

The History of Extension Education

The mission of the University of Missouri Extension is to extend research-based information and education to improve the lives of citizens. From time to time, it is important to revisit history and reflect on how Extension has evolved.

The practice of living off the land is well documented in early American history. Tisquantum, more commonly known as Squanto, was a Native North American of the Patuxet tribe that occupied the coastal area west of Cape Cod Bay in the late 16th early 17th century. To support their society, agricultural practices included clearing fields, breaking ground, and fertilizing the soil with fish and crustaceans and weeding was typically done with clam-shell hoes. This horticulture practice was necessary to accumulate surplus for winter needs and trade with the English settlers. Legend has it that after a period of famine, Squanto was credited with giving the first “Extension” demonstration to the Pilgrims on proper planting and harvesting techniques. Following that growing season, the first Thanksgiving feast or harvest festival occurred with more Indians present than Pilgrims.

Some 200 years later, the United States made formal attempts to continue this teaching and Extension through various Acts of Congress. The land-grant mission was established by the Morrill Act of 1862 to promote the liberal and practical education of various social classes, pursuits, and professions in life. It was followed by the Hatch Act of 1887 to ensure that the necessary basic and applied agricultural research would be conducted by state colleges of agriculture in cooperation with the federal government, which is now represented by the U.S. Department of Agriculture. The Morrill Act of 1890, which established Lincoln University, provided additional funds to ensure that the land grants were open to all citizens without regard to race.



In 1899, Congressman Willard Vandiver conveyed, “I come from a state that raises corn and cotton, cockleburrs and Democrats, and frothy eloquence neither convinces nor satisfies me. I’m from Missouri, and you have got to show me”.

The University of Missouri (MU) land-grant institution has a history of innovation and excellence in soil science, research and Extension. Historic Sanborn Field, third oldest long-term studies of its kind in the world has yielded important research findings since its establishment in 1888. Only the University of Illinois Morrow Plots and Rothamsted in England are older research sites.

In 1913, ten University of Missouri “Farm Advisors” were charged with assisting farmers with an epidemic of hog cholera, which threatened to destroy swine herds throughout Missouri. With the passage of the 1914 Smith-Lever act, 27 years after the land grant establishment, the Extension Service was in full swing. The Extension Service was established to provide a means of making research information readily available to those on the land and to assist in solving their individual problems.

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Is There Clover In There? Getting the Most Out of Your Soil Tests

If you have sent a pasture or hay soil test through your MU Extension, you've been asked what kind of forage you have. Next time, before you answer, think about whether you have a legume in there and how much of it there is, or do you want to add a legume. These things make quite a difference in the fertilizer and lime recommendation.

A soil test recommendation for a legume/grass mix, assumes that you have at **least a 25%** legume stand. If you have less, your nitrogen recommendation may not be enough for good grass growth. If you are going from straight grass to legume/grass mix, you will have to cut your nitrogen application and sacrifice some grass yield that first year to get your legume established. In this case, use the overseeding recommendation on your test. This will recommend a little nitrogen and not recommend a potash amount that would hurt the seedlings.

Legumes, like clover and lespedeza, add quality to the forage and provide most of the nitrogen that the field needs. They also dilute the effect of the fescue endophyte fungus. Therefore, unless you are going for a fescue seed crop or you are in the process of cleaning up your fields with some broadleaf herbicides, you probably want legumes in your field.

If your soil pH and fertility are in good shape, the legume should provide the needed nitrogen. Lespedeza can handle a lower pH than red or white clover. A soil pH_s below 5.0, lespedeza may be a better choice than clover until your lime application has time to work. If you want a legume, do not apply over 20 to 30 pounds of nitrogen, or the grass may crowd out the legumes. It is also best to have it closely clipped or grazed so the legume seedlings have adequate sunlight.

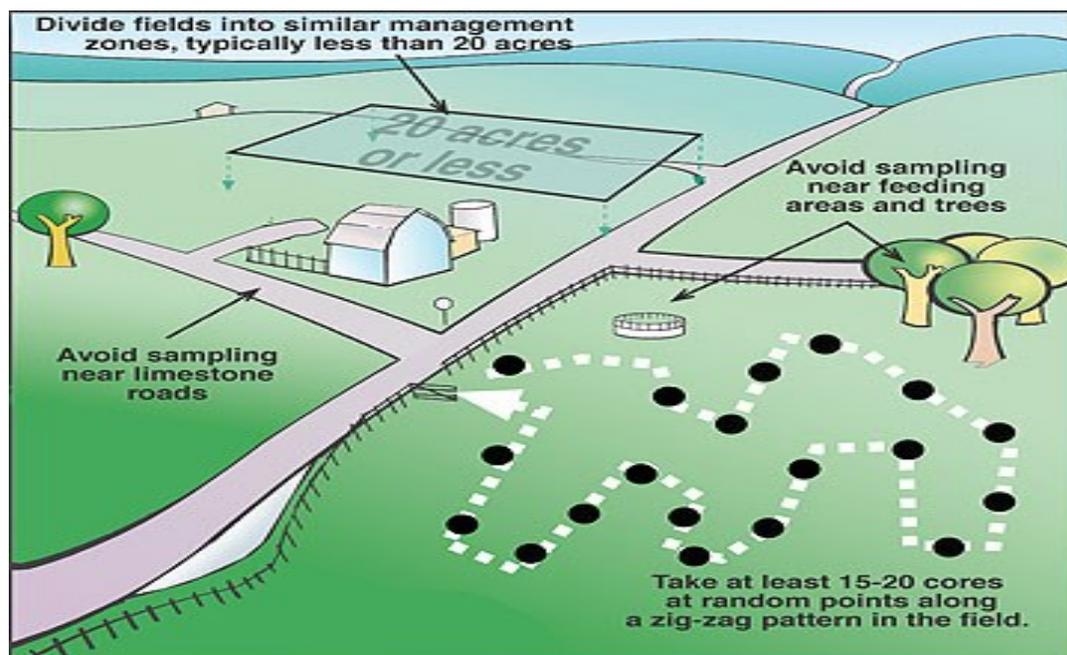
When someone is having trouble getting legumes to grow, the first two questions that should be ask are:

1. Is the soil pH and fertility inadequate for legume growth?
2. Is too much nitrogen being applied so, that the grass is crowding out the legume?

A good soil test with the correct soil test codes should lead them in the right direction to correct the problem.

For more information check out guides G4650, *Establishing Forages* and G4646, *Tall Fescue*. These are available on-line and at your local University of Missouri Extension Center.

Source: Pat Miller, *Agronomy Specialist*



Bull Selection with Indexes

Spring is quickly approaching and that means warmer weather, green grass, and your mailbox full of bull sale catalogs. If you are like me, you are receiving a cattle sale catalog about every day wanting you to come and select your next great herd bull. How do you make that selection?

Those catalogs are filled with loads of information: pedigrees, individual performance and carcass data, growth EPDs, maternal EPDs, carcass EPDs, DNA data, indexes and probably a few pictures. There is information overload. Isn't more information to make selection easier? How do we use all of this data?

One of the challenges with all of the information and wide variety of EPDs is balancing the different traits. Do you select the bull with a higher yearling weight and average carcass traits or do you select the bull with higher carcass traits and average growth rate? The standard extension answer is "that depends". Which one is going to be more profitable for your operation? That is tough to determine with only EPDs as they do not account for cost and profitability.

Fortunately, many of the breed associations are developing "selection indexes". A selection index is defined as a combination and weighting of multiple traits and their relative economic impact into one value that can be used to rank animals. Indexes are generally expressed as dollars per head and are used to compare sires in dollar or profit differences for progeny in a production scenario. Majority of the breed associations compute a maternal (all purpose) or a terminal (feedlot) index.

Maternal indexes are focused for cow-calf producers and the assumption that replacement females will be retained. They incorporate economically relevant traits for maternal, preweaning performance and reproduction. Terminal indexes are designed to select for a combination of feedlot performance and carcass merit. They are useful in comparing the profitability of progeny post weaning.

The key to success in selecting sires based on the appropriate index is to use the market endpoint that aligns with your operation. For instance, using a terminal index for selecting a sire for producing replacement females is discouraged, as terminal indexes place zero economic weight on maternal traits.

All of the breed associations publish a wide variety of indexes. Each one is developed for a defined situation or objective. In order to determine which index works best for your operation, understand what economically relevant traits are included in the calculation and select the index(es) that most closely fit your operation. For information on a specific index, refer to the respective breed association.

Selection index provide a natural connection between the net merit of an animal's genotype and its relationship with profit. Indexes are useful tools to help simplify your bull selection and help wade through all of the information overload that could accompany the sale catalogs.

Source: *David Hoffman, Livestock Specialist*

Getting Ready for Fruit Production

Dormant fruit sprays can generally be made in early March. A common peach disease I receive calls on in June and July is peach leaf curl. The home gardener is invariably disappointed when told that it can ONLY be prevented with a spray while dormant. Use chlorothalonil, Bordeaux mixture or a copper product. Look into the other spraying often required to prevent common fruit and leaf diseases of stone fruit and apples and be prepared.



Strawberries will need to be uncovered, typically towards mid to end of March. Keep your mulch material handy in case a cold snap comes and you need to put it back on for a couple of nights. Winter protected figs should be unwrapped about this same time. If they leaf out and it is forecasted to go below the mid-20s, consider covering with a tarp.

Most fruit crops should be pruned by mid-March. Some, like grapes, can often wait until the end of the month. Once buds swell you really want to get to it. If flowers open, or they leaf out, it is still better to prune than to skip it. The plant will still benefit.

Source: *James Quinn, Horticulture Specialist*

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The Land Grant College was charged with the mission of taking unbiased research-based information to citizens at the local level.

Since 1914, Extension educators have been responsible for adult education and improving the lives and economy of citizens at the local level. It is well known that this delivery model enables adults to have the ultimate determination in what action they take because of that education.

Community engagement is critical to the success of Extension over the past century. Constituent feedback is instant which gives the Extension specialist a feeling of the pulse of the individual, community, or leader. That pulse, provides great incite on how to develop new and improved programming to serve the needs of the citizens at the local level.

Locally elected county, regional and state Extension council members serve as the interface between MU Extension and the local and state government. Council members have many opportunities to be key communicators and advocates for the valuable programs and work that Extension does in communities across the state.

Extension Specialists are often referred to as change agents. While the culture, socio-economics, technologies, research and development change, so too does the Extension Specialist. The ability of Extension to develop new educational programs, as needs change, keeps it as relevant today as to when Squanto educated the Pilgrims.

Source: *Todd Lorenz, Horticulture/Agronomy Specialist*

