

*Northon, Charles*

# Mineral Colloids

*2-1-50  
3-2-50*

Build Your Soil  
Improve Your Crops  
Pocket Additional Profit

*Ken  
Harrill*

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Enjoy Vegetables, Fruits, Corn  
and Edibles, Rich in Essential  
Vitamins and Colloidal Minerals  
with Improved Delicious Flavor.

# MINERAL COLLOIDS

22.55	Phosphoric Content	Nickel	.06
27.04	Calcium Phosphate	Manganese	.6
5.46	Alumina	Vanadium	.05
4.40	Oxide Iron	Titanium	.0
10.22	Carbon Dioxide	Copper	.05
.76	Soda	Chromium	.1
1.16	Potash	Boron	.15
9.57	Carbonate of Lime	Silica Gel	7.8176
1.60	Magnesia	Iodine	.65
.57	Sulphur	Moisture	4.22
.72	Fluorine	Cobalt	.0026

MINERAL COLLOIDS is a sweetening and continuous feeding phosphatic colloidal mineral combination of more than 20 essential plant food elements.

SOIL BUILDERS, INC.  
 Division of  
 COLLOIDAL PRODUCTS OF AMERICA, INC.  
 Orlando, Florida and New York, N. Y.

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CHARLES NORTHEN, M. D.

## FOREWORD

DOCTOR NORTHEN'S work has obtained such recognition that the article "Modern Miracle Men", written by Rex Beach, as produced in the June, 1936, Cosmopolitan, was ordered, by the Senate of the United States (See Senate Document No. 264, 74th Congress, Second Session) and printed by the United States Printing Office.

**T**HIS BOOKLET is dedicated to Dr. Charles Northen, Director of Colloidal Institute, whose research work in Soil Chemistry is attracting world-wide attention.

DR. NORTHEN'S work has not been limited to Florida. Growers from all parts of the United States and Canada visit and consult him on the various problems connected with Soil Science.

DR. NORTHEN discovered MINERAL COLLOIDS in 1927, and

*had it not been for his alert eye, his scientific training, his wide experience in Soil Chemistry, the great agricultural value of this unique product might have remained undiscovered.*

HIS KNOWLEDGE of Colloidal Chemistry and his untiring efforts, however have won for MINERAL COLLOIDS the endorsement of all leading authorities and established it as one of the recent major contributions to the science of Soil Culture.

Roger Babson, the Great Statistician says of Dr. Northen:

"His message and his work are of utmost economic importance to this nation. Larger returns per acre because of better grades should interest all growers. Better health because of greater resistance contributed by foods rich in minerals and vitamins should interest every individual."



NATHAN MAYO  
COMMISSIONER

THE STATE OF FLORIDA  
DEPARTMENT OF AGRICULTURE  
TALLAHASSEE

Mr. A. E. Pickard  
Orlando, Florida

Dear Mr. Pickard:

My intimate contact and direct interest in our citrus industry have caused me to be anxious about the situation our growers face in the problem of trying to reduce the cost of production without lowering quality and quantity of fruit.

Just a few days ago, I had an opportunity to discuss this matter with Dr. Charles Northen of Ocala and I was so impressed with his ideas that I told him I wished he might have the same kind of talk with you and a few other leaders so vitally interested in these same matters.

He expressed interest in having such discussions and I am writing to ask that you take time to go thoroughly into this with Dr. Northen when opportunity comes. His training in certain scientific branches and his long studies and research in biochemistry and nutrition have brought him into agriculture with a rather unusual viewpoint.

He has studied Florida and her advantages and has given freely of his time to further her general interests. You perhaps are conversant with some of the work he has done for the State.

The Doctor has no pet theories and his accomplishments along certain lines have tended to prove the practical value of his ideas. I am of the opinion that you would find a careful consideration of his work productive of good results.

With kindest regards and best wishes, I am

Yours sincerely,

NM:aws

*Nathan Mayo*  
Commissioner

**MINERAL COLLOIDS**

Better Soils—Larger Profits



**T**HE old theory that good crops can be produced by fertilizing with the three major elements, viz, nitrogen, phosphorus and potash, is unsound. Healthy vegetation of every sort requires, and is constantly absorbing, more than twenty mineral elements from the soil. All plant and animal life would disappear from the earth if it were not for the natural mineral colloids in the soil, placed there by Mother Nature in colloidal form.

The United States Department of Agriculture has issued a bulletin in which they indicate that the physical properties of the phosphatic colloids (MINERAL COLLOIDS) are similar to the natural colloids of the soil.

**IMPORTANCE OF MINERAL COLLOIDS**

If man opposes nature by steadily depleting the soil of its rarer mineral elements, through the yearly harvesting of crops, and makes no provision for replacing these elements, he gradually robs the soil of its fertility, and the mere addition of fertilizers containing nitrogen, phosphorous and potash, will not restore that fertility.

Dr. P. L. Gile, of the United States Department of Agriculture, Washington, D. C., states that the value of any agricultural soil will soon be measured by the quantity and the quality of natural colloids in it.

**THE MEANING OF COLLOIDAL**

Colloidal means finely divided. When a material is colloidal, it is in an extremely fine state of subdivision—finer by far than can be ground by commercial machinery. Minerals in colloidal form are more congenial with nature's plan.

All mineral elements in the structure of animal or vegetable life are found there only in colloidal form.

According to the United States Bureau of Chemistry and Soils, over 70% of the colloids in MINERAL COLLOIDS would pass through a mesh of 25,000,000 openings to the square inch—if such a mesh were possible.

Approximately 90% of MINERAL COLLOIDS is in this finely divided colloidal state. It disintegrates almost instantly when moistened, therefore, when applied, 96% of it is immediately available as plant food.

To express it in another way, 90% of MINERAL COLLOIDS is so fine that it is taken up in suspension by plant food solutions and in turn built into the cell structure of plant life without the necessity of becoming soluble.

By so doing it becomes a part of the cell structure by a much shorter route than other plant foods which are not colloidal in the beginning.

#### PHYSICAL PROPERTIES OF MINERAL COLLOIDS

The great value in MINERAL COLLOIDS lies in its colloidal or physical properties, rather than its chemical analysis.

It tends to prevent leaching and holds moisture, nitrogen, potash, and other plant foods, in the soil.

It balances the soil and permanently improves its crop-producing capacity.

When a matter becomes colloidal, it enters a new field of activity and has properties which its coarser particles do not possess. Here we enter the field of Colloidal Chemistry, where the ordinary laws of chemistry do not apply.

Milton Whitney, late chief of the United States Bureau of Soils, has stated that the physical properties of colloids show that they are soil amenders which have a range of action much wider than fertilizers.

#### PLANTS REQUIRE ALL THE ELEMENTS

Dr. Jacob G. Lipman, editor of *Soil Science*, and director of Rutgers Agricultural College, says:

*"The influence and importance of elements other than nitrogen, phosphorus and potash, may exert a stimulating effect on plant growth. We should consider them as playing some part in respect to disease resistance."*

MINERAL COLLOIDS contains a large number of elements "other than nitrogen, phosphorus and potash", all of which are phosphates.

Crops grown with MINERAL COLLOIDS are healthier, more disease-resistant, and have better carrying qualities.



#### SUPPLEMENTS TO FERTILIZERS NECESSARY

Oswald Schreiner, Chief of the Division of Soil Fertility, Bureau of Chemistry and Soils, United States Department of Agriculture, Washington, D. C., says:

*"It is to be expected that the less common elements will be found to be most important factors in plant and animal nutrition. Hence, provision must be made for determining deficiencies where they occur, and meeting them through appropriate supplements to the fertilizer applied."*

MINERAL COLLOIDS is the perfect supplement to any fertilizer, whether applied with it or separately. It will improve any mixture in which it is put.

#### DANGER IN USE OF PURE FERTILIZERS

Dr. H. G. Knight, Chief of Bureau of Chemistry and Soils, United States Department of Agriculture, says:

*"Over a considerable area of the United States, it appears evident that growing crops require more than the addition of fertilizer, containing nitrogen, phosphoric acid and potash salts. Furthermore, it has been stated that the continued use of relatively pure fertilizers may prove detrimental."*

#### NOT A NEW PRODUCT

MINERAL COLLOIDS is not a new product; but its exceptional value was not appreciated until extensive research and standardization work by Dr. Northen directed the attention of agricultural authorities to its vital importance as an essential plant food.

Since that time, it has been used with outstanding success on almost every variety of crop in nearly every state in the Union.

# Facts Proven by Field Tests

*First:* MINERAL COLLOIDS contains more of the rare mineral elements required by all vegetable life than any other product known to agriculture.

*Second:* MINERAL COLLOIDS is non-acid and non-burning. It sweetens the soil economically and safely, giving larger crops at less cost.

*Third:* MINERAL COLLOIDS restores the run-down, depleted soil to its rich, virgin condition of productiveness.

*Fourth:* MINERAL COLLOIDS attracts and tenaciously holds moisture in the soil. There is less danger from drought where it has been liberally used.

*Fifth:* MINERAL COLLOIDS hastens germination of seeds and maturity of all kinds of crops. It greatly develops the root system, thus giving the plant a quick start. It is standardized to fit soil requirements.

*Sixth:* MINERAL COLLOIDS positively will not leach. It can therefore be put down in any quantity at any time with beneficial results, whether separately or in conjunction with any other fertilizer desired. The longer it has to blend with the soil, the better its action.

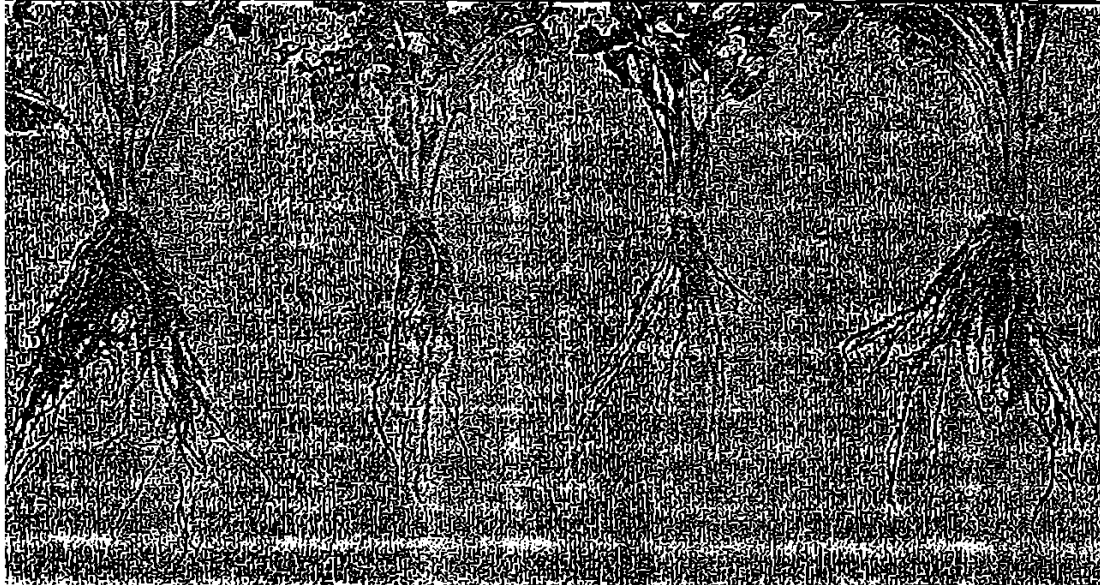
*Seventh:* MINERAL COLLOIDS tenaciously holds nitrogen, potash and other plant foods in the soil, thus tending to prevent their leaching until such time as the vegetation is able to take them up. As MINERAL COLLOIDS is rich in phosphorus, the same results can be obtained with much lower percentages of ammonia and potash than otherwise would be necessary.

*Eighth:* MINERAL COLLOIDS stimulates, feeds and increases soil bacteria, and can be safely used in any quantity at any time.

*Ninth:* MINERAL COLLOIDS will improve the carrying quality and sugar content, as well as the quantity yield, of all fruits and vegetables.

*Tenth:* MINERAL COLLOIDS will cause fruits and vegetables to mature from several days to several weeks earlier. Such fruits and vegetables will also be more firm, tasty and have far better carrying qualities.





Celery Plants Same Age. Outer Plants Grown With Mineral Colloids. Inner Plants Treated by the Usual Methods.

### METHOD OF CORRECTING SOIL ACIDITY

Aside from the lack of mineral elements in soils, the most common source of trouble is Soil Acidity. Bacteria cannot live, and hence farm crops cannot thrive, in an extremely acid soil. Where highly concentrated chemical fertilizers have been used for any period of time, soils will generally be found acid.

MINERAL COLLOIDS contains a large percentage of Phosphate of Lime, as well as numerous other mineral phosphates, all colloidal, and is one of the best, safest and least expensive correctors of Soil Acidity.

MINERAL COLLOIDS, being a sweetening, continuous feeding phosphate, increases the value of any fertilizer material, adds to the productive ability of any other phosphate, and provides essential minerals so important in human nutrition.

### FEED YOUR CROPS AS NATURE DOES

MINERAL COLLOIDS, natural and true Florida superfine phosphate, is a natural product coming from the earth and so far as known, it occurs nowhere except in Florida. It is richer in the essential mineral elements than any other product yet discovered, and its physical properties are practically the same as natural mineral soil colloids. It is the safest and most efficient soil balancer known to the agricultural world. Do not confuse mineral colloids with soft phosphate, ground rock phosphate or superphosphate which is half sulphuric acid.

MINERAL COLLOIDS contains as much calcium as bone meal. It also contains as much phosphorus and, in addition, more than twenty of the other mineral elements necessary to plant life. All are in a free colloidal condition and are thus ready as plant food. It is, therefore, superior to bone meal, and much lower in cost.

#### "MAKE POTASH AVAILABLE"

"The combination of circumstances attending the lack of sufficient available potash is one of the critical factors in potash production. It is not entirely met, however, by supplying large quantities of potash in the soil. On some soil types and in dry seasons the potash does not remain available. It is possible that a more complete remedy may be found only by including other mineral elements with potassium in the fertilizer applied."

—By Dr. Toddingham, University of Wisconsin."

This situation is admirably met by the use of Mineral Colloids both as a source of phosphate and as an agent to make potash available and keep it available.

Colloidal minerals tend to prevent the locking up of potash with other elements in the soil. Also, these colloidal minerals tend to break up the chemicals which lock the potash in the soil. There is no phase of fertilizing, soil building or crop feeding in which colloidal minerals do not play an important part.

They contribute to the farmer's success by improving his soil, giving him more benefit out of any fertilizer material and supplying phosphate and the essential, rare minerals.

#### SATISFY YOURSELF

Here is a method by which you can prove for yourself that MINERAL COLLOIDS will assist germination of seeds, hasten the growth of plants and produce a better crop. At some point in your garden, plant a few hills of beans, corn, potatoes, squash, or any other vegetable. A few feet away, plant the same number of seeds under exactly the same conditions, but add two or three handfuls of MINERAL COLLOIDS, well mixed with the soil in the center of the hill. The results will convince you that the liberal use of MINERAL COLLOIDS can only result in *liberal profits*.



### SAVE HALF YOUR FERTILIZING COSTS

MINERAL COLLOIDS is not sold as a complete fertilizer, but is a rich and inexpensive source of phosphorus and essential colloidal rare mineral elements. If we may have the privilege of consulting with you on your fertilizing problems, we are confident we can show you how to save much of your fertilizing costs.

For example, the following all purpose superstrength formula can be mixed by any grower on his own property at a lesser cost than average so called "complete" fertilizers. A lesser quantity is required to produce bounteous crops of vegetables, fruits, nuts, etc., high in fancy grades, improved in flavor and rich in essential vitamin and colloidal mineral content.

#### FORMULA

5-13½-5

250 lbs. nitrate of soda .....	16%
200 lbs. sulphate of potash .....	
200 lbs. sulphate of ammonia .....	25%
1350 lbs. Mineral Colloids .....	

The above formula gives you super growing power. At the same time it builds your soil, due to the colloidal mineral content.

#### CAUTION

The grower should be cautious of the word "colloidal," which is sometimes indiscriminately applied to lower grades of materials handled by those who have little or no knowledge of the physical or chemical properties of the product.

Dr. Charles Northen,  
Orlando,  
Florida

Dear Dr. Northen:-

I was pretty well discouraged over trying to combat the problem of soil acidity on my celery farm and was about ready to give up the job when I consulted you. I had called upon all of the expert assistance I could think of without any tangible results.

Following your advice I succeeded in conditioning my soil at a much lower expense than I thought possible. My land is improving steadily and my fertilizing expense has been halved.

Crops grown under your direction and with the liberal use of MINERAL COLLOIDS have shown a better yield and better carrying quality.

Enclosed is a photograph of some celery grown in that manner. It testifies to the value of MINERAL COLLOIDS to the truck farmer. I couldn't get along without it.

Sincerely yours,



Encl.

RB:F

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REX BEACH

The noted author who is farming scientifically at Sebring, Florida,  
says of MINERAL COLLOIDS:  
*"I couldn't get along without it."*

## STRAWBERRIES

"Since getting reports from some of our farmers around Plant City who are using MINERAL COLLOIDS, we believe it is going over big as a soil conditioner. There are about fifty of our growers testing this in comparison with hardwood ashes and other soil conditioners, costing more than twice as much, and the results are fine. Most of them tell us that they can tell to the row where they stopped using MINERAL COLLOIDS, as the plants are healthier, larger and producing more strawberries."

ROBINSON BROTHERS, Plant City, Fla.

## MISCELLANEOUS FRUIT

"I made my first application of MINERAL COLLOIDS six years ago. I have used it every year since, applying nearly 440 tons last fall, and an equal amount this season. It has given me a much better wood growth as well as a better textured and sweeter fruit. I am also convinced that MINERAL COLLOIDS has enabled me to reduce my cost of fertilization at least 50%."

\*W. K. W., Orlando, Fla.

## MISCELLANEOUS VEGETABLES

"I want to tell you of the splendid results that I got from using MINERAL COLLOIDS in growing vegetables on my farm at this place. I grew onions, cabbages and beans, getting tremendous yields of the very best quality, that sold at a premium on the market, netting me considerably over \$1,000.00 per acre. I give MINERAL COLLOIDS the credit for this unusual result as no other plant food was used. It is useless for me to say that I am strong for MINERAL COLLOIDS and am planning on using it on all my crops this fall and the following Spring. I feel that you are entitled to this word of appreciation of your wonderful product."

\*H. W., Lake Hamilton, Fla.

## WATERMELONS

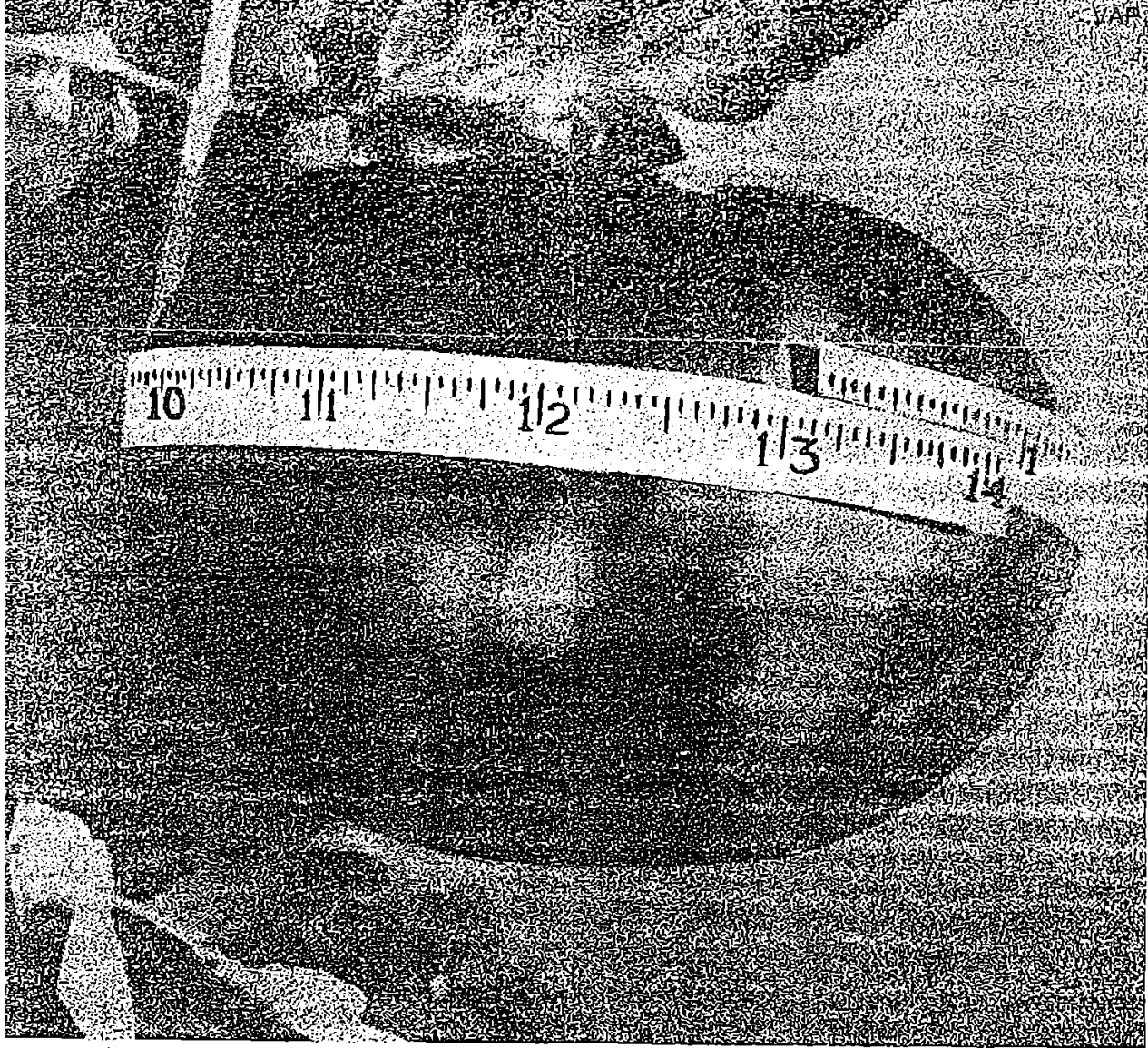
"I used MINERAL COLLOIDS on watermelons this year, mixing it well around the hills after they were planted. This was the first satisfactory crop of watermelons I have grown in Florida, after eleven years of trucking in the state. My melons were sold to the Manhattan Market, and they pronounced them the best they had this season. I can un-qualifiedly state that it is the most efficient fertilizer element I have ever used on watermelons."

W. HATLEY'S TRUCK FARM, St. Petersburg, Fla.

"The watermelons we bought from Mr. W. Hatley were the best we had the entire season. They were universally free from the white heart, and had a splendid flavor. Customers invariably returned with the request that we get them some more of the same kind. We bought all we could get from Mr. Hatley at the top market price, and could have used many more if he could have delivered them to us. The City Inspectors commented on Mr. Hatley's melons as being of superior grade. We would be glad indeed if more such melons could be grown here to supply the demand of those appreciating superior quality."

MANHATTAN MARKET, INC., St. Petersburg, Florida.

\*Complete name and address of any "initialed" testimonial, supplied on request.



One of Fifty-Two Tomatoes Weighing From Five Ounces  
to Twenty-One Ounces, Grown on a Single Vine  
Grown With MINERAL COLLOIDS

"I have just returned from a trip to our packing house in Boynton and also an inspection of our fields. I was pleasantly surprised to see what little damage was done to our tomato fields by the 5-inch rain of last week and the 6-inch rain of Monday night and Tuesday of this week.\* \* \* A U. S. Inspector was inspecting our tomatoes being picked today. I asked him what he thought of the quality. He said, 'I don't understand it.—After two heavy rains these tomatoes are firmer and in better condition than any tomatoes I have ever inspected anywhere. It just seems impossible and I wouldn't believe it if I hadn't seen it myself. There can be only one explanation.—There really is something to this mineralization. All other tomatoes I have inspected in this district are badly water damaged, being soft and rotting before they will ripen!'"

\*G. F. L., West Palm Beach, Fla.

\*Complete name and address of any "initialed" testimonial, supplied on request.

# CORN, TOBACCO, PEANUTS

## CORN

"About May 10th, 1936, I prepared about five acres by broadcasting Mineral Colloids, using 500 pounds per acre, on which I planted silage corn which produced about 18 tons to the acre which was very unusual as 1936 was a very dry season. This is about 10 tons per acre on the average for this section."

\*B. R., Bristol, Tenn.

## CORN AND SOY BEANS

"Referring to the MINERAL COLLOIDS I used, the following general results were noted: A good response when applied as a side dresser to onions, beets, beans and cabbage. A good response when applied under soy beans—as well as I have been getting from Superphosphate alone. Definite response equal to Superphosphate when mixed with manure and applied in the drill under a corn crop. The history of the field tests show that MINERAL COLLOIDS becomes available soon after it is applied."

\*J. M. N., Hertford, N. C.

## TOBACCO

"By the use of MINERAL COLLOIDS we made the best tobacco we have ever grown. We could tell a distinct improvement in the crops, even to the row. I am advising every farmer to use it this year, and I have already bought 30 tons to use on our own crops."

\*W. K. S., Conway, South Carolina

## TOBACCO

"After using MINERAL COLLOIDS on my farms, I can recommend to every tobacco grower to use it. I wouldn't take \$40.00 per ton for the car I have on hand, and do without it this season."

\*E. M. M., Nichols, S. C.

## PEANUTS

"I used MINERAL COLLOIDS under my peanut crop this year and was greatly pleased with the increased yield per acre. I expect to use it again next year and in greater quantities, as it builds my soil back in addition to increasing my yields. I can heartily recommend it to other farmers."

\*L. F. S., RFD #2, Ozark, Ala.

"We find we are able to use MINERAL COLLOIDS on anything and under all conditions, without the least fear of harming the plants. We use it to dip the roots of plants while transplanting. It keeps the roots moist, and when set out they respond at once, showing a larger immediate growth than those set without it. We have used most every kind of fertilizer, but have never found anything to compare with MINERAL COLLOIDS. In using other fertilizers we find plants will show a growth for a short time, then will take "time out" to harden up, while in using your material, the plants show an even, continuous and steady growth, with no apparent loss of time or energy. We recommend it to anyone interested in showing better results in plant growth."

\*"B-'s" NURSERIES, Weslaco, Texas.

\*Complete name and address of any "initialed" testimonial, supplied on request.



"During the past year we have added an additional nine holes to our former nine hole golf course. This construction was laid out in an area covered with very heavy scrub and rank growth consisting largely of palmetto, the roots of which carry tannic acid, and the entire soil condition after grubbing was very acid. We used about 3000 lbs. per acre of MINERAL COLLOIDS to condition the soil before planting to Bermuda grass. The outcome was not only satisfactory, but really remarkable. We planted Bermuda cuttings in September, 1935, and by Christmas the fairways were well covered and satisfactory to play. By January they were as solidly grassed as possible and have remained in good condition ever since. We are convinced that the use of this material not only made possible a finished golf course in a space of time not thought possible, but made a fairway condition that is second to none in Florida."

PINE CREST LAKES COUNTRY CLUB, F. de Anguera, President,  
Avon Park, Fla.

"Since we began the use of your material on the "Bobby Jones" course, I am pleased to note the following results: During the past year the texture of our grass has been improved—its root system is firmer and more extensive and we have used less other fertilizer than usual. We had two greens which we had not been able to carry through the summer in good condition. After applying MINERAL COLLOIDS these greens showed remarkable improvement. I think MINERAL COLLOIDS should be used as a base for all our fertilizers and should be mixed with soil used in top dressing."

L. M. WHITTEN, Greenskeeper at BOBBY JONES, Sarasota, Florida

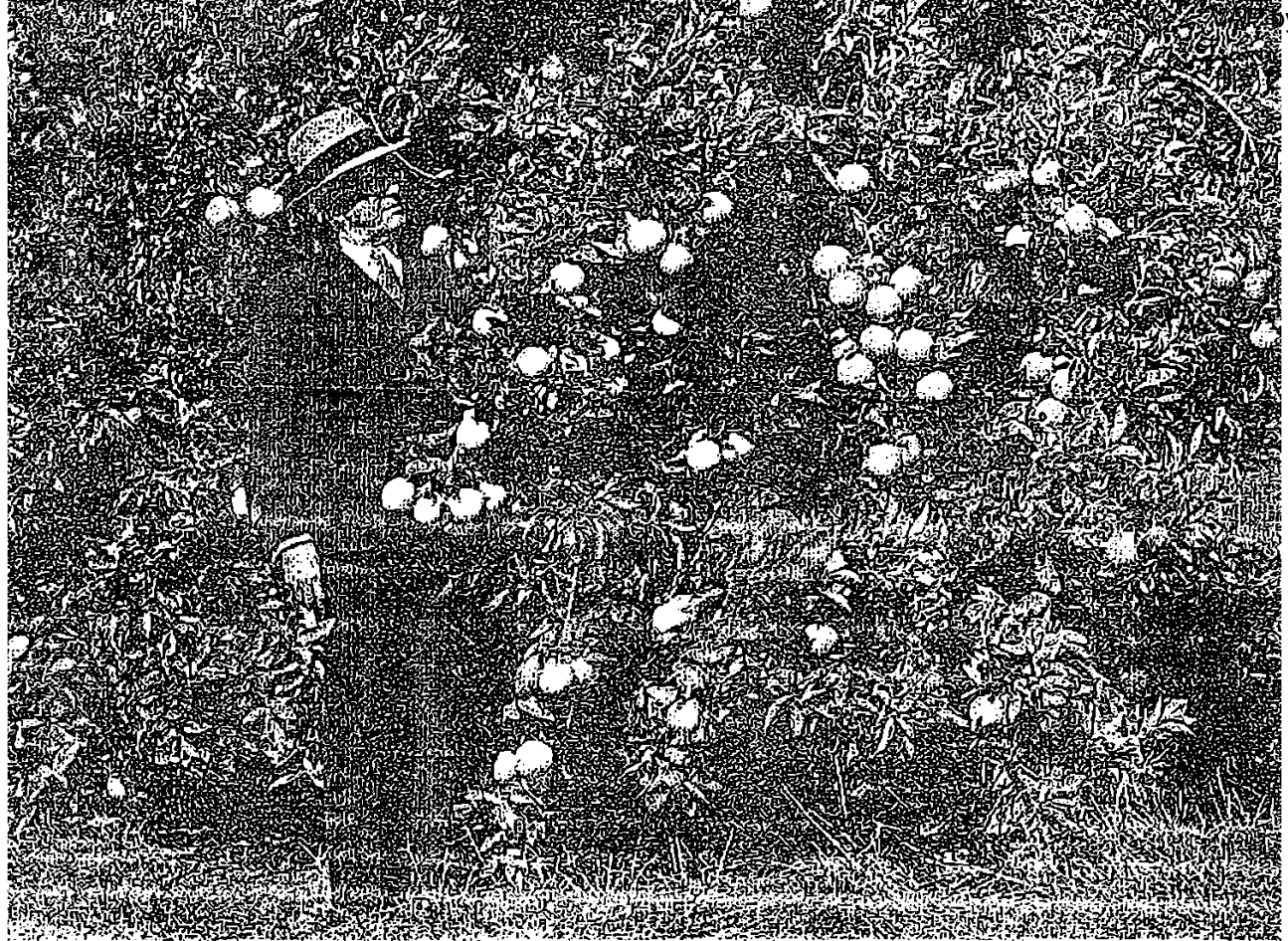
"My belief in MINERAL COLLOIDS is probably best evidenced by the fact that we have over 100,000 Tung Trees which are receiving a yearly application of 25 lbs. per tree, and we plan to continue this practice. A like application is also being given to each tree in our 160 acre lemon grove at Babson Park, Fla."

\*H. W. B., Gainesville, Fla.



*"Life Begins in the Colloidal Fraction of the Soil"*

\*Complete name and address of any "initialed" testimonial, supplied on request.



DR. NORTHEN'S SERVICES AVAILABLE

We have arranged with Dr. Charles Northen, discoverer of the unusual value of MINERAL COLLOIDS, and director of Colloidal Institute, to furnish a consultation service for all of our patrons. It is not necessary for you to take chances, when the services of one of the leading soil scientists is available to you.

We invite you to BE SAFE by making the fullest use of this consultation service.

It will pay you to bring your agricultural problems to leaders of thought and practice in the agricultural field.

SOIL BUILDERS, INC.

*Division of*

COLLOIDAL PRODUCTS OF AMERICA

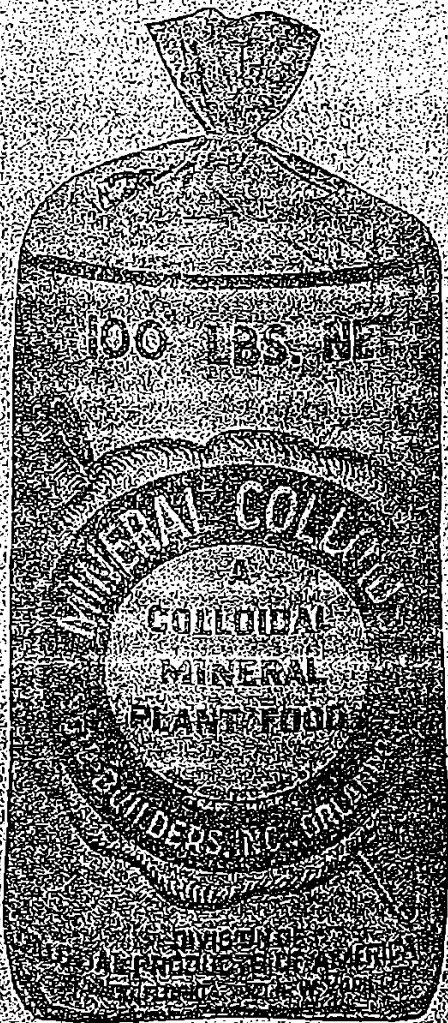
*Telephone 6882*

ORLANDO, FLORIDA

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# Insist on the Genuine!



*There is No Substitute for*  
**MINERAL COLLOIDS**  
 A 5-WAY ACTION PRODUCT

A Product in True and Natural Colloidal Form so Plant Life Can Make The Fullest Use of It. Supplies Essential Phosphates. Builds Soil. Helps Get More Out of Fertilizers. Adds Valuable Soil Balancing Minerals. Makes Bumper Crops. Finer and Better Quality.

Mineral Colloids Can Be Used With Manure, Organics or Other Commercial Fertilizers with Nitrate and Potash With Safety. IT IS NOT ACID IT WILL NOT BURN.

**SOIL BUILDERS, INC.**

*Division of*

**COLLOIDAL PRODUCTS OF AMERICA, INC.**

Orlando, Florida

SOLD BY

