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ferences may be expected in reproduction performance during the DES-feeding period but reproductive problems may arise later which is indicated by the lower reproductive performance of these animals during their first lactation.

SUMMARY

A 210 day feeding trial was conducted in which seven heifers were fed 10 mg of diethylstilbestrol (DES) daily. An equal number of heifers served as controls and were fed the same ration minus the DES. During the feeding period the DES-fed heifers had an average daily gain of 1.70 lbs. and the controls 1.51 lbs. This difference was not statistically significant. There was no observable difference in mammary gland development or the external genitalia. One infantile uterus was found in a DES-fed heifer, and irregular estrous cycles were observed in another. The conception rate of the controls was 1.4 services per calf, and of the DES-fed group 1.8 services per calf. Later observations on these heifers show high incidence of poor reproductive performance among the DES-fed heifers when they were bred during their first lactation.

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Applied Plant Science . . .

C. M. Gregg, Editor

CAN TEXAS PRODUCE SUGAR BEETS PROFITABLY

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Both farmers and Experiment Station personnel are endeavoring to determine the feasibility of producing sugar beets in various sections of Texas. With the U. S. Market closed to one of the principal sugar producing countries which formerly supplied the needed sugar, the need for a new source of supply has increased. Only slightly more than one-third of the sugar consumed in the U. S. is now produced in this country.

There are many factors involved in success-

ful sugar beet growing. Farnsworth (4) suggested (a) the lack of plant nutrient supply, (b) deterioration of soil structure and (c) disease as being the three chief limiting factors, any one of which would depress sugar beet yields. The same author also states (4) (5) that the air capacity in the soil for optimum sugar beet growth ranges from 12 to 22 per cent. Both Cook (3) and Doneen (3) imply that soil moisture is not limiting, so long as some readily available water is in the soil.

Ulrich (9) and Gregg (6) reported that a nitrogen deficiency produced beets with a high sugar percentage, while an excess of nitrogen resulted in beets with a low sugar percentage.

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The theory was that a heavy supply of nitrogen at the first of the season that would be depleted near the last of the growing season could result in both high yield and high sugar percentage from the crop. Along the same area of study, Cook and Davis (2) found the sucrose content in beets following alfalfa lower than in those following corn in a rotation.

Gregg (6) determined that the kind of sod on the land preceding the sugar beet crop influenced the yield of sugar beets. He found a close correlation between the extensiveness of root growth of the sod crop and the yield of the sugar beet crop.

Sugar Beets have been produced on the High Plains of Texas for more than twenty years on a commercial basis (7). That this is a sound and profitable enterprise is indicated by the continued practice. For the past eleven years the yields have averaged 17.5 tons per acre with 13.74 percent sugar. With the establishment of a processing plant in 1964 at Hereford, Texas, the acreage is expanded to more than 22,000 acres. In this area the sugar beets are grown under irrigation, and should be on about a five year rotation system for best soil management.

Exploratory plantings of sugar beets were made in the Rio Grande Valley (8) in 1950 and 1962. In these plantings the yields were not so high as had been received on the High Plains. High sugar percentages were associated with low tonnage yields of roots.

In 1963-64 a study was initiated at the Texas Agricultural Experiment Station Lower Rio Grande Valley Research and Extension Center (8) for the purpose of evaluating yield and quality potential of several varieties of sugar beets. These beets are grown as cool season crops and at the May 19 harvest those varieties planted on Willacy sandy loam soil produced yields ranging from 11.7 percent to 13.3 percent. The variety producing the highest yield had the lowest sucrose percentage and the variety with the lowest yield had the highest sucrose test.

Privately initiated tests and experiments are being carried on by farmers near San Antonio, Texas. This move has been spearheaded by Mr. Henry Vander Walle (10) a very successful and aggressive farmer west of San Antonio. He has two or three years experience with very good

yields under irrigated farming conditions. This effort is being joined by Extension Agents and interested farmers in a thirteen county area of Central Texas.

In view of favorable results in the High Plains, in the Rio Grande Valley and in the San Antonio areas of Central Texas, it is quite obvious that sugar beets can be grown successfully in Texas where irrigation water can be used. Also the October 1 Texas Crop Report estimated the 26,000 acres of sugar beets in Texas will yield an average of 17 tons per acre.

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Soils . . .

One manner of classifying grasses for southern lawns is according to method of establishment.

Grasses that are usually established by sowing seed are common bermudagrass, carpetgrass and Pensacola bahiagrass. Seeds of these grasses are usually in good supply and of good quality.

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GRASSES FOR SOUTHERN LAWNS

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