

# Vetch Proves Worth on Idle Land

(Editor's note: The following success story of a vetch plot was written and prepared by C. R. ("Bob") Hill, conservationist for the Holt County Soil Conservation District. The plot was a principal topic and source of pride in the discussions at the annual meeting of the district, which was held Tuesday in O'Neill.)

**Vetch**  
During 1953 the Holt Soil Conservation District supervisors set up what is probably their most important single venture in their 10 years of existence.

Raymond Heiss, chairman of the board a year ago, made land available to the district for a trial. It is the 40 acres located one-eighth mile east of the junction of highways 108 and 20, south of Page. The district is to receive all revenue from this 40 acres for the first five years and the land is to be turned back to the Heiss estate at that time with an established stand of grass. At the end of that time, if the field is not established to grass or if the district has not made expenses on the project, the time will be extended at the option of the district.

The district hopes to show the following information through the use of this plot.

1. Plant a variety of native grasses using several methods to determine which method of planting might be best suited for this area.
2. Apply various kinds of fertilizer at various rates and check results.
3. Plant native grass in solid stands rather than mixture to enable grass seed to be harvested and thus result in a larger cash income for the district.
4. Keep accurate records as to expenditures on receipts to determine if profits were derived and be able to cite it as example of correct seeding method and operational procedure to derive the most benefit in cash income for other cooperators.

The objectives have been established. A brief description of how they were accomplished and the results are in order. This field had not been farmed for some 35 years. There was a sparse covering of annual grasses and weeds with a scattering of partridge pea and a few plants of native grass, such as

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switch grass, big bluestem and sandlove grass and Indian grass. Plots A through F (see line drawing) were subtitled, skew tilled and packed. Plot A was seeded to sandhill bluestem with vetch and oats, Plot B was seeded to sandlove grass. C was seeded to sandlove grass and vetch and oats. D and E were seeded to vetch and oats. F and G were seeded to switch grass with vetch and oats. The ground preparation and seeding were completed by April 20, 1953. Plot B was seeded with vetch in the fall of 1953. Plot D will be seeded to sandlove grass in the spring of 1954. At the same time plot E will be seeded to switch grass.

**Milk Used**  
It was originally intended to seed plot G to switch grass alone but at the time of ground preparation it was too wet to sub till so vetch was added to the mixture in an effort to reduce the competition of annual weeds and grasses. All vetch seed was double inoculated with "C" nitrogen using milk as a wetting agent instead of water.

The method of seeding sandlove grass is designed to compare seeding grass followed by vetch seeding, seeding both at the same time and seeding vetch ahead of native grass.

Plot I was prepared in the same manner in the fall and seeded to tall wheat grass and fertilized at the rate of 100 pounds of 0-20-0 per acre.

| Strip No. | Rate | Analysis | Cost  |
|-----------|------|----------|-------|
| 1         | 300  | 0-20-0   | 7.08  |
| 2         | 200  | 0-20-0   | 4.72  |
| 3         | 100  | 0-20-0   | 2.36  |
| 4         | 300  | 10-20-0  | 13.59 |
| 5         | 200  | 10-20-0  | 9.06  |
| 6         | 100  | 10-20-0  | 4.53  |
| 7         | 240  | 8-32-0   | 10.56 |
| 8         | 160  | 8-32-0   | 7.04  |
| 9         | 80   | 8-32-0   | 3.52  |

In late August a fair to good stand of grasses could be found on all plots where grass had been seeded. However, it is too early to draw any conclusion on the various treatments as far as a stand of grasses is concerned. In the early part of the season in strip 4, the 300 pounds per acre of 10-20-0, showed up as the best growth. However, by the last of July, the vetch in strip 4 had just begun to form nitrogen nodules on the roots while in all other treatments nodules were more abundant, and in some cases, the nodules were formed by June 15.

At the field day, August 12, samples were taken from three fertilizer treated strips, 1, 3 and 4, and the roots washed with water to determine the amount of nodulation. The plants from plot 4 had fair nodulation. The mass of nodules combined would probably form a ball about the size of a walnut. In plot 3 the ball of nodules was more than

could be held in one hand. In plot 1 the nodulation was so heavy it was impossible to wash them free. On and near the central root was a mass of nodules in an oval about four inches in diameter and five or six inches long.

From this observation it is evident that the application of nitrogen and phosphate, while promoting early growth, reduced nitrogen fixation on the roots. In fact, nitrogen fixation was just as great in the check strips where no fertilizer was applied as in the heaviest application of mixed fertilizer.

It is also evident that if vetch is grown for soil fertility the greater is the nodulation and therefore the more nitrogen is fixed on the roots to become available to succeeding crops.

Another thing happened that amazed everyone who visited these plots. Everyone connected with the work, extension personnel and college men from the university all were surprised to see the abundance of partridge pea. Where the vetch was not seeded or where it was a thin stand due to seeding difficulties the yellow blossom pea flourished. Even in the heaviest growth of vetch an abundance of partridge pea was to be found.

Most visitors found it hard to believe that it had not been seeded in the mixture. It hadn't. The only plausible explanation is that evidently this plant had been present for several years but had escaped notice because, due to the low fertility, it had never produced very abundantly. However, with the cultivation and fertilization much of the seed of previous years grew and as a result there was a tremendous increase of partridge pea. Plot I had a very heavy stand of pea but the growth was not as rank as in the fertilized area. However, when the tall wheat grass was seeded last fall it was decided not to add vetch but rather to leave this area for comparison and as a seed source.

Partridge pea is apparently much more tolerant to extreme wet conditions than vetch. In plot G water stood in a small area for a short time in the spring of the year. The vetch was drowned out but the pea was "as thick as hair on a dog's back" and from two to three feet high.

This plant should not be considered too highly as a legume for the sandy soils of Holt county. It is a "native." The first seed was harvested on the Louis Sobotka farm near Inman a few years ago. This was named the "Holt variety" and is grown along side other varieties at the Pierce farms and the agricultural college experiment station at Lincoln. Being a native it matures a week or two earlier than other varieties.

It is an upright growing plant and does not present the harvesting problems of a heavy stand of vetch. It is a summer annual and should be seeded in the spring of the year. At harvest time it is usually below the combined heights of oats and rye, but matures a few weeks later and may be harvested or allowed to stand and form excellent winter cover.

Like vetch, once it is well established, it will maintain itself in a corn-small grain rotation. At the Pierce experiment farms it shows promise of increasing yields nearly as much as vetch.

However, the increase after the first year is not as great.

Now, for the all important consideration, how did it pay out? Following is a list of expenditures and a conservative estimate of the value of the seed harvested:

| EXPENSES     |          |
|--------------|----------|
| Spring labor | \$ 90.16 |
| Inoculation  | 2.90     |
| Vetch seed   | 58.80    |
| Fertilizer   | 131.07   |
| Oats         | 13.00    |

In addition the Soil Conservation Service furnished grass seed for seed increase purposes which included 20 pounds of sandlove grass seed, 50 pounds sand bluestem, 55 pounds switch grass and 50 pounds Indian grass. No expenses were charged for fall work on plot I.

In addition Mrs. Heiss stacked approximately 18 tons of vetch hay after it was combined.

Combining & cleaning... 200.00  
Total... \$495.93

**RECEIPTS**  
1300 lbs. partridge pea @ 20c = \$260.00  
4400 lbs. vetch seed @ 12c = 528.00  
Total... \$788.00

The technical staff and the district supervisors alike are looking forward most eagerly to the remaining four years of the project. If the results to come are as enlightening and full of surprises as the first year's it will indeed be an interesting project. A field day will be planned during the summer so that all who wish may inspect the plots at that time.

**Attends Funeral for Brother-in-Law**  
AMELIA—Mrs. Frank Backhaus went to Omaha Monday, March 1, to attend the funeral of her brother-in-law, Henry Gunzenhauser. Mr. and Mrs. Gunzenhauser were former Amelia residents. They have one daughter, Mrs. Doris Smith of Omaha. Mrs. Gunzenhauser is the former Ethel Bradshaw.

**Other Amelia News**  
The quarterly conference of the Amelia and Chambers Methodist churches was held Sunday afternoon at the Amelia Methodist church. Rev. J. LaVerne Jay of O'Neill, district superintendent, was present to conduct the business meeting.

Mr. and Mrs. Elmer Coolidge and Calvin and Mr. and Mrs. Charles Coolidge and Kenneth visited the Randall dam at Picketown, S.D., Saturday. Mrs. Jennie Adams returned to her home in Atkinson Saturday after a week's visit with Mr. and Mrs. Ed White.

Mr. and Mrs. Bob Rees and family went to Burwell Sunday to visit her parents, Mr. and Mrs. Will Matthauer.

Mr. and Mrs. Cleve Sigman and daughter of Morrill visited his father, Charles Sigman, Wednesday and Thursday, March 2 and 3. They were enroute to Ohio to visit Mrs. Sigman's parents. On Thursday, they were dinner guests of Mr. and Mrs. B. W. Waldo.

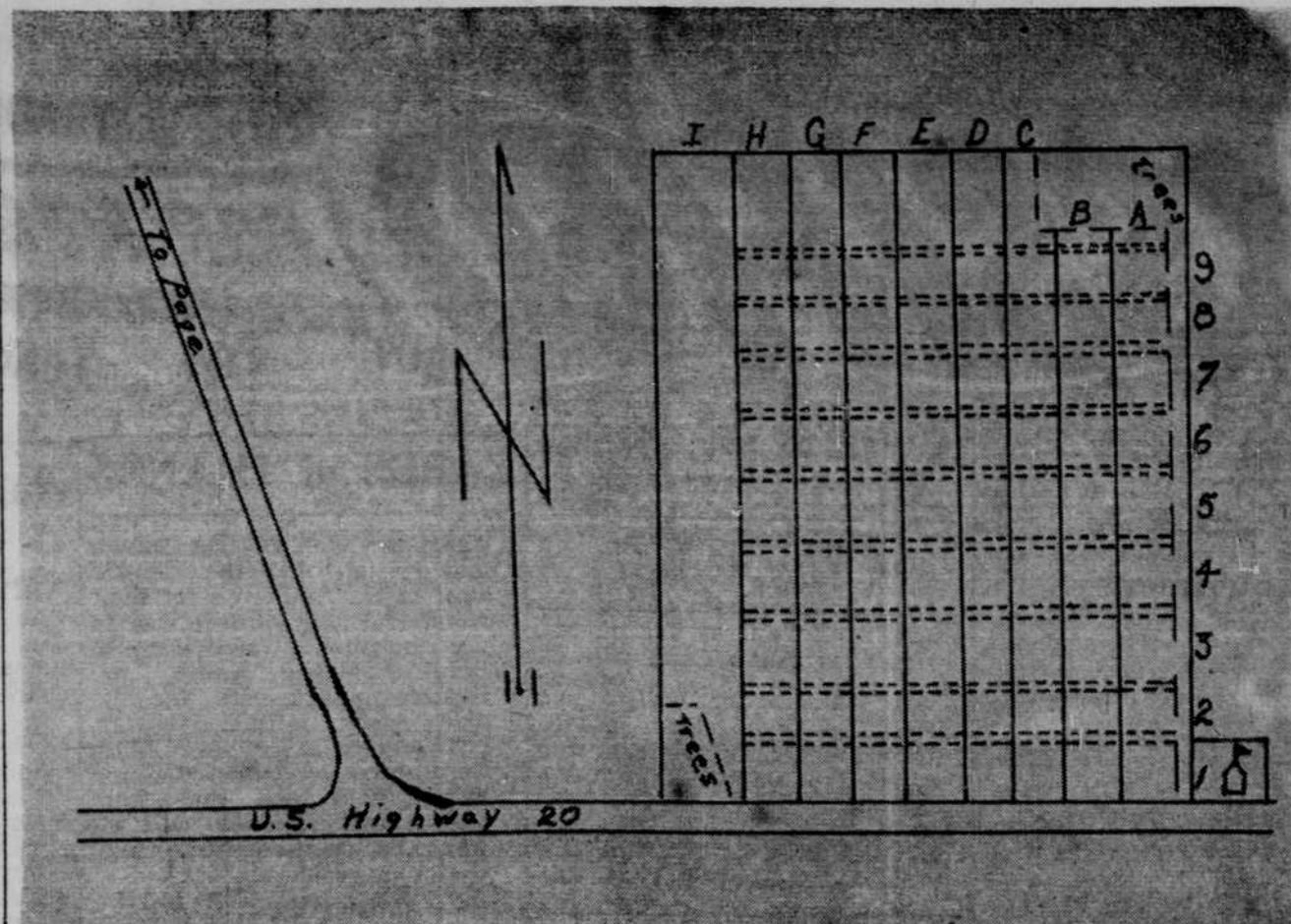
Mr. and Mrs. Ed White, Mrs. Jennie Adams and Mr. and Mrs. Charles Coolidge were dinner guests Friday at the home of Mr. and Mrs. Elmer Coolidge.

Calvin Colidge reported for his army physical examination Wednesday, March 10.

Gene Shermer spent the weekend with his parents, Mr. and Mrs. Asa Shermer, and family, enroute to Lackland air base at San Antonio, Tex.

Mrs. Julia White returned home Friday from a three weeks' visit with relatives at York.

Mrs. Bertha Sammons and



The above illustration shows the location, seeding arrangement (by letters) and fertilization (by numbers) on the Holt County Soil Conservation district's vetch plot, south of Page.

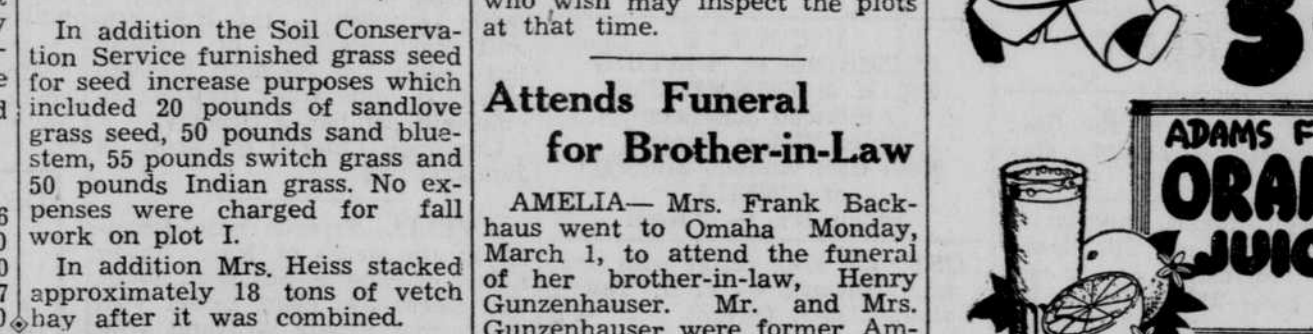


This shows an overall picture of the entire plot. It's difficult wading through kneehigh vetch in mid-July. By mid-August the growth is much greater.

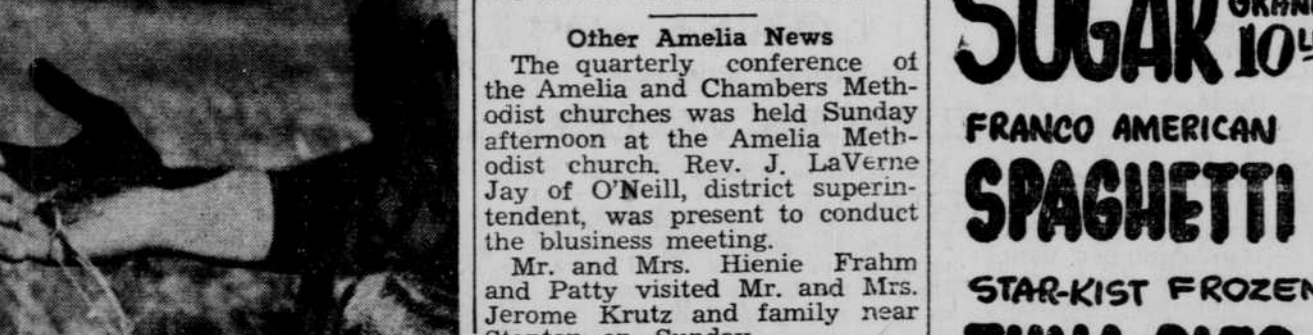


Don Burzloff (left) stands in kneehigh vetch and C. R. Hill (right) poses in anklehigh vetch. The kneehigh vetch was fertilized with 300 pounds of 10-20-0. Hill stands in unfertilized vetch.

Nitrogen nodules were found on roots of vetch plants.



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Burzloff and Hill find plenty of grass seedlings under dense cover of vetch and partridge pea.

Mr. and Mrs. Bob Adair are settled in their new home on the Stella Sparks place.  
Mrs. Elsie Doolittle entertained at a birthday anniversary supper Friday evening in honor of the anniversaries of her son, Jimmie, and Mrs. Art Doolittle. Members of the family and Mrs. Tom Doolittle, sr., and Clinton were present.  
Mr. and Mrs. William Fryrear, Mrs. Don Davis, Mr. and Mrs. Orland Fryrear, Mr. and Mrs. Arthur Hiatt and Mrs. Julia White visited Mrs. Lindsey and Florence Sunday evening.  
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**Here is Just a Reminder!**  
It won't be long before Spring planting will be here and the need for insecticides and seed disinfectants

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