

**THE ENSILAGE CONGRESS.
REPORT OF PROCEEDINGS
OF THE THIRD AND
FOURTH CONGRESSES**

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The Ensilage Congress. Report of Proceedings of the Third and Fourth Congresses by
Anonymous

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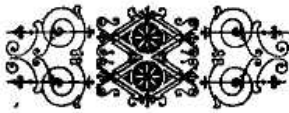
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THE ENSILAGE CONGRESS

REPORT OF PROCEEDINGS

OF THE

THIRD AND FOURTH CONGRESSES.

*HOW TO BUILD SILOS—INEXPENSIVE SILOS—ANALYSES—
RESULTS—COST—PHYSIOLOGICAL VALUE OF
ENSILAGE—GREEN MANURING—
AND UNDERGROUND
IRRIGATION.*

THE OBJECT OF THIS BOOK IS THE INCREASE OF THE PROSPERITY OF FARMERS.

PUBLISHED BY
THE NEW YORK PLOW COMPANY,
New York.

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Corn is used in this book instead of *maize*.

Chaffing is cutting stalks by cutter after having been cut down in the field.

ENSILAGE

Is the method of preserving green fodder crops in pits called silos by continuous pressure on the top, by which means the air is expelled as the material shrinks in bulk. This method was first used by Auguste Goffart in France, in 1873, when he preserved in his elliptic brick silos, partly above and partly below ground, a large crop of green corn. Mr. Francis Morris, of Maryland, adopted this method in 1876 and has ensilaged several hundred tons a year in earth trenches each year since that time. At Mr. Morris' suggestion the treatise of Goffart was translated in 1879 by J. B. Brown, President of The New York Plow Co., and a number of silos were built in 1881. The Ensilage Congress of January, 1882, gave a great impulse to the method, and at this time there are not far from a thousand silos in America and seven hundred in Great Britain. These silos are built of brick, stone, concrete, wood, and some are merely earth trenches or pits. The concrete is the best receptacle as it is more resistant to dampness and frost than the other materials. An earth trench preserves the fodder very well but there is some moldiness at the edges which may perhaps be avoided by wooden sides; at any rate it is much more profitable to begin in that way than not to begin at all. The comparative value of good ensilage over ordinary dried stalks for feeding horned animals is so great that nearly all ensiloers not only continue and enlarge their silos but become enthusiastic. At the Fourth Ensilage Congress, a farmer who had practiced it several years at Hornellsville, N. Y., and had saved in good order by ensilage a crop of corn that frost had overtaken, and who had made a profitable business out of an unprofitable one, announced himself as being "ensilage crazy." With the very few who have not continued, there is in each case some peculiar reason; some

have been discouraged by early frost, others by drought, and some have made very poor ensilage.

The most profitable crop for this purpose in the United States is corn, which requires 60 to 90 days to grow, according to the heat and moisture of the season. Twenty to thirty tons per acre is an ordinary crop of the green stalks, but much heavier crops have been grown in favorable soil. Kansas exhibited at the Centennial Exhibition stalks 30 feet high. Goffart speaks of having made in one field more than a hundred tons to the acre. The best seed for this crop is the Southern White, or Horse Tooth. This seed is grown where it has plenty of air and sunshine, a single plant in a place; and in a favorable season and good soil, it makes a great growth and very sweet juice. It should be planted as early as possible, so that it may have all the season, if it needs it. It is a peculiarity of corn that it apparently knows how long a season it has, and makes its arrangements accordingly. The same seed will top out at 18 inches, or 18 feet, as it sees a chance of making an ear before frost. It seems to struggle intelligently to grow as high as it can without failing to make its seed. But there is always time to plow under a winter crop of rye, which is the best use to make of it. I would prefer to have surely one fully matured crop of Southern white corn than a crop of oats and peas sown in the spring, and a smaller or less ripened crop of quicker growing corn planted later. Corn may be grown eternally on the same field by the return of the resultant manure. Chemists say that phosphoric acid is all that is not returned, but Goffart says that two-thirds of the manure will keep up the land for the corn crop. The manure should not be charged to the crop unless it be also credited with that item. It is best to plant it in rows, 3 to 4 feet apart, and 4 to 6 inches in the row, though some plant it closer, and claim that it is easier to handle when grown thickly, and not so necessary to chaff it; but for prime quality of ensilage it needs sun and air, and very likely a foot apart in the row will make as much syrup to the acre as if planted closer.

Clover is also an excellent crop for silo but the most attractive fodder of all to horses as well as cows is oats and peas; and under favorable conditions 20 tons to the acre may be had of these. The oats hold up the peas, and they bloom about the same time. Orchard grass will sometimes make a growth of seven feet, which means at least 15 tons to the acre. A variety of food is appreciated by the cattle, and a farmer should have several silos and a supply sufficient to last him all summer, and avoid the waste of manure and land incident to pasturing. Some

very poor clover ensilage has been made in this country but the cause will be explained in the letter of Mr. G. Fry, who was the first writer to speak of "sweet ensilage."

I have never seen any corn ensilage that was sweet to the taste, but I have seen it sweet to the smell and there are many degrees of quality. It seems to be well settled that the more mature the stalk the sweeter the ensilage; but the best stage of maturity is when the ear is between the milk and the glaze. At this time the juice is sticky and at its sweetest and is distributed through the whole plant, so that the stalks, leaves and ears are all attractive to the animal. This cannot be far from being "a perfect food," and the effect upon cows and bulls is to fatten them, if they can get enough of it, and without requiring any other grain.

The question of heating in silo which was brought out at Third Congress by Prof. Miles, and which promised to give us sweet ensilage, has not kept its promise. Some farmers who have practiced slow filling, leaving silo uncovered till it reached 122 deg. and over, have had somewhat better ensilage than before, but they are not sure that it is the heating, while other farmers who have finished up the work as rapidly as possible have just as good ensilage.

It will probably be found that immature crops may do better to have some extra heating before covering, in order to evaporate or change some of the water that they contain, but the same effect may be produced, as Mr. Fry suggests, by "haying" it a little. It is very desirable, however, to know that neither great haste nor some delay will materially injure the ensilage; sometimes it is more economical to hurry up, and sometimes to work leisurely. The old bugbear of an air-tight silo being necessary has been exploded. Farmers thought a few pin-holes would spoil the crop. In France they are now stacking their hay crops direct from the swath, under pressure, with excellent results, and it is probable that farmers lose a large percentage of nutriment in making hay too dry. Perhaps the hay tedder had better go, and compression ricks and bays come in (not patented).

When partially cured by drought while standing, it is always sweeter, and need not be "hayed" or heated. The wetter the corn is at cutting, the more acid will be the ensilage.

The British farmers are enthusiastic for ensilage. At the last Smithfield Cattle Show there were 248 exhibitors of ensilage. The scientific men, including Lawes and Gilbert, have tried in vain to hold them back.

If Mr. Crozier should go home to talk roots they would think he was Rip Van Winkle.

As the discovery of sweet ensilage was made in England, it is probable that it only applies to clover and grasses. The shrinkage in silo is about one-third.

The weight upon the cover is not a very exacting matter. It may vary from 25 pounds to 500 pounds per square foot of surface. A foot of earth shovelled on the descending cover will answer every purpose. If the stalks do not contain too much water no juice will exude and if it does it will generally be re-absorbed, hence the patented pipe arrangement that wasted some time at the last Ensilage Congress excited no interest; in fact this method does not require the assistance of any inventors. It seems to have sprung full-fledged from its author's brain.

Perhaps the best use for the weight as well as for chaffing is to make the contents more solid, and to remain in better order when being used out; for in warm weather it quickly deteriorates on the face. Elder Evans says that when hemlock was used as a cover the ensilage was sound close against it, where usually is an inch or two of mold. It is not so much the pressure as the heat that causes it to shrink in the silo. In feeding ensilage the cattle will take it as they can get it, but I have found that they like it best when heated after removal from silo, and especially when mixed with the meal and put in a covered box over night; it comes out of this sweat box steaming hot and is all eaten up with avidity. There is no doubt as to the healthfulness of this food for cows and sheep and especially when it is good. It is far safer than dry grain as it never scours when it is good, and the cattle are in much better spirits than when fed on hay, but it does not take the place of a good-natured man or of a dry, healthy stable. The corn ensilage that killed Mr. Bronson's horses was immature, having been cut early when fallen; it was very sour and was fed in larger quantities than should have been given them if fresh from field.

Mr. Garrett, of North Carolina, has fed many horses and mules for years on oat and cow-pea ensilage; and undoubtedly clover and other perennial ensilage is excellent horse food, and well-matured corn stalk ensilage in moderate quantities would be perfectly safe.

The woody fibre is softened by the heat in the silo and rendered more digestible, therefore corn stalks that have been husked still have enough juice left to make good ensilage, so that the small farmer may have both the ears and the ensilage; but the northern varieties better serve this

double purpose. It is certainly a great waste to let the stalks dry hard after the corn is glazed, when silos may be so easily made.

From CHARLES W. MANN, Mass., to "Mirror and Farmer."

Plant your corn as early as the season will allow, as one day in June is often worth three in August on the growth of the crop, and a frost will do less damage in June than in September. Sow in drills, three to three and a half feet apart, not over one-half bushel of seed to the acre (let me repeat just here, never sow broadcast, nor use two or three bushels of seed to the acre, for you will repent it if you do), so that your corn may grow good size, and be well matured, and full of nutriment, not small, tough, yellow, sickly looking stuff, which will tumble down in the first heavy rain or high wind.

Cultivate your crop carefully and often, and it will need no hand hoeing, although on old ground it would pay to pull the weeds from the rows, but with a good cultivator well used, little hand work will be needed on any ground, old or new.

Having been asked by many as to the advisability of putting the rye crop into the silo the coming season, I make this statement which I think will be accepted as true by those who know. Instead of leaving your rye to put into the silo, and making your corn crop very late, as it would be June 20, before you could clear off the rye and plant corn, just plow it under by May 20, when it will be two feet high or more, putting on manure the same as in the first case; plant your corn and you will get more tons of ensilage at the one crop than you would from the two, while it will cost less and be more satisfactory in every way. A very good and cheap way to keep up the fertility of the ensilage ground, which should always be as near the silo as possible, is to sow rye just before the last cultivation of the corn, and, the next spring, plow it in before sowing the corn; then by using a good bone phosphate, ten to twenty dollars' worth to the acre, all the manurial product of the farm could be used for other crops, and the value of the silo will be still more apparent. One man with whom I am acquainted cuts his corn with his mowing machine, one row at a time, and says it is a great success; has never broken anything but a few sections, and what is that compared with the hand labor saved; his corn was large and heavy.

It is better to chaff it than to bother with packing it in whole, and cutting it down with a hay-knife or sharp ice-chisel, as some speak of; and it is cheaper and better to do so, as it will pack closer, and keep better, beside being much easier to get out and feed when you want it, and in better shape for the cattle to eat it. For large farms with large silos, plenty of men and teams, and large capital, a good steam engine, without doubt, furnishes the best power for cutting ensilage, as it works quickly, cheaply, and is always ready, but for small farms with small silos of 150 tons or less capacity, a good horse-power is better adapted to the purpose, as almost any horse will soon become used to it, and it is not as hard as some other work horses have to do.

At least ten men and two double teams are required to keep things moving if an engine is used, breaks are likely to occur which will often spoil a day's work, and if hired will cost more than a horse-power of your own, so it is generally better to have things so arranged as to be able to do the work with your own men and teams, and be independent of your neighbors, who are always busy at that season, and of extra help, which is scarce at such times.