

4 million unused Pa. acres suitable for livestock

UNIVERSITY PARK — College of Agriculture scientists at Penn State claim that over four million acres of abandoned cropland and open forest land in Pennsylvania would make suitable pasture for beef cattle and sheep.

They found that many species of wild vegetation are excellent sources of nutrients for livestock, according to Lowell L. Wilson, animal scientist and project leader.

The Penn Staters were surprised at the total protein content of some weed species such as small white aster, bonaset, Allegheny blackberry, clearweed, northern dewberry, dandelion, Virginia wild rye, and several other plants.

"The average total protein content of several weed species was sufficient to meet the protein requirements of young steers and lambs as well as mature beef cows and sheep," Wilson commented.

He said several weed and shrub species contained enough digestible energy to maintain weights of animals. However, most weeds were not quite high enough in energy to meet the needs of young, growing steers and lambs.

Wild vegetation was sampled from marginal, unused fields and open forests in three Pennsylvania

areas — Elk, Centre, and Huntingdon counties. Fifty-one plant species were analyzed for energy and protein content. Many species also contained adequate levels of vital minerals such as calcium, phosphorus, magnesium, and copper.

In feeding trials with mature sheep, several weeds and wild shrubs had fair-to-good acceptance. Some plant species were eaten readily including fine-leaved asters, wild carrot, Virginia strawberry, gray dogwood, ox-eye daisy, common yarrow, and dewberries.

But even these weeds became less acceptable as the grazing season advanced from spring through fall. This was somewhat expected, Wilson said, since edible quality of all plants tends to decrease as plants mature.

He noted that large areas of once cleared cropland were abandoned years ago when farmers concentrated their production on the more highly fertile acres. The less productive marginal lands tend to be too dry, lack top soil, are stony, have poor internal drainage, and are difficult to harvest.

However, many of the weed and shrub species in abandoned fields and open forest land have mineral

content as desirable as alfalfa and clover, Wilson pointed out. This is important in grazing livestock, he said, since many metabolic diseases in cattle and sheep are related to mineral imbalances and deficiencies.

Wilson and associates determined that old field sites produced sufficient forage for one mature beef cow and her calf on three to five acres during a 150-day grazing period. However, 20 acres or more would be needed for each cow and calf in sparsely-grown hardwood areas. About two and one-half acres of old fields would be needed to maintain each young, growing steer.

Faculty members active in the research, in addition to Wilson,

were William C. Stringer in agronomy, Todd W. Bowersox in forestry, William L. Kjelgaard in agricultural engineering, and Earl J. Partenheimer in agricultural economics.

Three locations in Pennsylvania were studied as typical of hill lands suitable for increased grazing of livestock. Each area featured plant environments unique for that site.

One area was the Allegheny Plateau region of Elk County. A second area was the ridge and valley section of Centre County. This land included forested ridges and abandoned valley cropland. The third area included the bottomland or ridges and valleys in Huntingdon County.


Soil pH ranged from 4.5 (acid condition) for open forest land in Elk County to 6.7 (almost neutral) for old fields in Huntingdon County. Wild vegetation was sampled in spring, summer, and fall. Mature sheep were pastured in Centre County plots to determine acceptability of the various plant species.



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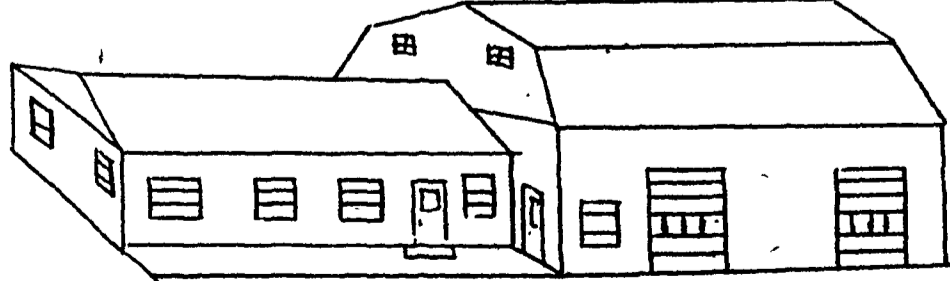
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