respect to the amount of nitrogen for sandy soils, four different experiments in Manatee and Hillsborough counties indicate that not less than 60 pounds of nitrogen per acre is required, and not more than 100 pounds per acre desirable.

With respect to the source of nitrogen, an experiment this past year has indicated that on a Parkwood Series Soil with a pH of about 6.0, satisfactory single sources were sulphate of ammonia or Uramon, and satisfactory mixtures were those containing not more than 40% of the nitrogen from natural organics, with the balance from quickly available mineral sources. During the relatively cold months when lettuce is grown, organic sources are relatively slowly broken down to forms available to the plants, so that the crop in many cases matures before the benefits of these forms of nitrogen can be utilized by the plants.

Nitrate nitrogen was found to be the poorest source tested, which is not surprising inasmuch as it has been found repeatedly in experiments throughout the nation that nitrate nitrogen cannot be efficiently utilized by many crop plants when they are grown on soils of pH 6.0 or higher.

Further information on this problem of nitrogen sources is available for those who may be interested.

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THE PROBLEMS OF A SANFORD TRUCK GROWER

J. J. BOLLY, Sanford, Florida

Before the "Big Freeze of 1894-5" the Sanford area was mostly citrus, but it then became necessary to find a quick crop. Of all the crops tried out, celery seemed to be the most profitable, and beginning about 1914 celery became one of the main crops.

Also, Big Boston lettuce was an important crop here then. But of late, the California Iceberg lettuce is taking its place, most of it being produced in western states. We are now experimenting with Iceberg lettuce in Sanford.

Dating from this time there came a series of events which were unfavorable to the Sanford grower.

To start with, financing on celery was too easy. The spirits of and desire for promotion influenced a great many loans, so when the
banks failed in Sanford, many were left in bad shape.

Along about this time the Sarasota area was started and this competition made itself felt in several ways. At this time Sanford was producing all the celery the market would take at a fair price, and even so, Sanford found it necessary and profitable to put into cold storage a large quantity of celery to be put on the market after the fresh celery was no longer available. The Sarasota acreage not only furnished a surplus but went to market at such time as to offer fresh celery against the storage celery from Sanford. This new area completely eliminated the possibility of profitably storing Sanford celery and called for a major adjustment. All of Sanford's celery had to go to market as fresh celery as it matured. It had to be squeezed in, somewhere, and often this more than doubled the unloads in certain markets with disastrous price levels resulting. The temptation to store Sanford celery was strong for several years, while the Sarasota acreage was still small, and some growers went broke bucking the storage game before they were convinced that the days of storing Sanford celery, to compete with fresh celery from Sarasota, were over and gone forever.

Then came the development of the wash houses. In the old days we used the field pack. The celery was simply cut and packed in the field pretty much as mother nature produced it. Each stalk was perhaps dressed up a bit for looks, but practically the entire stalk went to market. A great deal of this celery went to the washers.

The washer at the terminal markets, often a one man business, called a "tub washer" made the celery ready for the retail trade. The tub washer was a small wholesaler.

This system went into the discard with the advent of the wash-houses in Sanford. The process was reversed. The washing and packing job was then done on this end on an "assembly line" basis. At first this new system brought a premium payment to the grower who used this new process. However, as soon as a large quantity was washed at this end, this premium stopped and the additional cost of washing was borne by the grower. The trend has been toward higher processing and transportation costs each year.

This new method of harvesting for the wash house, where the celery is stripped in the field and made ready for washing, lowered the yield and cost more for labor. The cost of crate material has constantly gone up, as forests are becoming depleted of the desired type and grade of lumber. Nothing but No. 1 lumber is used.

A revolutionary change in crates came about with the introduction of the wire bound crate. This caused the crate manufacturer to re-tool at heavy expense, and made it imperative for the grower to produce a longer rib celery, because with the new crates it was necessary to clip the tops off the celery. This crate requires a paper liner, which is an additional expense: Also a fancy label is now required.

With the Bank failures, a long train of financing troubles started. The Federal Land Bank, of Columbia, South Carolina organized the Seminole County National Farm Loan Association, in Sanford, which saved many farms for the growers, giving them long terms and low rates of interest.

At the time we valued our celery land at One Thousand Dollars per acre, and were granted loans accordingly. But with bad years following, land values dropped and also the association was compelled to foreclose a number of farms. These farms were put on the market below their real value, as The Land Bank tried to get their equity from the farms, which further helped to reduce land values.

Seminole County has approximately 1200 farms and groves of which approximately 247, at the present date have a Land Bank or Commissioners Loan.

As other celery areas were developed and the surplus grew more top heavy the farmers income was lowered and he found it almost impossible to cope with the large mortgage hanging over his head.

About a year later The Sanford Produc-
tive Credit Association was organized in Sanford. Through this organization the farmers borrowed money to produce their crops, giving a mortgage behind the Land Bank as security, also giving chattel mortgages. As this association is self supporting from interest secured on loans, they are eager to make as many good loans as possible. However, a number of these borrowers were unable to pay back their loans while others heavily involved, turned their farms over to the association. Consequently, these farms were foreclosed and put on the market, which also helped to reduce our land values.

Efforts have been made to handle the surplus celery problem. Two different times the grower has organized and asked the U. S. Government for Marketing Agreements, but both of these agreements failed because of selfish interest. That is to say, members of the Control Committee and selfish interest killed or nullified any effective measures from within and without the organization.

We now have a special celery program in the AAA. This program is on a voluntary basis and makes a cash benefit payment to the grower who holds his plantings to within his allotment which is set up by a County Committee.

This program, at the present time, is designed to bring about a 20% cut in acreage. This control measure differs from the marketing agreement in that it saves the grower the trouble and expense of growing the crop and then not being able to ship it. This program leaves the land out of celery to begin with, and in addition makes a cash payment.

Many growers cooperate with this program and more would do so except for the financier insisting of full acreage being planted.

Other laws which are now in effect have brought further changes down on our heads. The Workmans Compensation and Social Security Acts both add costs to the farmer, but give him no direct benefit. Now the Wages and Hours Act does not protect farm labor but causes the farmer to pay these extra charges in the processing of his crops and on supplies he has to buy.

Another problem which confronts the grower each year is the Insect pest, which requires a considerable amount of insecticide, this adds considerably to the cost of producing the crop.

As the farmer and farm-help become too old to work or if the farmer loses his farm, the U. S. Department of Agriculture has made no provision as yet, to take care of them.

As now a great deal of land is being prepared for celery around Lake Okeechobee, I believe when we have a normal crop of celery in Florida and California it looks disastrous to me.

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THE INFLUENCE OF STARTER SOLUTIONS ON LETTUCE AND CELERY SEEDLINGS ON THE EVERGLADES MUCK

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Celery plants generally have a yellowish color for ten days or two weeks after transplanting. Both lettuce and celery plants become established very slowly and show considerable irregularity in the growth and size of plants in the row. Some plants remain relatively small until maturity.

Several starter solutions containing vary-