

ROLE AND IMPORTANCE OF ALFALFA IN WKU TEACHING/RESEARCH/FARM PROGRAMS

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Alfalfa is the oldest and most widely grown forage legume in the world and in Kentucky, where approximately 250,000 acres are produced. It has gained this top position through producing forage suitable for most classes of livestock, by being drought tolerant, and by fixing atmosphere nitrogen.

Over the centuries alfalfa has encountered problems that have been alleviated through breeding and management practices. Bacterial wilt was a major threat early in alfalfa's introduction into the U.S. Ranger and Buffalo varieties provided wilt resistance. In the 1960s, alfalfa weevil challenged researchers from both public and private agencies and across different disciplines. The search for weevil resistance involved screening thousands of plants. An effective chemical treatment for weevil control was prohibited because of its potential toxicity to human health. Alfalfa continues to be adversely affected by diseases and insects, especially in hot humid climates.

Alfalfa's high yield of nutritious forage can only be obtained by careful, timely management. The soil must be deep and well-drained with adequate nutrients, especially potassium. For quality of forage, the plants must be harvested or grazed at the proper stage of maturity. Carefully monitored rotational grazing is required for high production and stand longevity. Harvesting alfalfa for feed is difficult because the high moisture content and level of nutrient contributes to microbial activity. Also, drying and transporting can result in leaf loss, lowering nutritious value. The recent application of "wet bag" technology to alfalfa storage has given positive results.

Weed competition has been a major factor in alfalfa seedling survival and stand longevity. The problem is being greatly diminished through the utilization of genetically modified (GMO) varieties that are resistant to glyphosates. Roundup resistant varieties growing on the WKU farm show great promise.

Expectation for an increasing need for alfalfa in Kentucky and beyond is based upon several conditions: greater emphasis on sustainability of food production, demand for more high quality forage in livestock rations, legumes nitrogen fixation, drought tolerance, and environmental protection. Indications are that alfalfa will continue to maintain its status as Queen of forage legumes.

