





| Cassava:    | cassava: Initial findings and strategies                       |             |  |  |  |
|-------------|--|-------------|--|--|--|
|             | Data from about 2500 varieties (evaluation required six years) |             |  |  |  |
|             | Carotene concentration   |             |  |  |  |
|             |  | (µg / g FW) |  |  |  |
|             | Minimum  | 1.20        |  |  |  |
|             | Maximum  | 17.41       |  |  |  |
|             | Mean   | 2.39        |  |  |  |
| aŭ          | Standard Dev.  | 1.38        |  |  |  |
| HarvestPlus | Median   | 1.91        |  |  |  |



































| Cassava     | Inheritance studies   |   |  |  |
|-------------|---|---|--|--|
|             | From 32 segregating families we chose four families based on:<br>Adequate size (number of clones)<br>Average carotenoid content<br>Range of variation in carotenoid content |   |  |  |
| ېد<br>د     | SM 805-15 x MPER 297<br>MBRA 1A x MMAL 66<br>MCOL 2295 x SM 980-4<br>MTAI8 x CM 3750-7  | Mean <u>+</u> St.Dev.<br>4.46 <u>+</u> 2.44<br>3.14 + 2.65<br>4.83 <u>+</u> 2.96<br>3.62 + 1.74 | Range<br>0.76 – 8.77<br>0.16 – 11.16<br>1.45 – 9.99<br>0.44 – 8.45 |  |
| HarvestPlus | WIAD & GNI 3750-7   | 3.02 <u>+</u> 1.74  | 0.44 - 0.40  |  |



![](_page_5_Figure_3.jpeg)

![](_page_6_Picture_0.jpeg)

## Cassava: Genotype x environment studies

<u>First experiment</u>: 10 clones, 4 locs (Valle/Cauca), 3 reps

<u>Second experiment:</u> 6 clones, 3 locs (Valle, Meta, Atlántico), 6 reps

![](_page_6_Figure_4.jpeg)

![](_page_7_Figure_0.jpeg)

![](_page_7_Figure_1.jpeg)

## What to expect from cassava?

Cassava has a large inertia The NIR implies a breakthrough

Costs of analysis GREATLY reduced More resources for pollinations and field trials

No limit in the number of samples that can be analyzed Much better chances of success

REAL possibility to address the issue of Fe and Zn

Instant results imply facilitated logistics

![](_page_7_Figure_8.jpeg)

## What about Fe and Zn?

Strong GxE interaction

Strong effect of soil pH on Fe and Zn content in the roots

Strong effect of Fe content in the soil and Fe content in the roots

Possibility of "biofertilization"

Currently harvesting a trial to test for genetic differences

![](_page_8_Picture_6.jpeg)