

FEEDING VALUE OF DIFFERENT OAT VARIETIES

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Oats is a major grain crop and North Dakota ranks as the third leading oats producing state in the United States with 11 per cent of the 1973 national production. Recent agricultural statistics indicate that approximately 50 per cent of the oats grain is fed to livestock at or near the area of production. Any differences in feeding value of oats would have obvious implications concerning variety selection for planting and feeding by livestock producers.

Recent information from various sources has indicated that oat varieties may differ in feeding value. Therefore, a preliminary investigation using the growing rat as the experimental animal was conducted with three varieties of oats.

Selection of Oat Varieties

Oat varieties grown in North Dakota may be grouped into three broad categories:

1. High yield, low protein, such as Cayuse and Kelsey.
2. Average yield and protein, such as Kota, Otter or Sioux.
3. Low to average yield, high protein, such as Dal, Froker or Chief.

Most of recommended varieties are in the second category: average yield and protein content.

The acreage of Cayuse and Kelsey varieties planted in recent years in North Dakota has increased because of their yield advantage over most varieties. Chief, Dal and Froker, because of the higher protein content, may be preferred by companies producing oat products for human consumption. This higher protein content also could be advantageous to livestock producers in certain

situations. Cayuse, Kota and Dal were selected as varieties representative of their respective "categories" described above.

Selection of the Test Animal

Limited supplies of each oat variety grown under identical conditions were available from seed stocks maintained by the Department of Agronomy, and it was necessary to use a small animal in this preliminary evaluation of possible varietal differences in feeding value. In addition, the rapid rate of weight gain by the young rat makes dietary protein quality extremely important.

Formulation of the Rations

Critical evaluation of protein content and protein quality required that each oat variety be fed with and without supplemental protein. Soybean meal (8 per cent of the ration) was used in the rations containing supplemental protein. All rations contained vitamins and minerals sufficient to meet the requirements of the young rat. The oats were finely ground prior to mixing and all rations contained a fat-chromic oxide mixture to reduce dustiness and permit calculation of the digestibility of ration components.

Interpretation of Results

The single most important point to recognize is that while generalizations may be made from rat data, no assurance can be guaranteed that the experimental results can be directly applied to farm livestock. For example, the data reported here are much more meaningful to swine or poultry producers than North Dakotans concerned with cattle, sheep or horse production.

The high-protein variety (Dal) was markedly superior to the other varieties evaluated (Cayuse and Kota) when no supplemental protein was

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