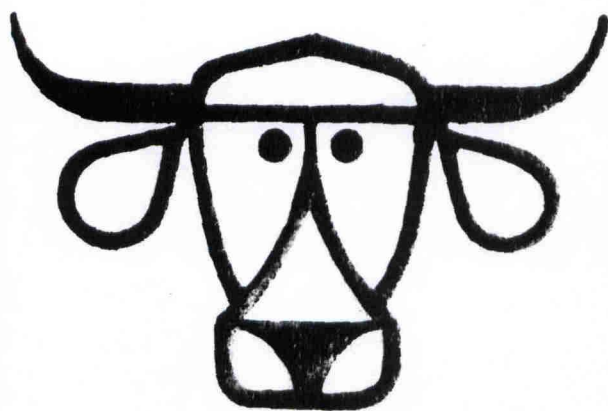




Forage Research in Texas

Departmental Technical Report No.80-6
Department of Soil and Crop Sciences

LE - 0021
~~LE~~Project: H-6254
Date: 1980
Worker: W. T. W. WoodwardAUSTRIAN WINTER PEAS FOR USE AS A
FORAGE OR GREEN MANURE CROP

OBJECTIVE:

To evaluate and identify Austrian winter pea varieties for use as a forage and green manure crop.

PROCEDURE:

Five varieties of Austrian winter peas were provided by Dr. Dick L. Auld, Assistant Professor at the University of Idaho, to be tested in Weslaco as part of a national AWP forage trial. The varieties (Melrose, Fenn, Common, ID 89-1 and Romack) were planted in a Latin square design on a Willacy fine sandy loam soil. Plots were 4 ft. x 20 ft. with 5 ft. alleys between each plot to allow for plant spread. Plots were planted on October 2, 1978 and October 19, 1979; harvested on March 23, 1979 and January 18, 1980 with a flail type small plot harvester. Vine protein and total vine nitrogen was determined at the University of Idaho. In vitro digestibilities were determined by Dr. E. C. Holt at Texas A&M University.

RESULTS AND DISCUSSION:

Forage yields of the five varieties ranged from 1.8 to 0.5 tons of hay per acre in 1978-79 (Table 1) and 3.1 to 1.4 in 1979-80 (Table 2). The highest yielding variety in the trial for both years was 'Romack.' Lower yields for the first year were attributed to damage by grub worm, lesser corn borer, green pea aphid, rabbits and most severely by mildew. In the second year (1979-80), the plots were affected by rabbits and green pea aphid; however, plots were harvested when mildew first appeared on the lower leaves of the plants. Higher yields were attributed to the milder winter and an early harvest which avoided mildew damage. Although plots were irrigated after the harvest, no regrowth was observed.

The highest yielding line (Romack) also had the lowest percent vine protein. Total vine nitrogen ranged from 66.0 to 25.6 for Romack and ID 89-1, respectively (Table 1). Although higher second year yields would increase these values, a mildew resistant line would increase the possibility for use of AWP as a green manure crop. Dry matter digestibilities were excellent for all varieties; however, no statistical differences were found (Table 1).

Table 1. Forage yield and vine nitrogen of five varieties of Austrian winter peas at Weslaco, Texas in 1978-79.

Variety	Forage Yield		Vine Protein	Total vine Nitrogen	in vitro digestibility
	Silage 70% Moisture	Hay 12% Moisture			
	-----tons/acre-----		-%-	--lbs/acre--	-%-
Romack	4.1 a ¹	1.8 a	16.4 ² c	66.0 a	67.4
Melrose	2.8 b	1.2 b	17.2 c	46.9 a	65.3
Fenn	2.5 b	1.1 b	18.5 b	46.6 a	65.9
Common	2.5 b	1.1 b	18.4 b	45.5 a	65.7
ID 89-1	1.0 c	.5 c	22.3 a	25.6 b	64.7

¹Means within a column not followed by the same letter differ at the 0.05 level of probability by Duncan's multiple range test.

²Values determined at the University of Idaho, Moscow.

Table 2. Forage yield of five varieties of Austrian winter peas at Weslaco, Texas in 1979-80.

Variety	Forage Yield	
	Silage 70% Moisture	Hay 12% Moisture
	-----tons/acre-----	
Romack	10.7 a ¹	3.1 a
Common	9.5 ab	2.7 ab
Melrose	9.0 bc	2.7 b
Fenn	7.9 c	2.3 b
ID 89-1	5.4 d	1.4 c

¹Means within a column not followed by the same letter differ at the 0.05 level of probability by Duncan's multiple range test.