

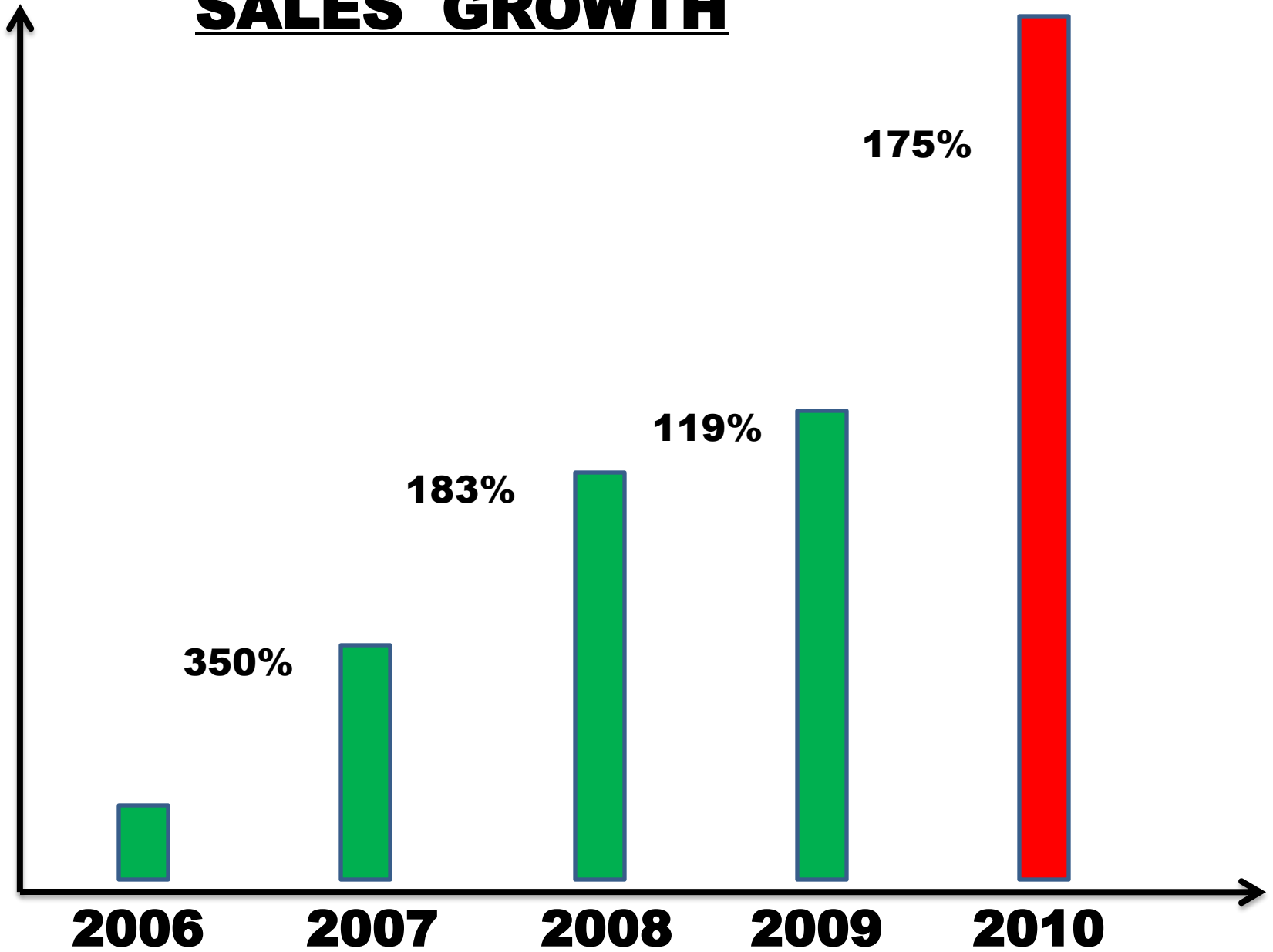


**JSS SUGARSNAX**

# **WHY FARMERS MARKETS ?**

- **CUSTOMER BUYS LOCAL & FRESH**
- **GROWER SELLS AT RETAIL**
- **GROWER DEVELOPES RELATIONSHIP WITH CUSTOMER**
- **GROWER CAN SUPPLY NUTRIENT DENSE FOODS**

# SALES GROWTH



# **“CUSTOMER QUOTES”**

- **Your carrots are very tasty, whenever I eat carrots I wished that it was from your garden. The carrots just taste so much better.**
- **You are right, your beats are different! I don't even like beets, but I like yours!**
- **What variety of tomatoes are yours? They are so sweet!**
- **Are you going to have those turnips again this year?**
- **Your onions are so sweet!**

# HAKUREI TURNIPS



# **BOB DUE**

## **TERRACED GARDENS FARM**

- **STARTED GARDENING IN 1948**
- **DAD WAS ORGANIC DAIRY FARMER**
- **STUDIED SOIL FERTILITY UNDER NEAL KINSEY**
- **STARTED MARKET GARDENING IN 2006**
- **USE HAY MULCH TO PROTECT SOIL**
- **EMPLOY WALK-BEHIND EQUIPMENT TO REDUCE COMPACTION**
- **TERRACED SLOPES PREVENT ERROSION**
- **HOOP HOUSES EXTENDING SEASONS**
- **GOOGLE: "BOB DUE" FOR WEB SITE**

# OUTLINE

- **SOIL TESTING, FERTILITY & TILLAGE**
- **COVER CROPS & HOW I USE THEM**
- **TERRACE CONSTRUCTION AND USE**
- **EQUIPMENT FOR THE FARM**
- **HOOP HOUSES TO EXTEND SEASON**
- **NEWSLETTER AND MARKETING**

# **SOIL TESTING**

- **HOW MANY OF YOU HAVE TESTED?**
- **DID YOU UNDERSTAND THE RESULTS?**
- **DID YOU AMMEND?**
- **DID YOU SEE AN IMPROVEMENT?**
- **WERE YOU HAPPY WITH THE RESULTS?**



# **THE ALBRECHT SYSTEM**

- **A RECIPE FOR BALANCED SOIL FERTILITY**
- **WORKS WITH CONVENTIONAL OR ORGANIC SYSTEMS**
- **WORKS WITH ALL SOIL TYPES ALL OVER THE WORLD**
- **USED WITH ALL CROPS AND CROP SYSTEMS**
- **SIMPLE TO FOLLOW**
- **ELIMINATES THE GUESS WORK**

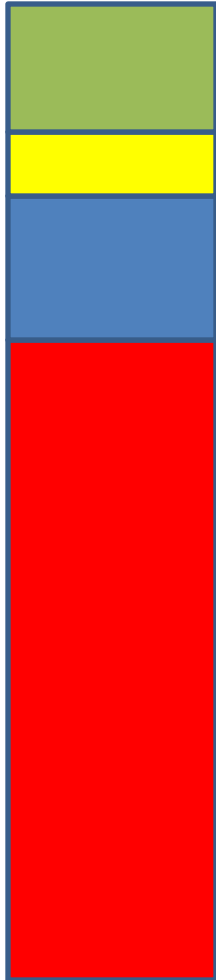
# WHERE TO TEST?

- **EVERY LAB USES DIFFERENT METHODS TO TEST AND DIFFERENT WAYS TO LIST THE RESULTS**
- **ALL DATA FOR THE ALBRECHT SYSTEM IS BASED ON ONE SET OF TESTS & ONE WAY OF REPORTING**
- **LINK FOR TESTING:**  
**<http://www.kinseyag.com/SoilAnal.htm>**

# BALANCING THE pH

- **TCEC = TOTAL CATION EXCHANGE CAPACITY**
- **SIMPLY A MEASUREMENT OF THE SOIL CAPACITY TO HOLD Ca, Mg, K, Na, etc.**
- **THE Ca & Mg SHOULD OCCUPY 80%**
- **Ca SHOULD BE 60 TO 70%**
- **Mg SHOULD BE 20 TO 10%**
- **K SHOULD BE 3 TO 5%**

# SMALL TCEC (8)



**230#  
(12%)**

**2200#  
(68%)**

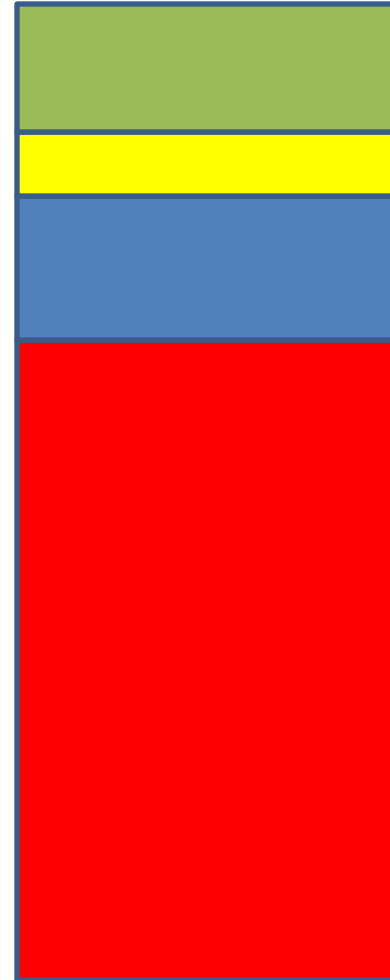
**ACIDITY**

**K 3% to 5%**

**MAGNESIUM  
20% to 10%**

**CALCIUM  
60% to 70%**

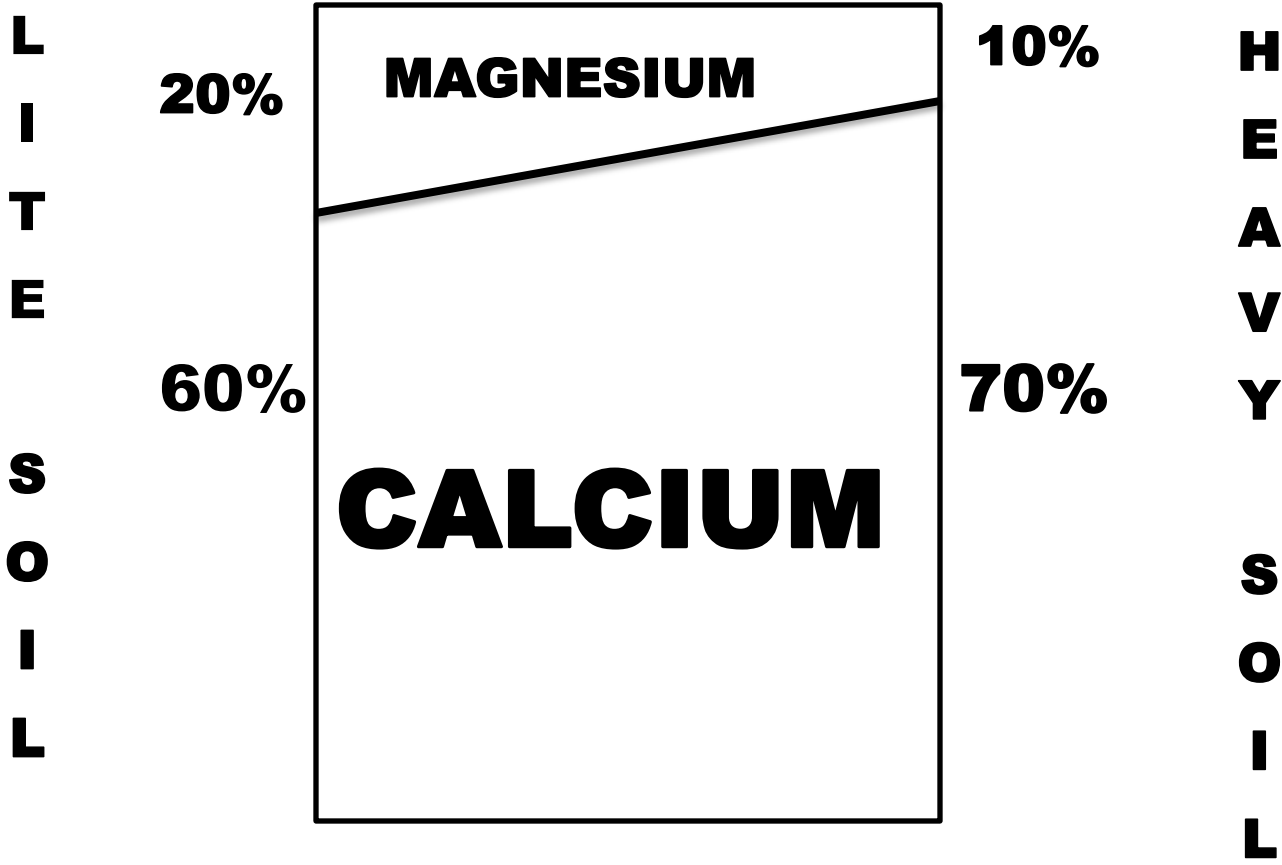
# LARGER TCEC (16)



**460#  
(12%)**

**4400#  
(68%)**

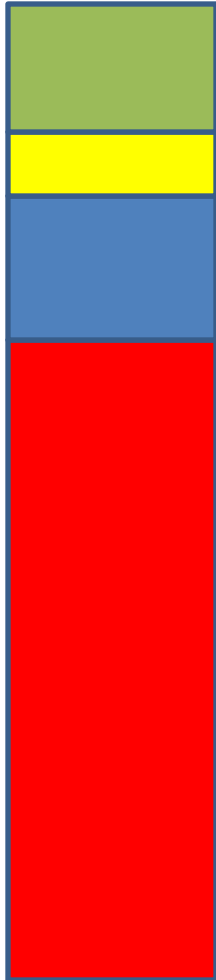
# CA/MG RELATIONSHIP



# pH

- **IF YOU HAVE A pH ABOVE 7 WOULD YOU NEED LIME?**

# NORMAL pH



**K 3% to 5%**  
**MAGNESIUM 20% to 30%**  
**CALCIUM 60% to 70%**

# TN EXAMPLE 7.5 pH



**MAGNESIUM 30%**  
**CALCIUM 60%**



# DEAN'S SOIL

	<u>2008</u>		<u>2009</u>
<b>pH</b> . . . . .	<b>7.5</b>	. . . . .	<b>6.7</b>
<b>TCEC</b> . . . . .	<b>10.51</b>	. . . . .	<b>13.06</b>
<b>P</b> . . . . .	<b>256#</b>	. . . . .	<b>424#</b>
<b>Ca</b> . . . . .	<b>2553#</b>	. . . . .	<b>3024#</b>
<b>Ca</b> . . . . .	<b>60%</b>	. . . . .	<b>58%</b>
<b>Mg</b> . . . . .	<b>759#</b>	. . . . .	<b>822#</b>
<b>Mg</b> . . . . .	<b>30%</b>	. . . . .	<b>26%</b>
<b>Cu</b> . . . . .	<b>1.5ppm</b>	. . . . .	<b>12.6ppm</b>



# SULFUR

- **USED TO MAKE PROTEIN**
- **HELPS SEEDLINGS SURVIVE COOL SOIL**
- **IMPROVES TASTE & QUALITY**
- **MOST SOILS LACKING**
- **40 TO 50 LBS PER ACRE, GOOD**

# PHOSPHORUS

- **300# PER ACRE IS GOOD**
- **OVER 1200# COMPLEXES OTHER NUTRIENTS**
- **USED BY PLANTS TO MAKE THE SUGARS**
- **GIVES MORE FLAVOR TO YOUR PRODUCE**

# **HOW TO INCREASE** **YOUR PHOSPHORUS**

- **MANURES AND COMPOST**
- **DAP (DIAMONIUM PHOSPHATE) 18-46-0**
- **SOFT ROCK PHOSPHATE**

# POTASSIUM

- **NEEDED FOR STRONG STALKS**
- **UTILIZED FOR THE CONTROL OF WATER IN THE PLANT**
- **HELPS PLANTS TO SURVIVE DROUGHT CONDITIONS**
- **TOO MUCH MAKES FRUIT & VEGETABLES BITTER**

# TRACE ELEMENTS

- **BORON** ----- .8-2 ppm
- **IRON** ----- 100-200 ppm
- **MANGANESE**----- 40-125 ppm
- **COPPER** ----- 2-10 ppm
- **ZINC** ----- 6-20 ppm

# DEGREE OF SENSITIVITY TO DEFICIENCIES OF MICRONUTRIENTS

<u>NUTRIENT</u>	<u>HIGH</u>	<u>MEDIUM</u>	<u>LOW</u>
<b>BORON</b>	<b>ASPARAGUS, BEET, BRASSICAS, CELERY, SPINACH</b>	<b>LETTUCE, ONION, SPINACH, SWEET POTATO</b>	<b>BEANS, CORN, CUCUMBER, PEAS, POTATO</b>
<b>COPPER</b>	<b>BEET, CARROT, CORN, LETTUCE, ONION, SPINACH</b>	<b>BRASSICAS, CELERY, CUCUMBER, PEA</b>	<b>ASPARAGUS, BEAN, POTATO</b>
<b>IRON</b>	<b>MOST CROPS</b>	<b>ASPARAGUS, CABBAGE, CORN</b>	
<b>MN</b>	<b>BEET, BEAN, CUCUMBER, LETTUCE, ONION, PEA, POTATO, SPINACH, RADISH</b>	<b>BROCCOLI, CABBAGE, CARROT, CAULIFLOWER, CELERY, CORN, CUCUMBER, TOMATO, TURNIP</b>	<b>ASPARAGUS</b>
<b>MO</b>	<b>BEET, BRASSICAS, LETTUCE, ONION, SPINACH, TOMATO</b>	<b>BEAN, PEA</b>	<b>ASPARAGUS, CARROT, CELERY, CORN, POTATO</b>
<b>ZINC</b>	<b>BEAN, CORN, ONION, TOMATO</b>	<b>BEET, POTATO</b>	<b>ASPARAGUS, CARROT, PEA</b>

# NATURE'S NOG

- **A BLEND OF SEAWEED & HUMATES**
- **DEVELOPED BY DR. TEE L. SENN**
- **PLANT GROWTH STIMULANT**

**[http://thenogstoreusa.com/Home\\_Page.html](http://thenogstoreusa.com/Home_Page.html)**



# **SOIL FERTILITY** **& DROUGHT**

- **MICHIGAN LAWN EXAMPLE**



# **PERSONAL EXAMPLES**

- **WALKERTON, IN. GARDEN**
- **MICHIGAN GARDEN IN PURE SAND**



**THE END**