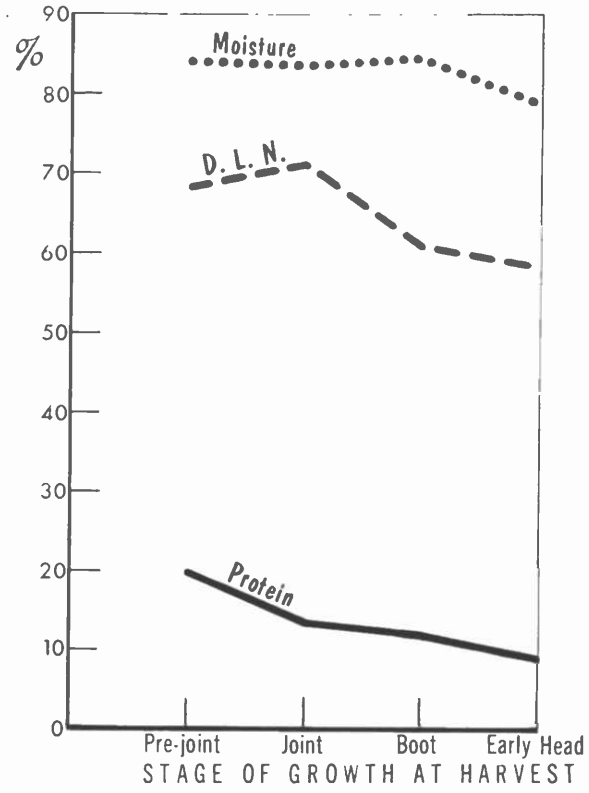

FIGURE 2 ILLUSTRATES average percentage of moisture, DLN and total protein in barley and oats forage harvested in different stages of growth.

Todo avicultor sabe o debe saber que la rentabilidad de su gallinero está basada en conseguir más huevos por cada ponedora, porque son estos huevos que le proporcionarán mayor beneficio. Este es el gran secreto para el éxito en la avicultura moderna. En general, puede decirse que un lote de ponedoras que promedió, en un año de puesta, 230 huevos por ave rinde doble ganancia que otro lote de igual número de aves con una puesta de sólo 205 por gallina.

SEPTEMBER

14-18—State 4-H Advisory Committee U of A Campus, Tucson

OCTOBER

1-3 —National 4-H Week — statewide

8—Meeting of directors, Arizona Assn. of Soil Conservation District Supervisors, Safford.

9—Small Watershed Field Day, Safford.

21—Cotton Research Center Field Day—Tempe

21—Annual meeting, Arizona Agricultural Chemicals Assn., Scottsdale.

NOVEMBER

6-15—Arizona State Fair, Fair grounds, Phoenix.

Dairying Important

Cash receipts from dairying in Arizona are estimated at $26.4 million during 1963. Receipts from the sale of milk and milk products accounted for $24.2 million while the sale of dairy animals accounted for the remaining $2.2 million. Total sales of milk were about 483 million pounds, of which 82 percent were in Class I, 8 percent in Class II, and 10 percent in Class III.

(CIA) report on slow Russian economic growth.

Khrushchev told an agricultural meeting of the Soviet Communist Party Central Committee that "the world of capitalism is literally feeling our breath." At the same time, he told Soviet farmers that the key to better crops lies in the capitalist nations of the West.

In his speech, Khrushchev diagnosed the ills of Soviet farming and recommended certain remedies. He also touched briefly on

Mystery Picture Answer is Amado Lad

The little lad with the Hereford heifer, posed in the picture on Page 8, is Gilbert Aguirre III, five-year-old son of Mr. and Mrs. Gilbert Aguirre Jr., of Amado, Ariz.

This little third generation cow poke was winner of the registered heifer given by the Arizona Junior Hereford Association at the Arizona National Livestock Show.

The picture was furnished to us by Mrs. Carl G. Stevenson, one of Arizona's most energetic and able Cowbelles.

For no reason at all, this attractive picture reminded us of an old poem (the author unknown) and we hope the Aguirres and Mrs. Stevenson will forgive our quoting from: "What Is a Boy?"

A boy is partly angel, partly not;
He's often found with cowboy boots or drum
Or frog, or bits of string, in some odd spot
He thinks is interesting, adventuresome.

A boy is never still; he moves about
Across the margin of his world of play,
Seeking the why of things, and finding out
What makes the world go 'round from day to day.

A boy is rough and tumble, give and take;
Mixed with a sweetness that would melt your heart.
His parents will move mountains for his sake
And give him love which has no counterpart.

He's a craftsman, builder, dreamer—In his face
Are hopes as high as stars, as wide as space.