
sadepan chimica
DIVISIONE AGRICOLTURA
Our development is deeply rooted
“ When the ecological awareness, the research and the introduction of new technologies create together advantages both for the consumer and for the product quality, then we are really talking of innovation and progress.”
Ecotechnology
GRUPPO MAURO SAVIOLA

Mauro Saviola Group

- 16 Companies belong to the Group
- 1630 employees
- 577 milions of euro consolidated annual turn over
- 1,500,000 MT of recycling wood per year (it means 10,000 trees saved every day)
- Italian leader of the particleboard industry and the third in Europe
- Mauro Saviola Group is active in 50 countries
- More than 1,000 trains of recycling wood collected in Europe every Year
- 175 trucks belong to the Group for the collection of recycling wood and to deliver the panels
- 16 different certifications of quality system, among these the ISO 9002, EMAS, E1 Catas Quality Award, Certiquality 100% and “FSC 100 % recycled”
- 1,500,000 mc of particleboards sold every year all over the world to produce furniture, waterproof ecological panel, fireproof ecological panel, flooring, …
- 5 Research Institutes to study and design the range of creative decorative elements

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Mauro Saviola Group

Agriculture Division

- The main European producer of Methylene Urea
- Two production plants of Methylene Urea (Viadana – Italy and Genk – Belgium)
- Production process is a new patented technology, unique to achieve MU in granular forms (round granules), yielding the lowest content of unreacted urea and salinity index
- Worldwide biggest plant to produce Methylene Urea in granular form (potentiality of *Pilot Plant* 35,000-40,000 MT/year)
- Among the main european urea importers (over 300,000 MT/year)

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Sadepan Chimica's Factories to manufacture Methylene urea

Liquid Methylene-urea

Genk (Belgium)

Granular MU/UF

Liquid Methylene-urea

Viadana (Italy)

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Mauro Saviola Group

Agriculture Division

Sadepan's **Methylene urea/ Urea Formaldehyde** uses new technology to produce the most completely reacted product on the market today. The position of Sadepan as a basic producer of Formaldehyde and the largest consumer of Urea in Italy insures a competitive position in the market place.

Mission

It is our mission to use our improved technology and strength as a basic producer to become a reliable supplier to the world for superior quality methylene urea fertilizer

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INNOVATIVE FERTILIZERS

These fertilizers can be called innovative and are advantageous because they :

- **Improve the yield with greater productions (greater efficiency)**
- **reduce the costs and the cultural practices**
- **Reduce or eliminate the impact on the ecosystem**

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Optimal Nitrogen fertilizer

An ideal nitrogen fertiizer should have the following characteristics **(Shoji and Gandeza, 1992)** :

- with only one application satisfy the crop nutrients requirement during the whole vegetative-productive cycle;
- Have the greatest % of crop utilization (uptaking); the average amount usually uptaken from the crop is maximum 50-70% during the first year of application **(Fink, 1992);**
- without any negative environmental impact

The ideal choice is slow Release Nitrogen

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Sadepan Chimica new manufacture technology

The raw materials used are:

- **Urea ($CO(NH_2)_2$)**
- **Formaldehyde (HCHO)**

The urea can be of national production or imported.

The formaldehyde is produced by Sadepan Chimica through a catalytic oxidation process of methanol (CH_3OH). in 9 plant .

The Sadepan Chimica MU/UF production process can be summarized into 2 phases:

1) synthesis of the urea-formaldehyde syrup, which is alimented into the granulation plant;

2) granulation with the final screening of the finished product.

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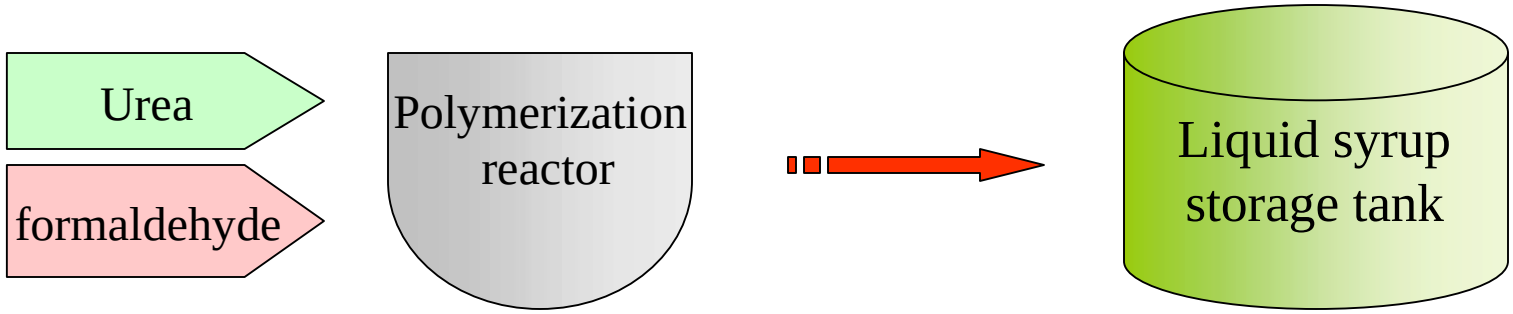
1° phase: synthesis of the urea-formaldehyde syrup



• this phase takes place into the polymerization reactors, in which the syrup is obtained;

• at the beginning, the formaldehyde and a part of urea react in controlled conditions;

• later on, the remaining urea is added up in different steps to obtain the short polymeric chains;

• making this, it is possible to obtain a product with a good distribution of the molecular weights, which positively affect the availability of the finished product.

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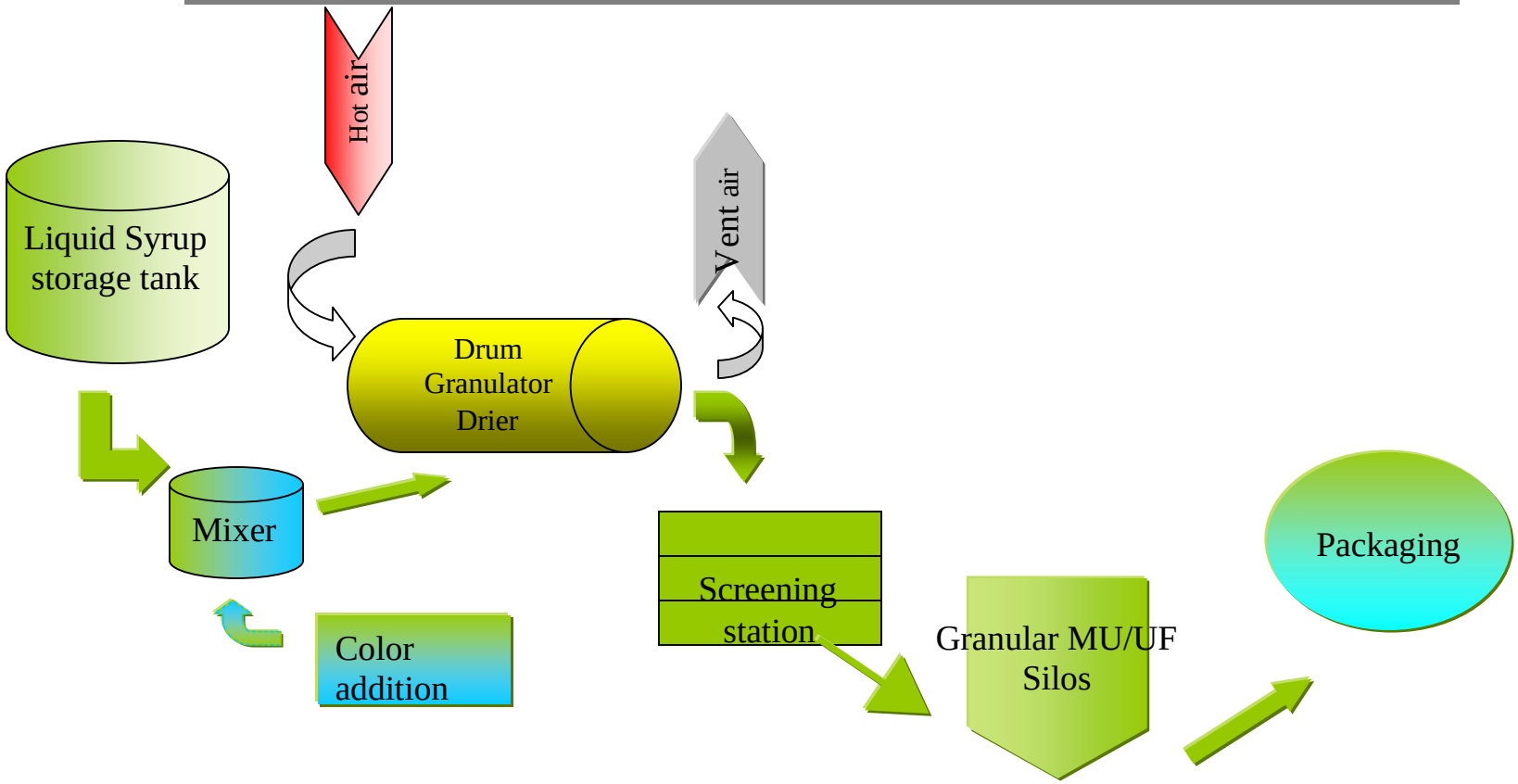
2° phase: granulation with the final screening of the finished product



•the liquid syrup is alimented in a fluid bed granulator where polymerization, drying contemporary granulation take place;

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Flow chart Process of Granulation Plant

Urea

Formaldehyde

Batch reactor

Production capacity per year of the Pilot Plant

35,000 – 40,000 MT

Hot air

Vent air

Liquid fertilizer storage tank

Drum Drier

Mixer

Color addition

Screening station

Granular MU/UF Silos

Packaging

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SADEPAN MU/UF products obtained by the new technology have:

INNOVATIVE PHYSICAL ASPECT

- Round granules with high U.I.

Less dust in Sadepan's MU/UF during production
Less friction during blending operations with others round granular raw materials

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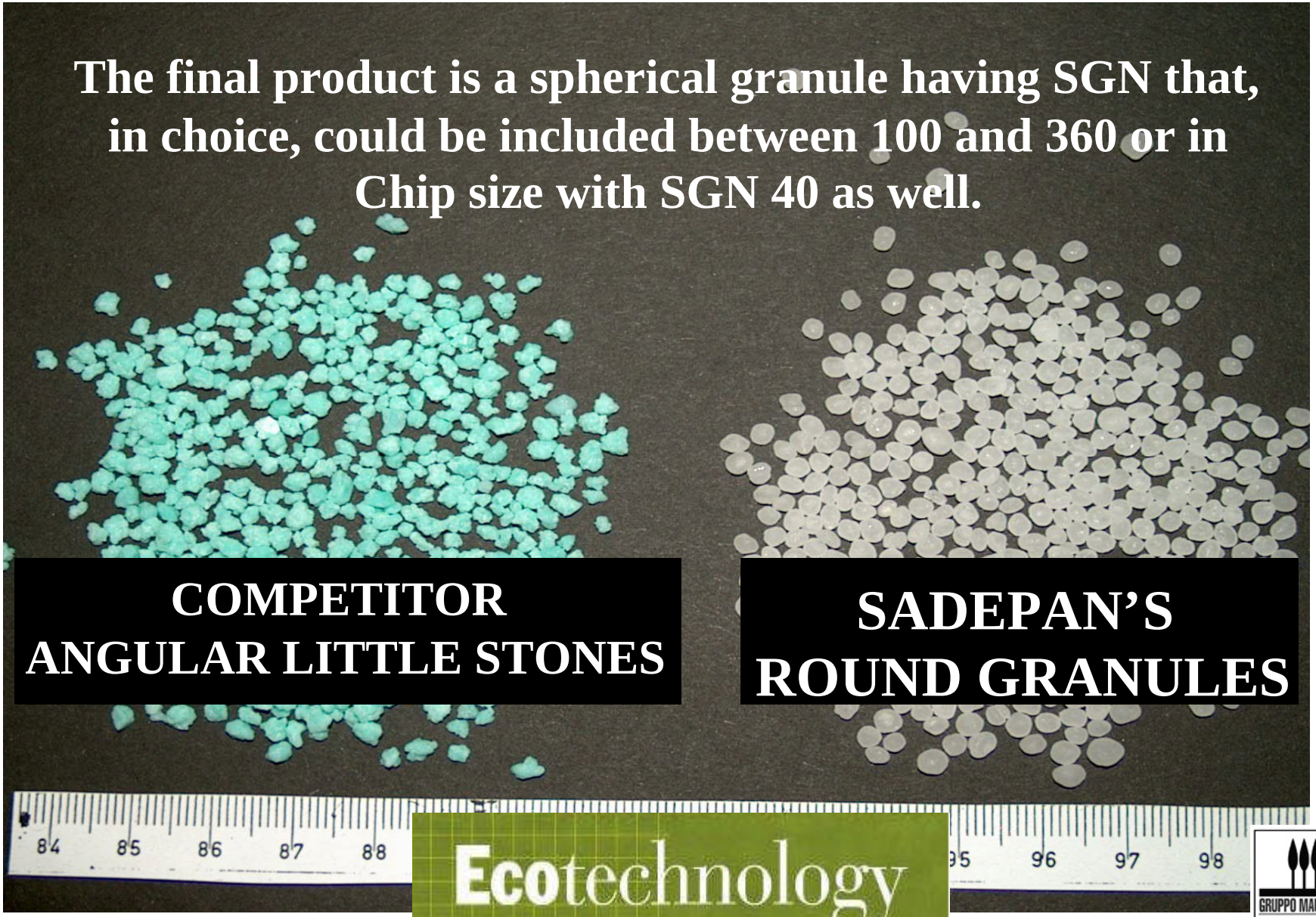
The final product is a spherical granule having SGN that, in choice, could be included between 100 and 360 or in Chip size with SGN 40 as well.



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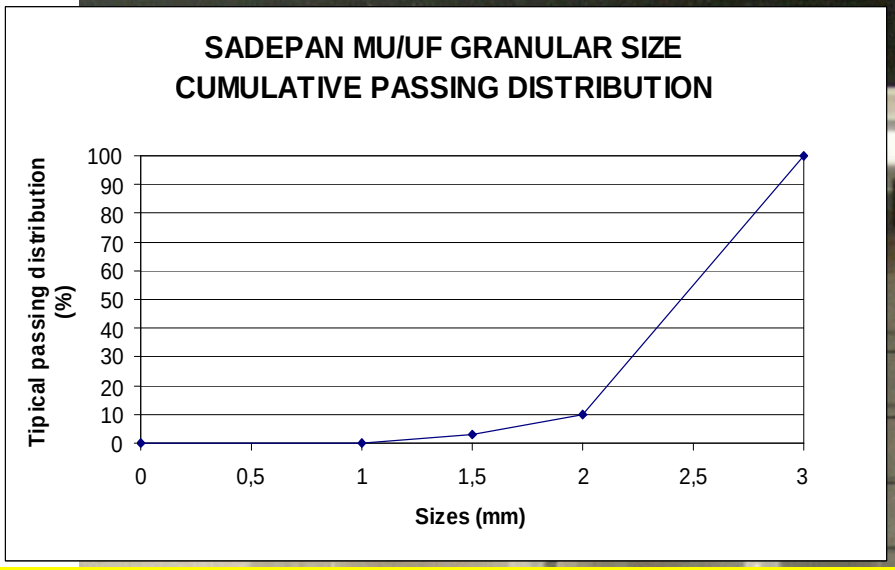
Granular – Std Size
(SGN 215)



SGN = 215

U.I. = 70

Powder content $< 1\%$

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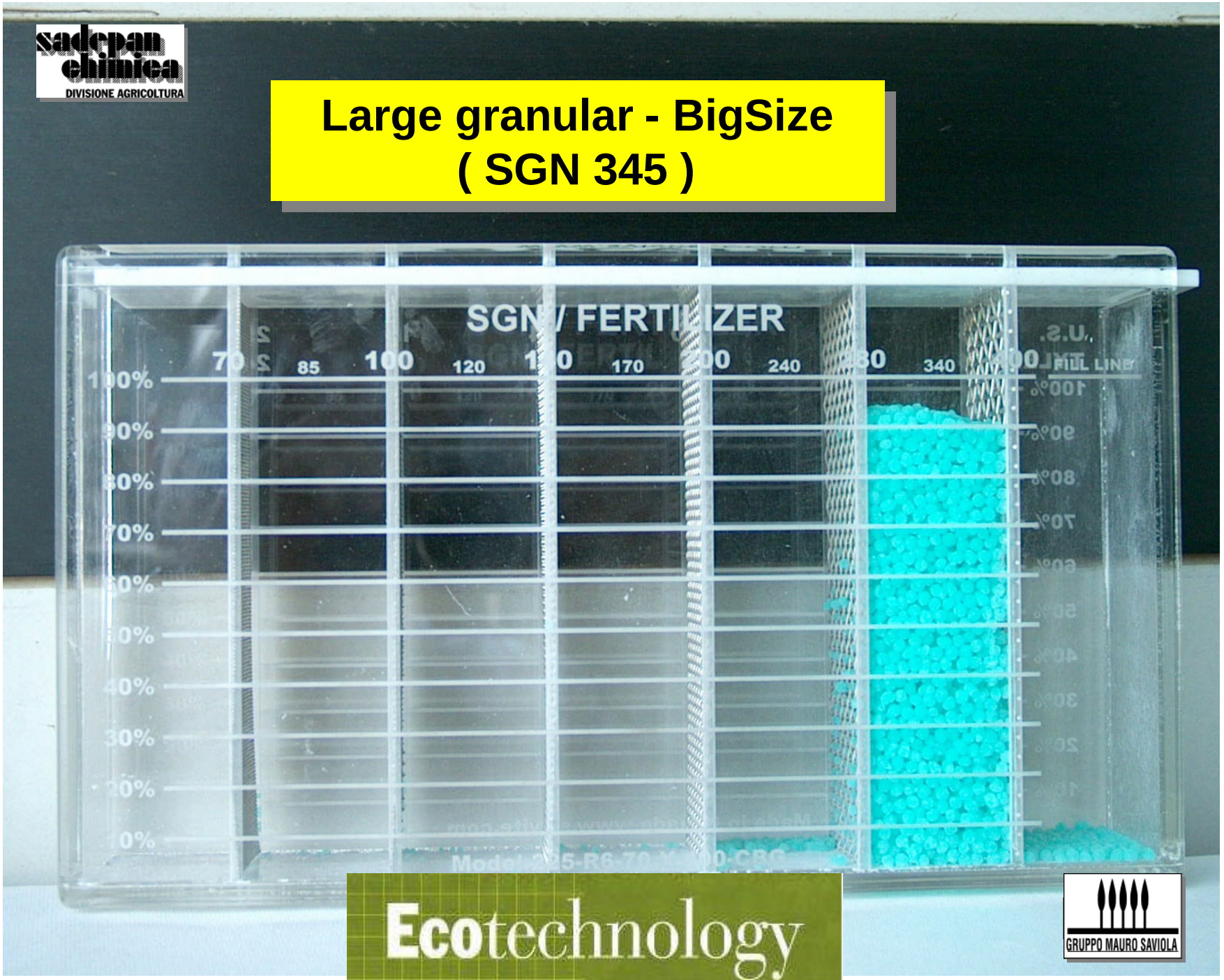
Large granular - BigSize
(SGN 345)



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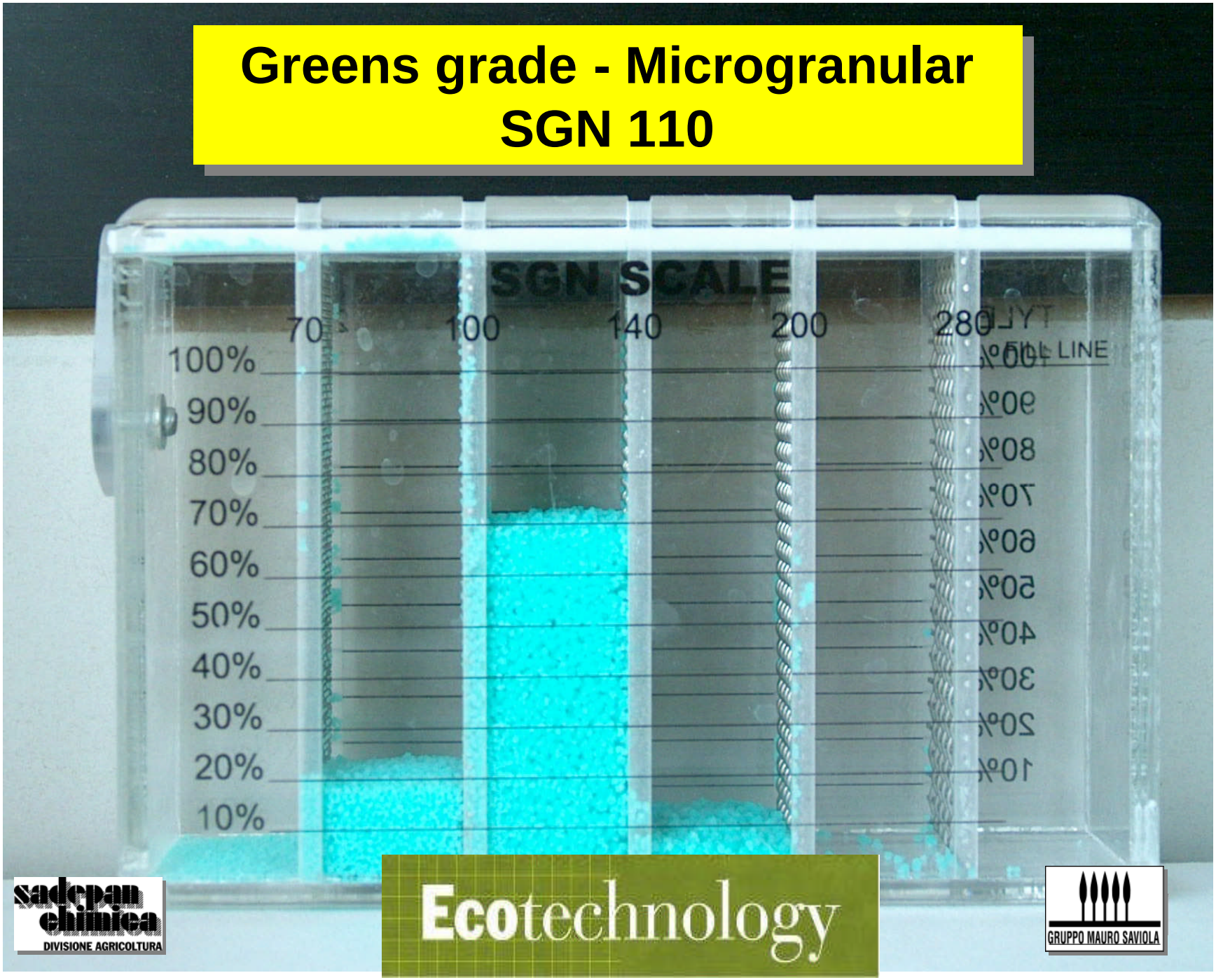
Greens grade - Microgranular
SGN 110



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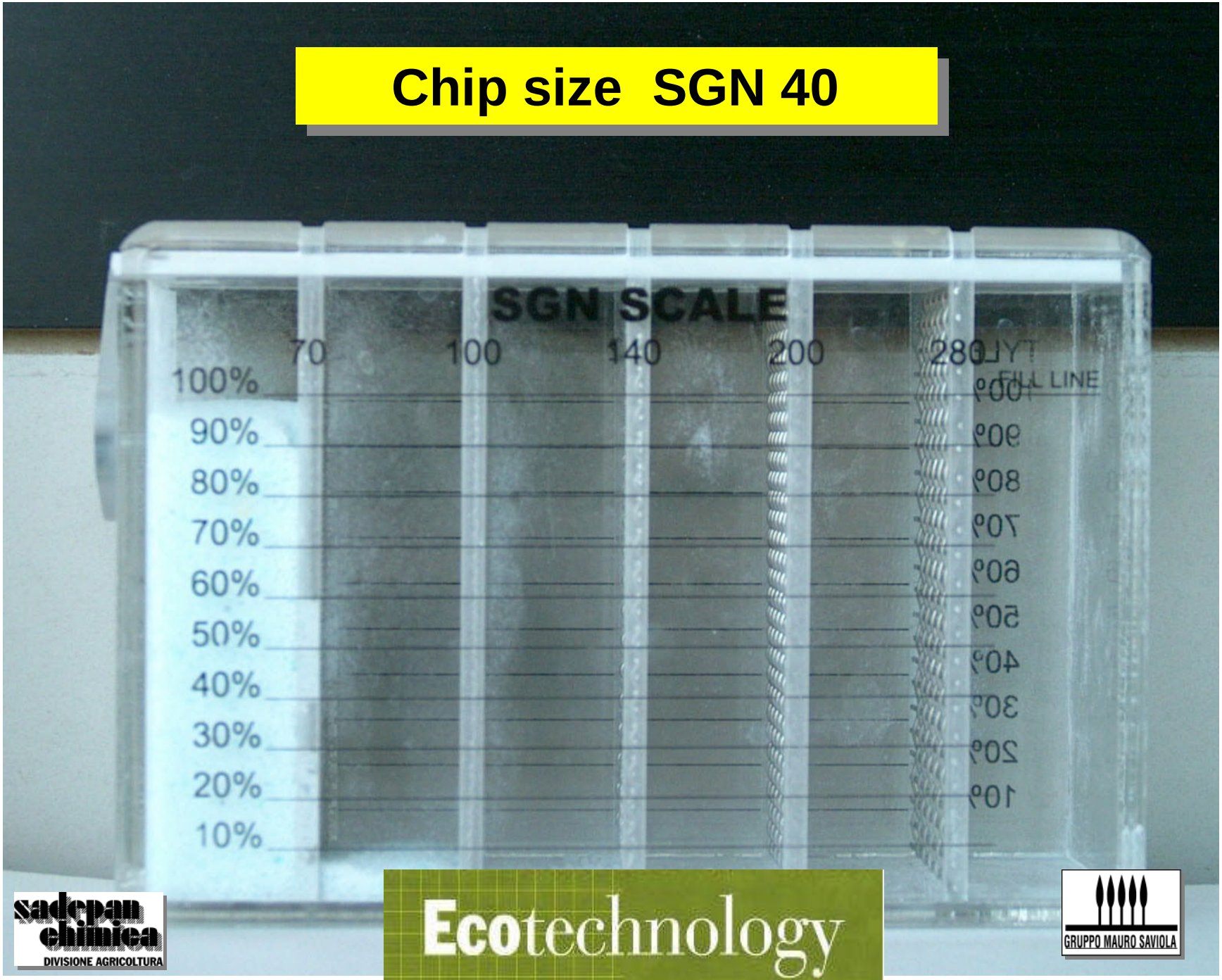
Chip size SGN 40



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Less friction during blending operations with others granular raw materials
Less dust in MU/UF Sadepans during production

INNOVATIVE TECHNICAL ADVANTAGES

- The most completely reacted products

Unreacted **N- urea content ≤ 4.5%**

- The lower Salt Index

Salt index ≤ 1%

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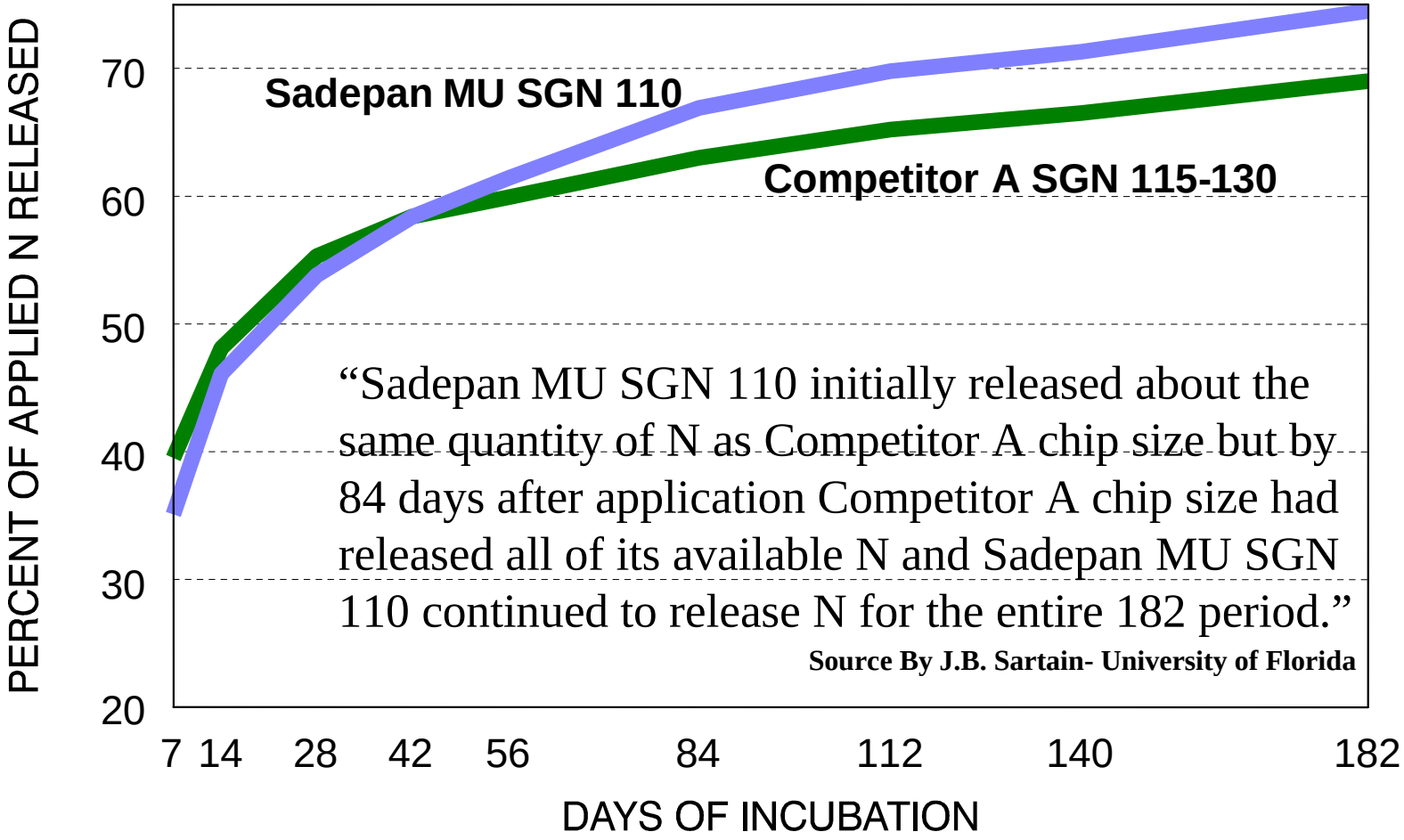
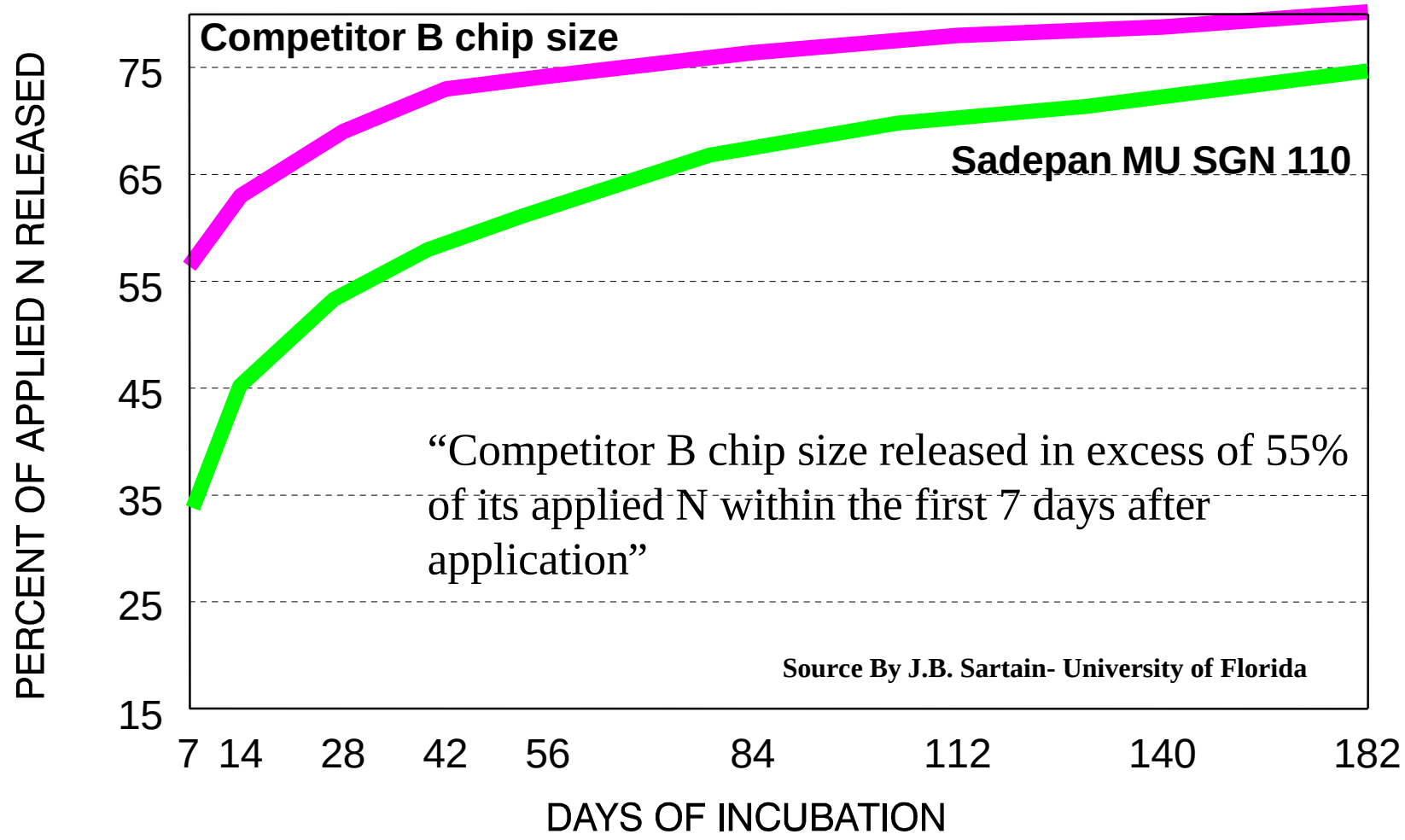
SADEPAN CHIMICA MU greens grade Nitrogen release curve Vs competitors

PERCENTAGE OF APPLIED N RELEASED FROM SELECTED NITROGEN SOURCES



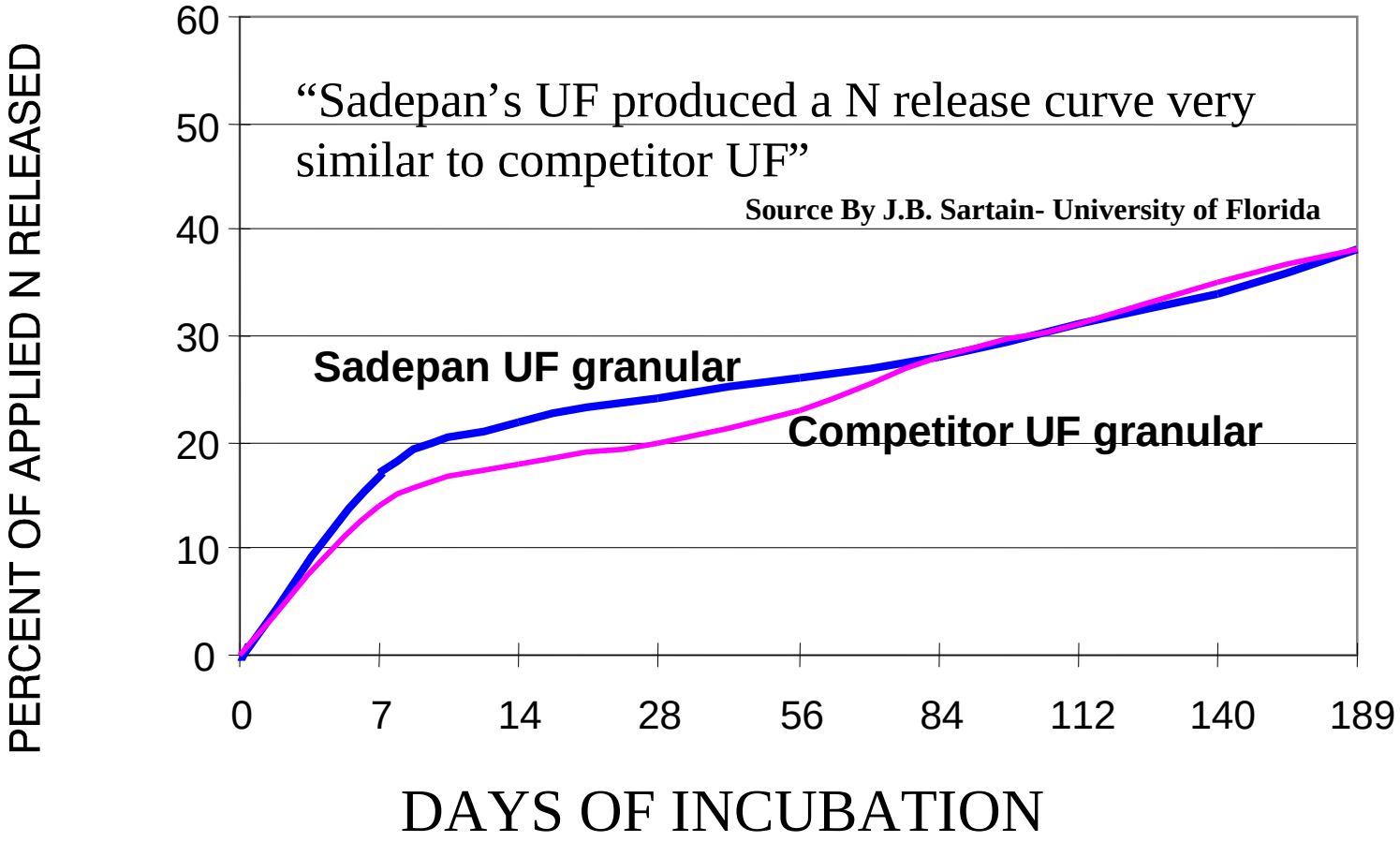
SADEPAN CHIMICA MU greens grade Nitrogen release curve Vs competitors

INFLUENCE OF N SOURCE ON N RELEASED OVER TIME



SADEPAN CHIMICA UF granular size Nitrogen release curve Vs competitors

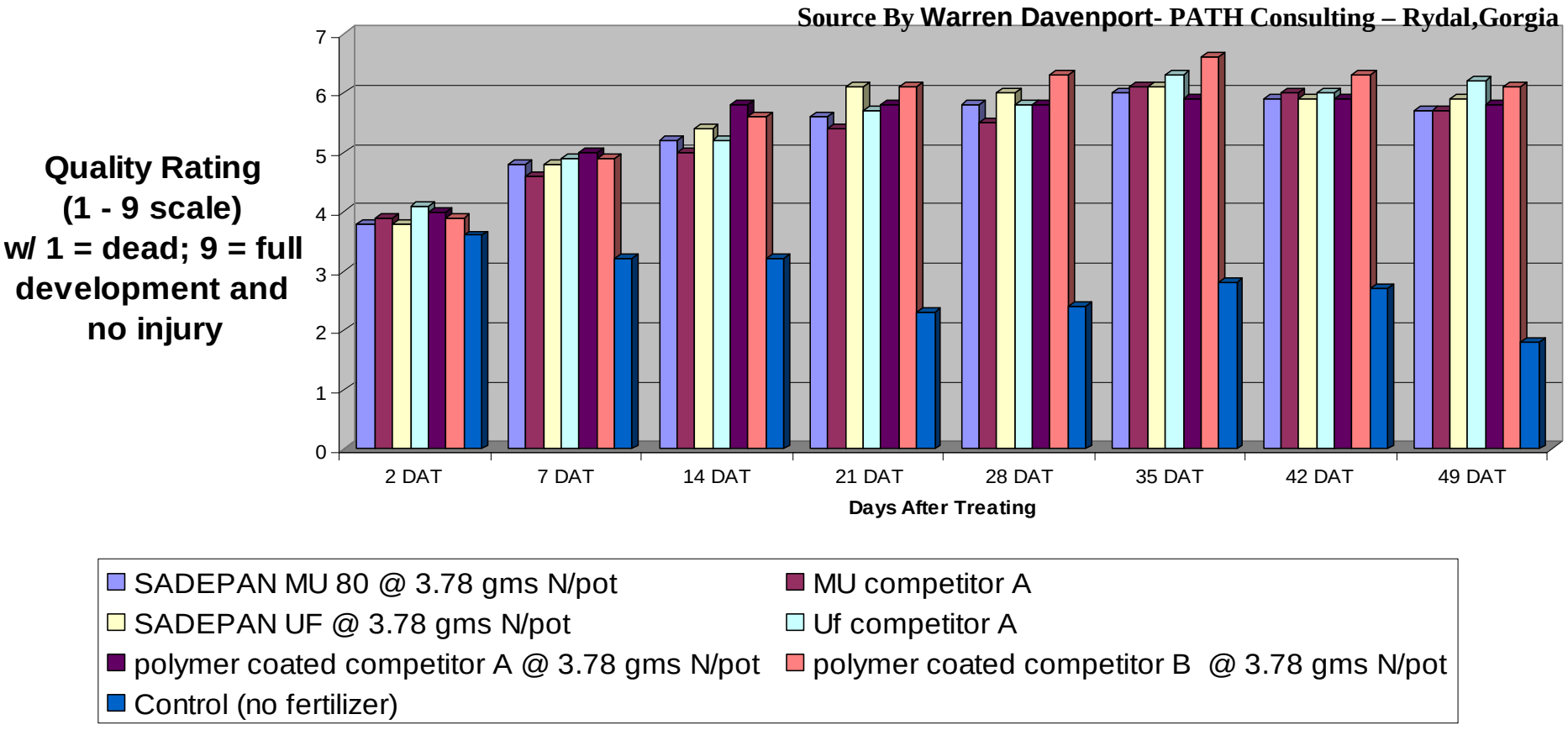
INFLUENCE OF N SOURCE ON N RELEASED OVER TIME



SADEPAN CHIMICA results from greenhouse studies on TOMATOES

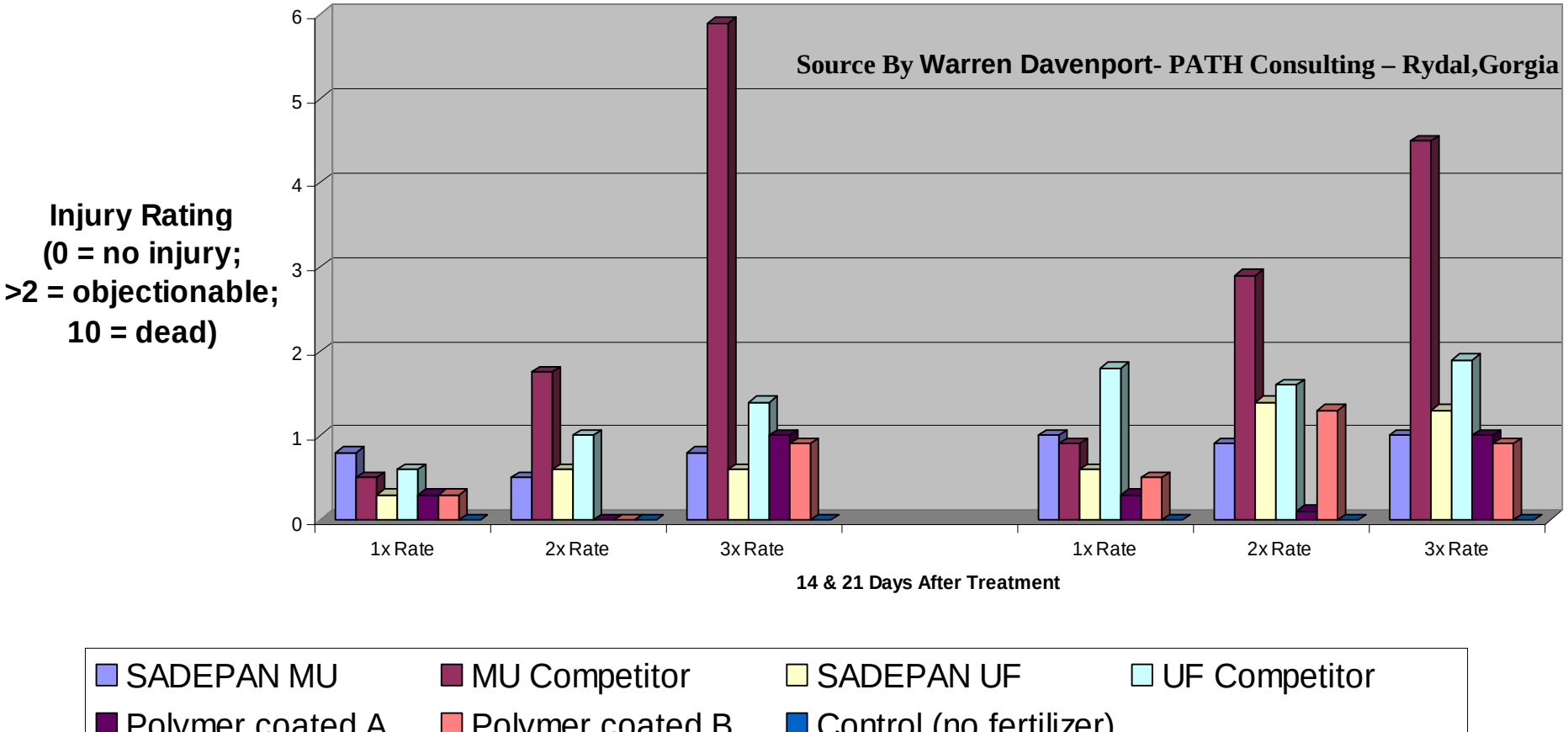
Effects of Various Fertilizers on the Overall Quality of 'Better Boy' Tomatoes

Source By Warren Davenport- PATH Consulting – Rydal,Gorgia



SADEPAN CHIMICA studies from greenhouse conditions on N – SENSITIVE CROP

Effects of Various Fertilizers @ 3 Rates on the Injury of 'Janie' Marigolds



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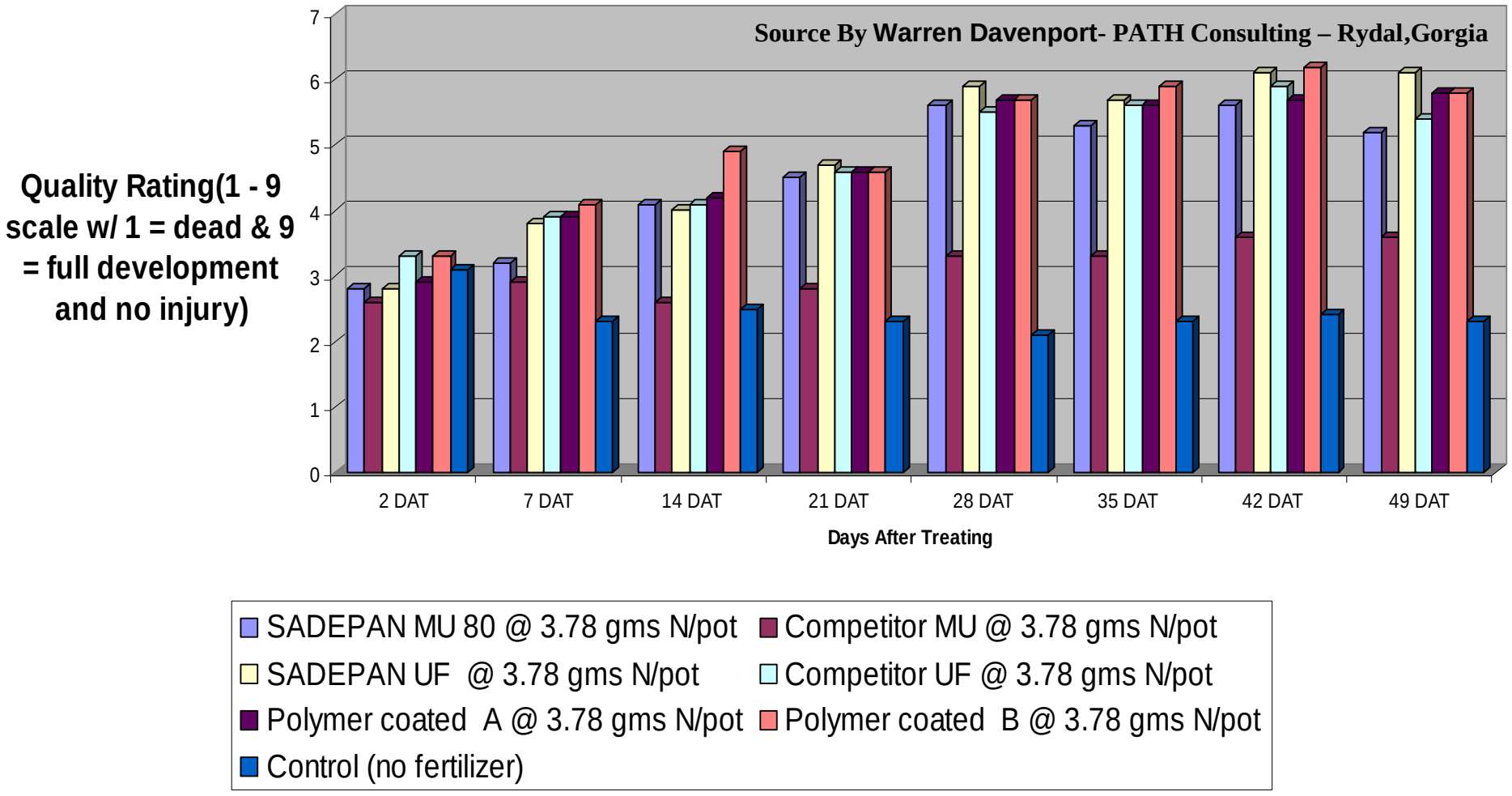
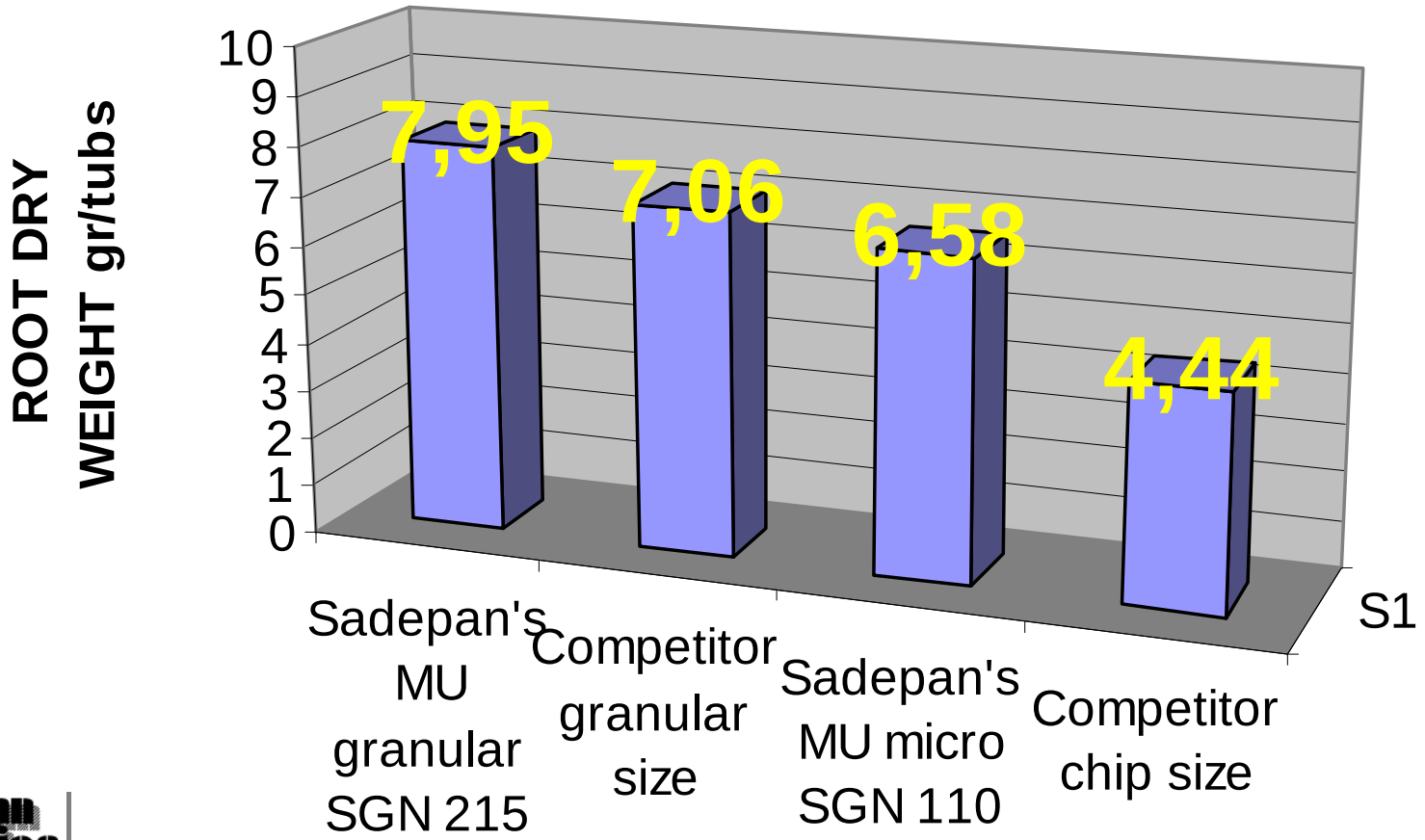
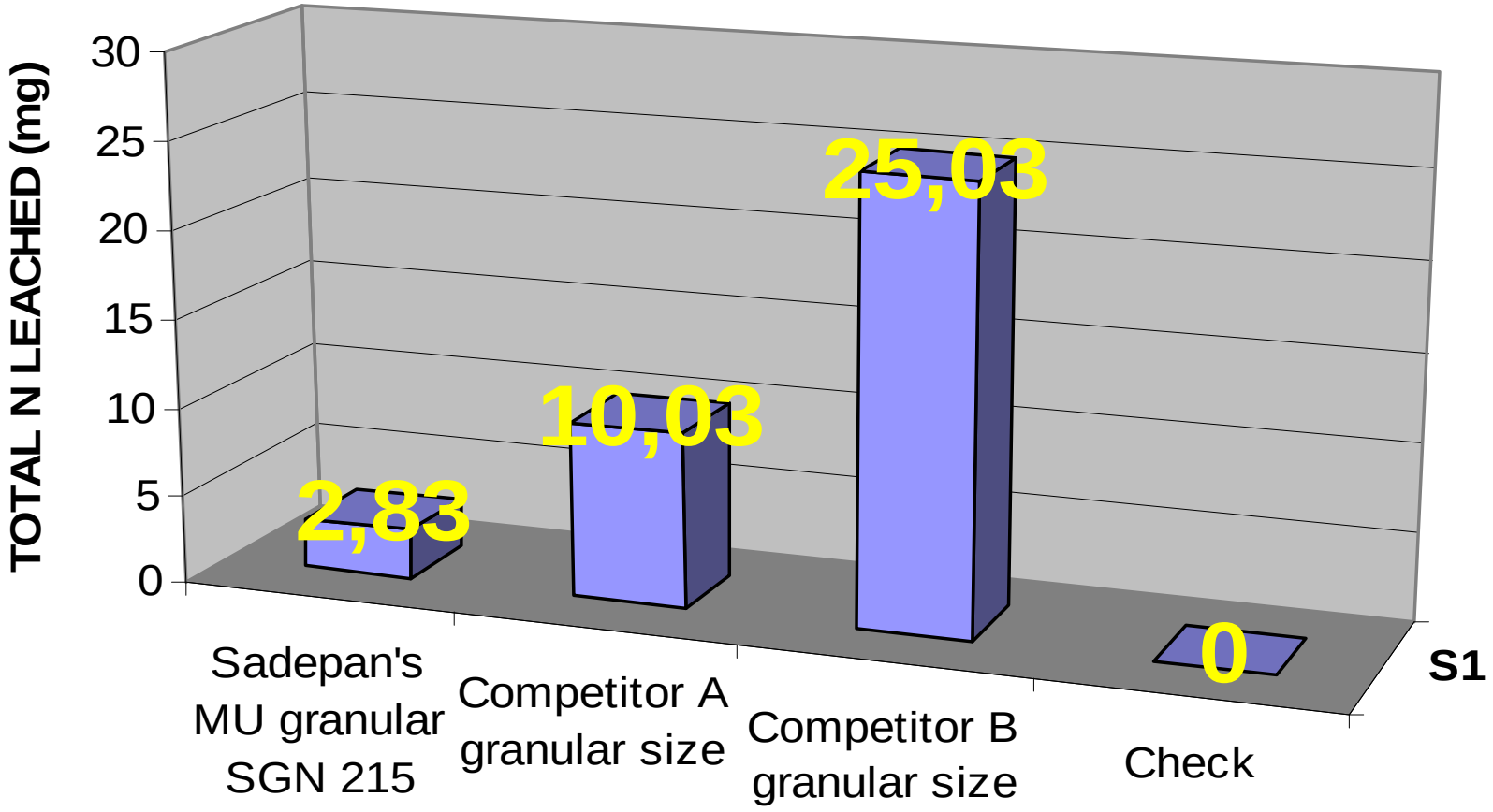


INFLUENCE OF N SOURCE ON ROOT DRY WEIGHT OF BERMUDAGRASS GROWN IN TUBS IN THE GLASSHOUSE



Source By J.B. Sartain- University of Florida

INFLUENCE OF N SOURCE ON TOTAL QUANTITY OF N LEACHED FROM BERMUDAGRASS



NITROGEN SOURCE

Source By J.B. Sartain- University of Florida


Thank you for
your kind
attention