Forest, were chosen as follows: (1) lower area (Black Hill) from 2,000 to 2,200 feet elevation; (2) intermediate (Cave Creek) approximately 3,500 feet; and (3) upper of which there were two planting sites with elevations of about 5,300 feet. One of these was located at Pine Creek near Young and the second at Buckhead Mesa, between Pine and Payson. Small plantings were made on the open range as well as the major plantings in fenced areas (cattle exclosure). The plantings on which these results are based were made in 1945. Brush was cut and strewn over a part of most of the plots to serve as a mulch. The annual precipitation rates are 17.5, 11, 24, and 22 inches, respectively.

At the end of the third year (1947), the planting at Black Hill (Table 1) and Buckhead Mesa (Table 2) were the only ones of sequence. At the former area, of the 21 species tried, the two love grasses, *Eragrostis lehmanniana* and *E. chloromelas*, thus far have proved the most drought resistant. A few plants of *Muhlenbergia porteri* and *Chloris cucullata* were surviving under the mulch only (Table 1).

The survival at Black Hill is based on drought resistance since temperatures sufficiently low to cause freezing injury are not prevalent. However, the survival at Buckhead Mesa is dependent on ability to withstand freezing injury as well as drought.

It is rather significant that in all cases of survival, much heavier stands were found under the mulch as compared to the unmulched portion of the plots. Therefore, in the Southwest, it may be necessary to provide some sort of mulch or shade to establish permanent stands of grass in range reseeding practices.—B. IRA JUDD, Department of Agriculture, Arizona State College, Tempe, Ariz.

**PRE-EMERGENCE CONTROL OF WEEDS IN CORN WITH CALCIUM CYANAMIDE**

The possibility of pre-emergence control of weeds in corn by use of cyanamid was investigated at the New Jersey Agricultural Experiment Station in 1947.

The corn hybrid, U. S. 13 was planted in a loamy sand soil on May 9, and cyanamid was broadcast over the plots immediately after planting. Granular and pulverized forms of cyanamid were applied at three rates, viz., 150, 300, and 600 pounds per acre. Half of the treated plots were raked after application and half were left unraked.

This area was plowed April 15, and 850 pounds per acre of a 5–10–10 fertilizer were broadcast and disced in on April 21. The area was harrowed the day prior to planting. The surface of the soil was moist when the cyanamid was applied, and the soil temperature immediately below the soil surface was 52°F. Four hundredths inch of rain fell 4 days after planting, and nearly 0.25 inch of rain fell each day from May 18 to May 26.

No injurious effects from cyanamid to the corn plants were ob-

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1Acknowledgment is made to the American Cyanamid Company for their support of this project.

2The term “cyanamid”, final “e” omitted, refers to the commercial product.