

# The historical diffusion of alfalfa<sup>1</sup>

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## ABSTRACT

For nearly a century authorities have promulgated the view that alfalfa (*Medicago sativa* L.), being brought from Chile (from Spanish origin) into California, spread mainly eastward from California to Utah and then, from Utah-grown seed, to parts of central and eastern North America. This view is not entirely correct. The introduction of alfalfa into Utah was one of multiple origin, with the main source of Utah seed being the "winter-hardy" kind which came from the British Isles. This source of alfalfa seed into and throughout the USA was British (to Utah) based, rather than Spanish (to Chile to California to Utah) based. Thus, alfalfa from the British Isles, and not from Spain, is the main progenitor of early alfalfa development throughout the USA.

**Additional index words:** Alfalfa, Alfalfa diffusion, Alfalfa history.

**A**LFAFALA (*Medicago sativa* L.) appears to be the only forage crop which was cultivated before recorded history—a distinction that limits the accuracy with which its origin can be deduced. Most authorities generally agree that alfalfa probably originated in Persia (an arid region which is

now mainly Iran) (2). DeCandolle (5) stated in 1902 that "alfalfa has been found wild, with every appearance of an indigenous plant, in several provinces of Anatolia, to the south of the Causasus, in several parts of Persia, in Beluchistan, and Kashmir." This general area of southwestern Asia would include the modern political divisions of Turkey, Syria, Iraq, Iran, Afghanistan, Pakistan, and Kashmir (2).

From Persia this forage plant found its way to Arabia, where it was named, "alfalfa", which simply means "the best forage" (20). True Persia alfalfa also spread to Greece in about 490 B.C. (20) and later to the Roman Empire in about 200 B.C. The Romans made use of it in Italy and many other parts of the Mediterranean region (2).

Concerning the spread of alfalfa after its introduction into Italy, Bolton suggested that the

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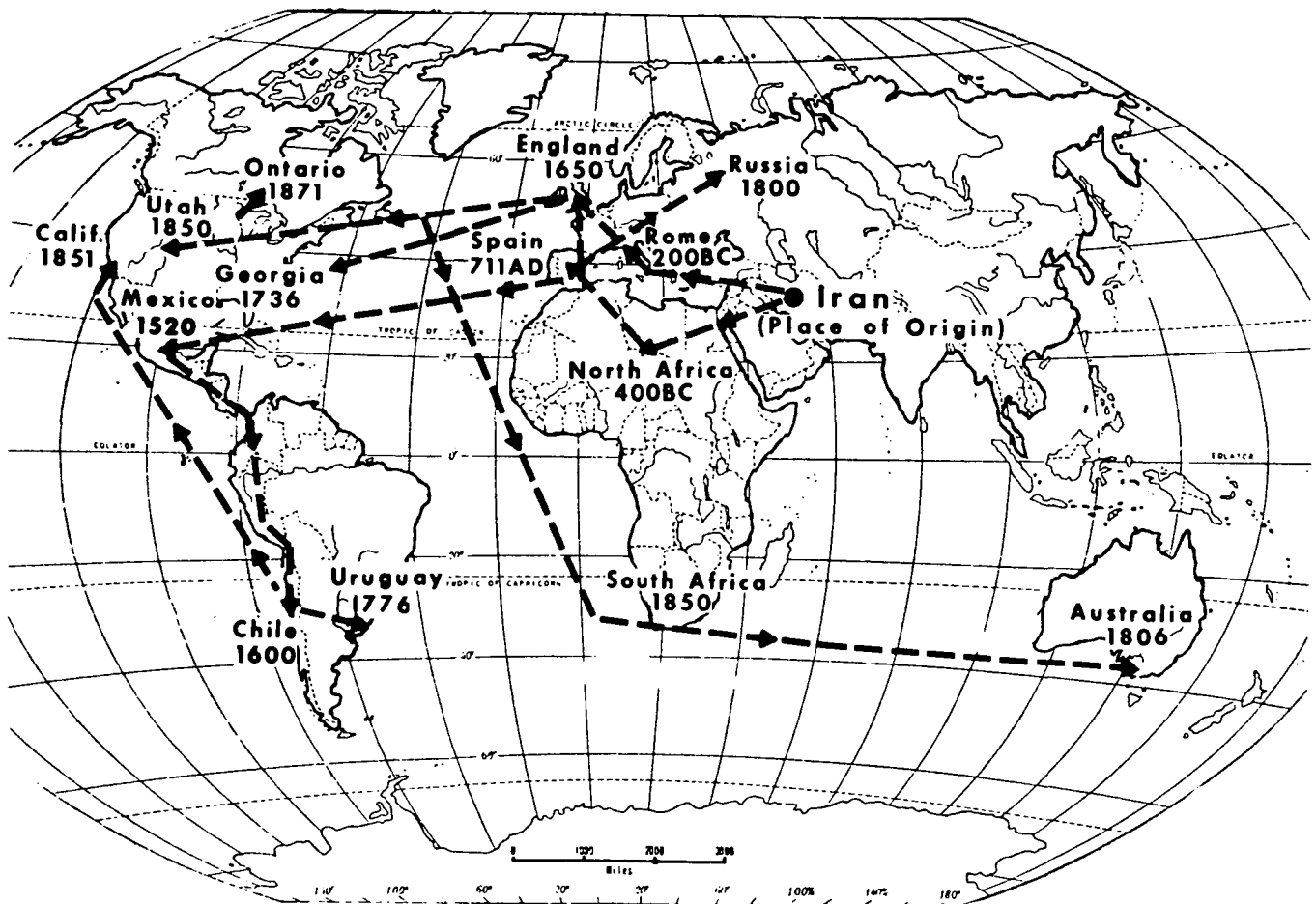


Fig. 1. Diffusion of alfalfa to the New World.

Romans introduced alfalfa into western Europe when they invaded that area. However, with the fall of the Roman Empire and the advent of the Dark Ages, alfalfa disappeared from Europe, or at least from the records. During this time it is thought to have been cultivated by the Arabs in the oases of North Africa (2).

The introduction of alfalfa into the New World began with the Spanish explorers and settlers of South America and Mexico. Early in the 16th century, the Spaniards conquered Mexico and Peru, introducing alfalfa and other crops. From Mexico and Peru alfalfa spread to Chile and Argentina in the 1600's and to Uruguay in 1776 (Fig. 1) (2).

Many authorities believe that Mexico and Chile were important sources for the introduction of alfalfa to the southwestern USA (2). Stewart (17) considers it likely that many acres in what is now USA territory, particularly in California, were producing alfalfa in 1836 when the Spanish governor of Mexico took the missions away from the Church. Bolton (2) states that seed from Old Mexico was

used by Major Jacob Downing to plant a field near Denver, Colorado, in 1863. It was also possible that introductions from Mexico were brought into Texas, New Mexico, Arizona, and California by the early missionaries (2).

Alfalfa also made its way into the southwestern part of the USA from Chile during the "gold rush" period around 1850. Stewart (17) states that one of the routes to the gold fields during that time was the all-water route "around Cape Horn," and that sometime—between 1849 and 1850—a party from one of these ships went ashore in Chile, returned with some of the seed, and brought it to California. Ahlgren (1), Bolton (2), Coburn (4), Stewart (17), and Wing (21) all agree that alfalfa was introduced from Chile into California during this period.

#### English and German Introduction of Alfalfa

Before alfalfa was introduced into California, the New England colonists had been making occasional introductions of alfalfa into the States along the

Atlantic seaboard. The first introductions were in Georgia in 1736 and North Carolina in 1739 (1). However, success within the eastern USA was slow and limited because of acid soils and humid climate which affected hay curing (21). These conditions so discouraged alfalfa producers that as late as 1899 only 1% of the alfalfa in the USA was grown east of the Mississippi River (2).

While the diffusion of alfalfa throughout the eastern portion of the USA was slow, its consequences were important. Coburn (4) states that immigrants coming to the eastern USA brought alfalfa seeds with them from Europe; and that as some of these people traveled westward they planted alfalfa seed at various locations. For instance, beginning in 1850, Mormon pioneers who often obtained "lucern" seed from the British Isles and other European sources planted it in Utah (9). In 1857, Wendelin Grimm of Julsheim, Germany, brought a hardy German strain of alfalfa into Minnesota. This strain, designated "Grimm Alfalfa" gained prominence throughout the USA by 1910 (2).

Therefore, as already discussed, alfalfa was introduced into the USA from four distinct sources: from the British Isles to Georgia in 1736 and Utah in 1850; from Mexico to California by 1836; from Chile to California in 1851; and from Germany to Minnesota in 1857. However, the major diffusion of alfalfa within the USA was the spread of Utah-grown alfalfa seed, which was first planted in Utah in 1850 and between the years 1865 to 1889, spread from Utah throughout the western and central states of the Union.

#### Specific Introductions of "Lucern" into Utah

For nearly a century authorities have promulgated the view that alfalfa, after being brought from Chile into California, spread eastward from California to Utah "and then from Utah grown seed to other parts of North America" (17, 21). The evidence is, however, that although the latter premise is substantially factual, the former assumption is largely misleading and erroneous. For the introduction of alfalfa into Utah was one of multiple origin (15), with the main source of Utah seed being the "winter-hardy" kind which came from the British Isles—mainly England.

During the 1850's and early 1860's Utah immigrants imported alfalfa seed under the name "lucern" or "lucerne" from such nations as England, Wales, Switzerland, and Chile. Until the 1890's, because the majority of early Mormon immigrants in Utah were of British and European background,

the common term for alfalfa was, consequently, "lucern."

Existing government and personal records indicate there were eight known immigrants who were responsible for bringing lucern into the Utah region and instrumental in its diffusion throughout Utah localities. Of these eight immigrants, one definitely and two probably imported lucern seed from England, one received seed from California, one received seed of Swiss origin, and three have not specified the origin of their lucern seed.

#### Lucern From England Into Utah—1850

To date, most authorities have stated that the first alfalfa seed brought into Utah came from California in 1859, and was planted in Lehi, Utah County, in 1860 by Isaac Goodwin (1). Such is not so. The first lucern seed introduced into Utah came from Liverpool, England, and was planted by John Parry in Salt Lake City during the spring of 1850. (This is a year earlier than the first recorded growing of alfalfa seed in California). The circumstances surrounding the introduction of this seed are as follows:

The persons who brought the first lucern seed to Utah were the Hon. Elias Morris and the late John Parry, of this city (S.L.C.). They were Mormon missionaries in Great Britain, and when in Flintshire, Wales, had their particular attention drawn to lucern planted along railway embankment on the river Dee, where they noticed that the roots of the plant grew twelve to fourteen feet long. Being natives of Wales, and lucern being cultivated in many places in Great Britain as fodder for domestic animals, they were in a measure familiar with it, but its growth on the railway embankment impressed them with the idea that it would be a good thing for Utah; so when in Liverpool they went into a shop in Great Crosshall street and bought several pounds of the seed. That was in 1849; and the next spring Elder Parry—then having come to America—planted some in his lot in the Sixteenth Ward in this city (11).

It is interesting that a year after John Parry had planted the first seeds of lucern in Utah soil, he sent a letter to his son, John Jr., then residing in Flintshire, Wales, requesting that he send him more lucern seed. His son obliged, and by 1853 John Sr. had several more pounds of seed, which he planted and distributed to others (9).

Three years after Parry planted his first lucern seed in the Salt Lake Valley, Benjamin F. Johnson planted lucern (calling it "Chilonian Clover") in Santaquin, Utah. The following is an excerpt from a letter which he wrote to the *Deseret News* (8).

From mail brought to Salt Lake City in 1850, I received from a friend in Washington (D. C.) a package of lucern seed, then called Chilonian Clover, which I planted at Santaquin in 1851. I was called in 1852 to the Sandwich Island mission. The place was broken up in 1853 by the Walker (Indian) War, and on my return in 1855, I found my lucern still growing on dry land, not having been irrigated for two years, and its progeny is still spreading this county.

#### Lucern From Switzerland Into Utah—1861

The lucern seed introduced from Switzerland into Utah was planted in Brigham City, Box Elder County, about 1864 by William Wrighton and George B. Reeder. Wrighton, who was a horticulturalist, arrived in Utah in 1853, settling in Brigham City. Wrighton was a regular attendant at Latter-day Saints church conferences held in Salt Lake City, and being unusually alert to finding new crops, purchased a "bag of lucern seed" which had been brought from Switzerland. Upon his return to Brigham City he and George B. Reeder began the cultivation of lucern. It produced a heavy crop, and by the mid-1860's its progeny had spread accordingly (16).

#### Lucern From California Into Utah—1860

The alfalfa which came into Utah by way of California was brought by Isaac R. Goodwin and planted in the spring of 1860 in Lehi. Goodwin, born in Connecticut in 1810, joined the Mormon Church in 1846. With his family he sailed to California on the ship Brooklyn around Cape Horn, reaching San Francisco in 1846. They remained in Southern California (in the Mormon colony at San Bernadino) until 1858, when they moved to Utah and settled in Lehi in 1859 (3). In the spring of 1860, Goodwin planted his first "alfalfa seed" from California. After a few years of cleaning the husks from the seeds by means of a coffee grinder, he was able to sell a little seed to his neighbors for one dollar a pound. In a few years the strain had become quite generally distributed. In 1867 the first stack of alfalfa hay in Lehi was put up by Paulinas H. Allred, who apparently obtained his seed from Goodwin (12).

#### Lucern From England Into Utah—1860's

It is probable that lucern seed was frequently imported into Utah from England in the 1860's. The *Deseret News* of 27 Mar. 1847, reported that it was "difficult to determine with accuracy" the exact place of origin or time of introduction of lucern

Table 1. Sources of "lucern" introductions into Utah

Date	Individual	Origin of seed	Place of first planting
1850	Parry	England	Salt Lake City
1851	Johnson	Washington, D. C.	Santaquin City
1860	Goodwin	California	Lehi
1861*	Bachman	Unknown	Provo
1861*	Kelsey	England †	Tooele City
1861	Goold	Unknown	Washington City
1863	Layton	England †	Kaysville
1864 †	Wrighton	Switzerland	Brigham City

† Approximate date.

‡ Probable origin.

into the Utah territory," as "different private citizens imported a little of the seed from the east (presumably the Atlantic coastline where British trade was most prevalent) and grew a little lucern on a smaller scale more than sixteen years ago." Two such individuals who appear to have either brought lucern seed with them from England or imported it from the area were Eli B. Kelsey of Tooele City, and Christopher Layton of Kaysville City.

In 1851, Eli Kelsey was serving as a mission president for the Mormon Church in England. He left in 1851, arriving in Salt Lake City on 20 November. Shortly thereafter he settled in Tooele City, where by the early 1860's he was growing lucern rather successfully (6). In 1867, the *Deseret News* (6) quoted him as saying:

Tooele City is one of the high places of the land, and our hay field lies twelve miles away down hill. I have proven to my satisfaction, that I can be raising lucern and Hungarian grass on my farm, feed my animals cheaper than I could if some kind friend would furnish me the hay land, cut, cure, and put up the hay and give it to me for the hauling of it twelve miles up hill.

Although present research cannot substantiate the precise source of Kelsey's seed, conjecture has it that since lucern was apparently being imported mainly from western Europe during the 1850's and 1860's rather than from California, Kelsey either brought lucern seed with him from England or imported it from British sources (8).

Christopher Layton's introduction of alfalfa into Utah is similar to Kelsey's. Between the years 1850 to 1852, Layton was living in England. In 1852 he traveled to Utah across the plains, and after spending some time in Nevada moved with his family in 1857 to Kaysville, Utah, where he first planted "lucern" in 1863 (15). Layton probably did not bring lucern seed with him from England, since it would have necessitated the seed being in his possession for some 11 years before he first planted the crop in Kaysville. Rather, he probably imported his lucern seed from the same general source as Kelsey did, probably the British Isles. This becomes more

likely since Layton was a member of the "Utah Deseret Agricultural and Manufacturing Society" in 1863, and as such had availability to new seed being imported into the territory monthly. Most of these new seed came from the Atlantic seaboard and western Europe—mainly Britain (14).

#### Lucern From Other Sources Into Utah—1860's

The final two gentlemen who achieved recognition for their early introduction of lucern and alfalfa into Utah were Benjamin Bachman of Provo City and Robert T. Goold of Washington County.

Benjamin Bachman was born in Germany in 1836 and moved to New York in the mid-1840's. He then traveled to California in the mid-1850's, and finally to Provo in 1859. A general merchant in Provo for many years, he therefore had access to various products, including new varieties of seeds. It was during the first few years after he arrived in Provo that he imported "lucern seed" and began its cultivation and distribution (8).

Robert T. Goold engaged in the cultivation of alfalfa beginning in 1861 in Washington City, Washington County (7). The source of the seed he used is not clear although it is interesting that he called his crop "alfalfa" rather than "lucerne", which term "alfalfa" was then being commonly used in California. If his "alfalfa" seed did come from California it might have been a type of "sand lucern" which grew well in the non-irrigated lands of southern Utah. Below is an excerpt from a letter Goold wrote to the *Deseret News* (7).

In perusing your issue of July 9th, my attention was directed to an article treating on the subject of alfalfa as a hay crop—the proper time of cutting, best method of curing and other items of importance in connection with the matter, to which I attach great importance. During a period of twelve years' experience in the southern part of our Territory I have fairly proven the ideas as set forth in said article to be strictly correct, and it would be well for the farmers generally in this part of the country to pay strict attention to the instructions as set forth in it. When put up as prescribed in the article alluded to, our horses will keep in splendid condition through the Winter. Every kind of stock in this part of the country eats it eagerly, even our hogs, when it is green. It is also, when properly attended to, a very profitable crop. Cows kept up and fed on alfalfa, cut fresh, give a bountiful supply of milk, of the richest quality, in flavor equal to any I have ever tasted in any country.

A study of these eight Mormon immigrants, who were responsible for introducing lucern or alfalfa seed into Utah, clearly establishes that the importation of the seed into the territory was one of multiple origin and that most of the first recorded seed

introductions came from the British Isles, as did most of the Mormon immigrants (Table 1). However, one should not necessarily believe that these individuals were alone in their introduction of lucern seed, for probably other pioneers were also responsible for the bringing of this forage crop into Utah.

#### ALFALFA ADOPTION IN UTAH

During the early years of its introduction into Utah (between 1850 and 1860) the spread of lucern was one of experimentation and minimal dispersion. The primary reason for this was the notion of many of the early Mormon pioneers that once lucern was "started in the land it could not be subdued or killed out" (10), a view also held for some time by many other immigrants throughout the northwestern USA (17).

By mid-1860's, however, lucern was gaining in prominence throughout the Utah territory. The Mormon pioneers began to find that "the dry bench lands, formerly considered worthless, could be made to yield an abundant alfalfa crop of excellent fodder" (10). Additionally, Mormon leaders began the cultivation of "lucern" and emphatically extolled its desirability from the pulpit (22). For example, Brigham Young gave widespread publicity to the idea of adopting and utilizing lucern locally, stating:

Let those who have cows in the city, sow a little lucern seed in their gardens, say three or four rods square, and see that it is well cultivated, and you can feed your cows with a little of this two or three times a day. . . in this way it is not difficult to keep a cow the year round. (15)

By 1879 the growing of lucern was general throughout the Utah territory, and by 1899 the original practice of lucern dry farming had changed so much that 87% of all lucern (then more commonly called alfalfa) in Utah was being irrigated (19).

#### ALFALFA DIFFUSION FROM UTAH

As Wing (21) has expressed: "from Utah seed nearly the whole west has been planted." Indeed, so successful was Utah seed production that 35 years after its first introduction into the territory, Utah alfalfa seed, of moderate winterhardiness, was being produced in large quantities and extensively shipped to Colorado, New Mexico, and Texas. In addition, a considerable amount of Utah seed was

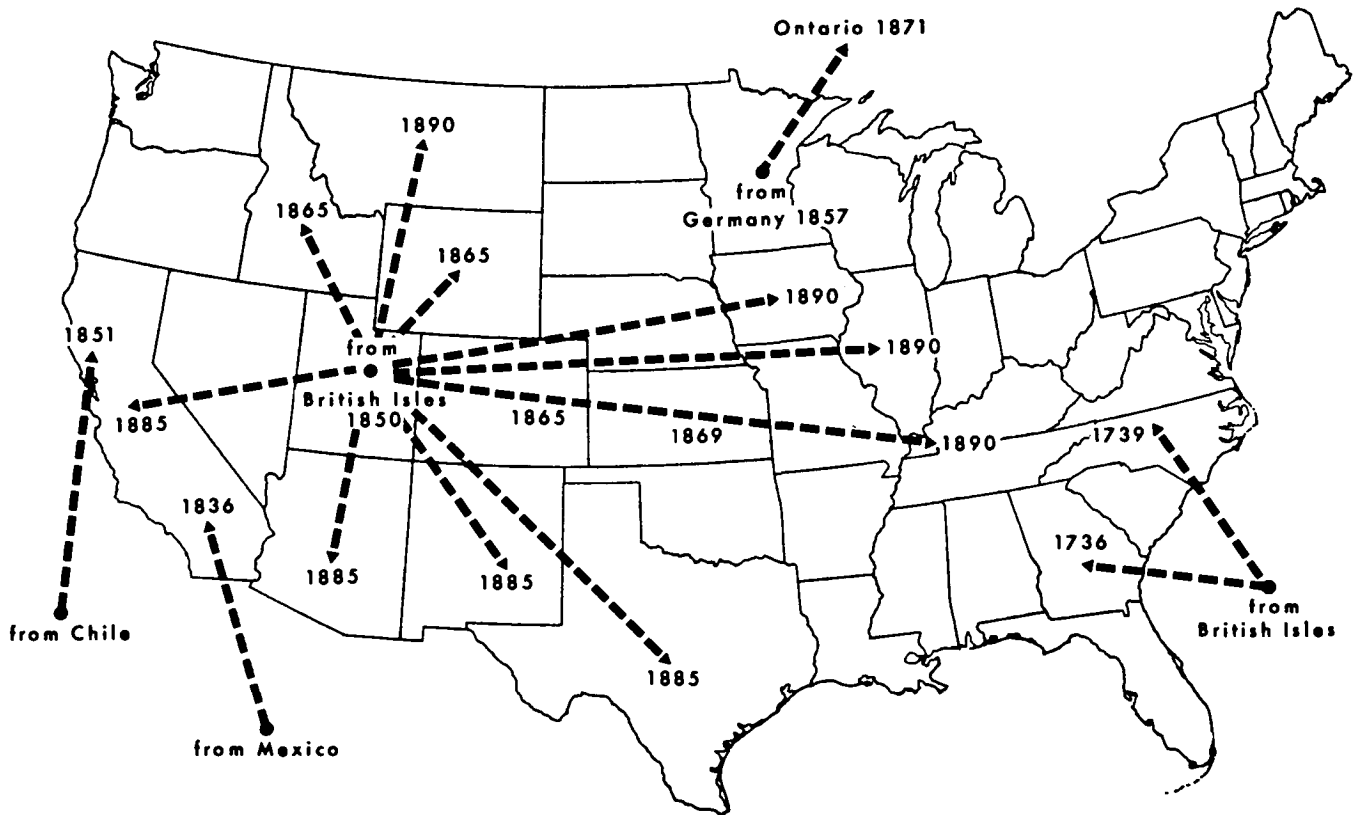


Fig. 2. Major diffusions of alfalfa within the USA, 1700 to 1900.

being supplied to California by 1885 (15). Concerning the Utah export of "lucern seed" to other areas of the USA, the following editorial comment was made in the *Utah Deseret News* (10).

. . . from information received we are of the opinion that nearly if not quite 500,000 lbs. of lucern seed from last year's crop has been shipped out of the Territory during the past few months. Most of this has been sent eastward, a considerable quantity to California, and some to the southeast, in which latter direction—in Colorado, New Mexico and Texas—there is likely to be a good market for seed next year.

In addition, Utah-grown alfalfa seed reached Idaho, Colorado, and Wyoming in 1865, Kansas in 1869, Montana, Iowa, Missouri, and across the Mississippi into Illinois by 1890 (14) (Fig. 2). By 1890, although alfalfa seed still largely came from Utah, alfalfa hay production in other states quickly surpassed Utah because these states had longer seasons, better land, larger number of laborers, and more machinery and investment capital (18).

## CONCLUSION

For nearly a century authorities have promulgated the view that alfalfa, after being brought from Chile (of Spanish origin) into California, spread mainly eastward from California to Utah, and then from Utah-grown seed to parts of central and eastern North America. But, such is not so. The introduction of alfalfa into Utah was one of multiple origin, with the main source of Utah seed being the "winter-hardy" kind which came from the British Isles. This finding is significant, because it means that the main source of alfalfa seed introduced throughout the USA was British (to Utah) rather than Spanish (to Chile to California to Utah). Thus, alfalfa from the British Isles, and not from Spain, is the main progenitor of early alfalfa development throughout the USA.

Alfalfa first entered Utah under the name "lucern" with the first seed coming from England and being planted in Salt Lake City in 1850 by John Parry. During the next 13 years, from 1851

to 1864, seven other Mormon pioneers are known to have introduced alfalfa into the Utah territory. But other "different private citizens" also "imported a little of the seed from the east" (presumably meaning the Atlantic coastline where British trade was most prevalent). Most of the alfalfa imported into Utah was known as "lucern," its familiar name in the British Isles, rather than "alfalfa" as it was known in Spain or South America. Of the eight Mormon pioneers who are known to have introduced alfalfa into Utah, one certainly and two probably imported seed from the British Isles, another one acquired seed from Switzerland, one more brought seed from California, another obtained seed from Washington, D. C., and two others obtained seed from unknown sources. Probably since the first recorded introduction and the large majority of the alfalfa seed introductions into Utah were from the British Isles, the plant in Utah was originally called "lucern" rather than "alfalfa."

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