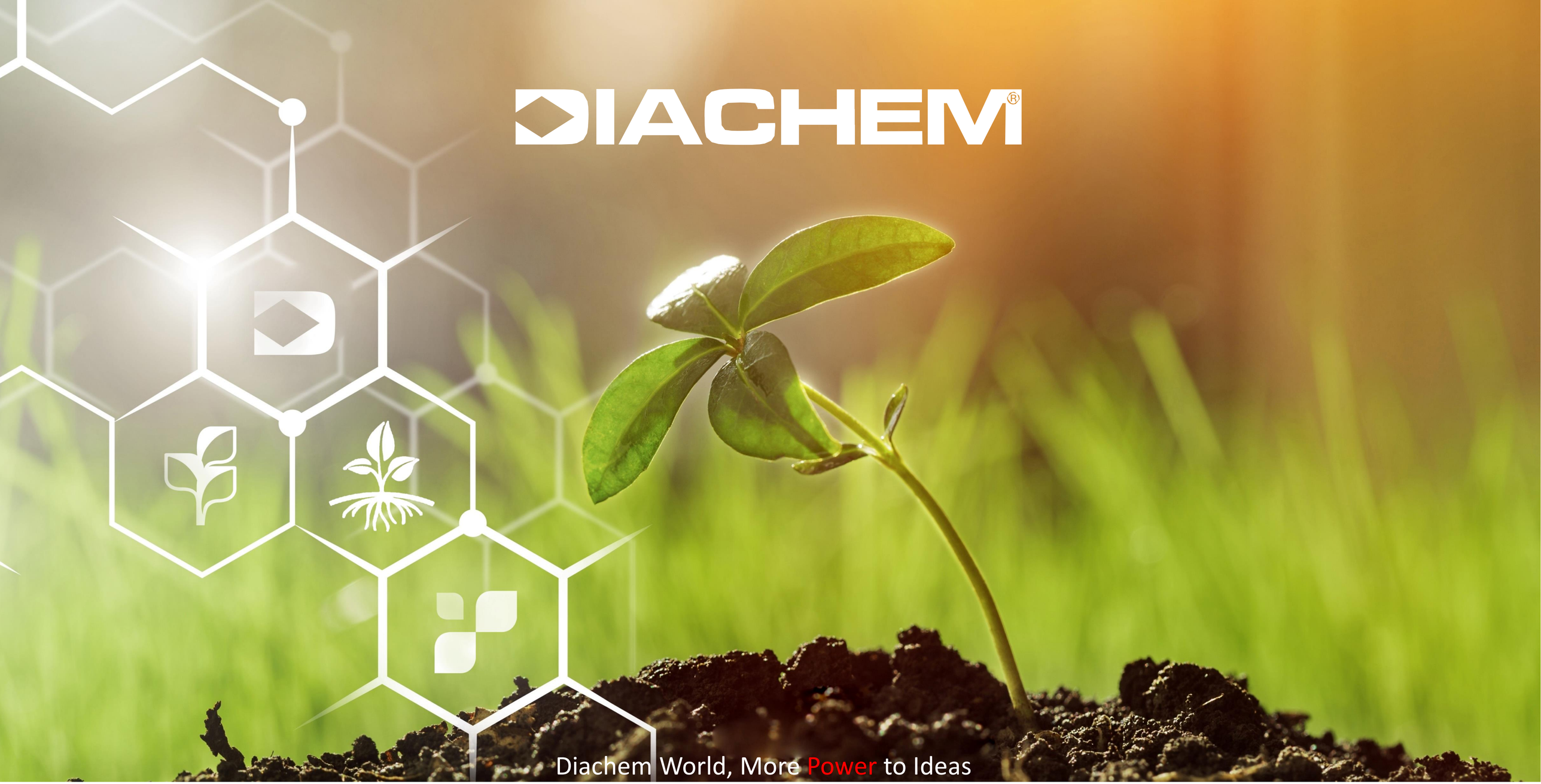

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Mechanism of success

ATONIK: nuovo fitoregolatore per uva da tavola e da vino

Vigna & Olivo 2022, innovazione e sostenibilità: Focus Vite

Domenico Labriola - Field Marketing Specialist Centre-South Est

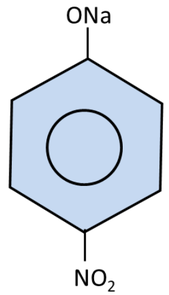
FITOREGOLATORE

CARATTERISTICHE DEL PRODOTTO

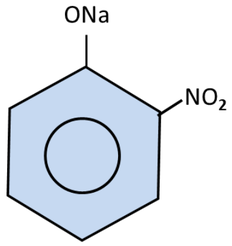
SOSTANZE ATTIVE:

5-nitroguaiacolato di sodio 0,1% (1 g/l)
o-nitrofenolato di sodio 0,2% (2 g/l)
p-nitrofenolato di sodio 0,3% (3 g/l)

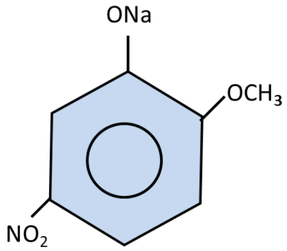
p-NP
p-nitrofenolato di sodio
(0,3%)



o-NP
o-nitrofenolato di sodio
(0,2%)



5NG
5-nitroguaiacolato di sodio
(0,1%)



COMPOSIZIONE: nitrofenoli (NP) e nitroguaiacolato (NG) di Na 0,6% (6 g/l)

FORMULAZIONE: concentrato solubile (SL)

ATONIK

PRODOTTO A BASE DI 3 NITROFENOLI

S.A. REGISTRATE NEL 2009 come PPP (Allegato I, Direttiva 2009/11/EC)

FITOREGOLATORE

REG. MIN. SALUTE
n. 17411 del 11/02/2020

Diachem World, More Power to Ideas

ATONIK: MECCANISMO D'AZIONE

ATONIK SI CARATTERIZZA PER UN MECCANISMO D'AZIONE MULTIPLO:

frontiers in
PLANT SCIENCE

ORIGINAL RESEARCH ARTICLE
published: 16 December 2014
doi: 10.3389/fpls.2014.00713

Biological mode of action of a nitrophenolates-based biostimulant: case study

Arkadiusz Przybysz[1]*, Helena Gawrońska[1] and Janina Gajc-Wolska[2]

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The challenges facing modern plant production involve (i) responding to the demand for food and resources of plant origin from the world's rapidly growing population, (ii) coping with the negative impact of stressful conditions mainly due to anthropopressure, and (iii) meeting consumers' new requirements and preferences for food that is high in nutritive value, natural, and free from harmful chemical additives. Despite employing the most modern plant cultivation technologies and the progress that has been made in breeding programs, the genetically-determined crop potential is still far from being fully exploited. Consequently yield and quality are often reduced, making production less, both profitable and attractive. There is an increasing desire to reduce the chemical input in agriculture and there has been a change toward integrated plant management and sustainable, environmentally-friendly systems. Biostimulants are a category of relatively new products of diverse formulations that positively affect a plant's vital processes and whose impact is usually more evident under stressful conditions. In this paper, information is provided on the mode of action of a nitrophenolates-based biostimulant, Atonik, in model species and economically important crops grown under both field and controlled conditions in a growth chamber. The effects of Atonik on plant morphology, physiology, biochemistry (crops and model plant) and yield and yield parameters (crops) is demonstrated. Effects of other biostimulants on studied in this work processes/parameters are also presented in discussion.

CONCLUSIONS

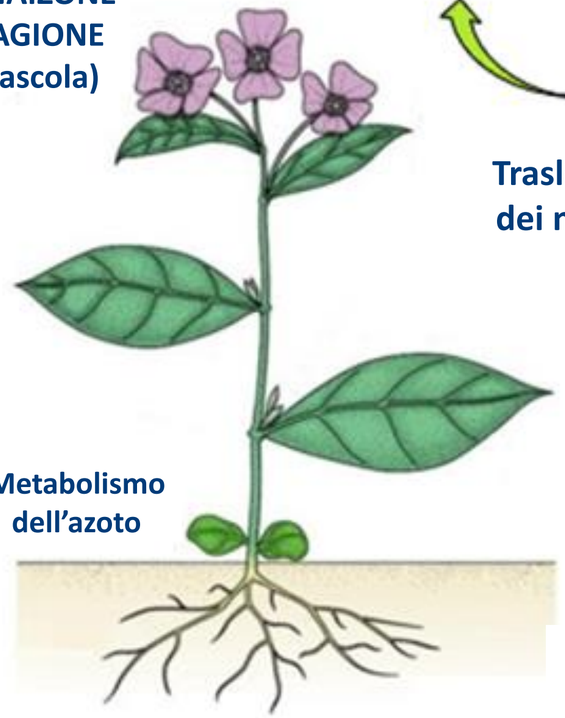
The biostimulant Atonik affects every level of a plant's biological organization in terms of structure and function, from canopy and whole plant, *via* particular organs and cells, to physiological and biochemical processes.

(1) Atonik stimulates plant growth and development, particularly generative.
(2) Biomass accumulation, both fresh weight and dry matter, and yield production are stimulated by Atonik due to a higher efficiency of the photosynthetic apparatus manifested by (i) a higher leaf area, (ii) a higher chlorophyll content, (iii) greater intensity of photosynthesis, and (iv) an improvement of chlorophyll *a* fluorescence parameters.
(3) Despite higher transpiration and lower stomatal resistance, RWC was unchanged in Atonik-treated plants due to the promotion of root development and consequently an increased water uptake.
(4) The effect of Atonik on the quality and chemical composition of fruits was diverse and depended on the parameter measured and cultivar examined.

ATONIK: MECCANISMO D'AZIONE

MECCANISMO D'AZIONE MULTIPLO

- *INCREMENTO DELLA PRODUZIONE DI AUXINE NATURALI E DEL N. DEI RECETTORI*
- *STABILITÀ DELLE AUXINE PROLUNGATA (inibizione dell'ossidazione) & MAGGIOR ATTIVITÀ DI ACCUMULO TESSUTI*



5NG e NP

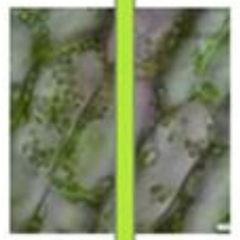
Miglior IMPOLLINAIZONE e ALLEGAGIONE (minor cascola)

Germinazione del polline e maggior sviluppo di stigma e tubo pollinico

Incremento della sintesi di lignine a livello di parete cellulare*

Traslocazione dei nutrienti

Fosforilazione (ATP)



STREAMING CITOPLASMATICO

MAGGIOR TRASPORTO DI ELEMENTI NUTRITIVI ALL'INTERNO DELLE CELLULE VEGETALI +15%

FAVORISCE INGROSSAMENTO E SPESSORE DEL PERICARPO DEI FRUTTI

Clorofilla e zuccheri

Assorbimento dei nutrienti

Metabolismo dell'azoto

NO_3 reduttasi

*(Manitto 1981, Stutte 1990, Haga et al. 1990)

ATONIK

FITOREGOLATORE

Reg. Min. Salute n. 17411 del 11/02/2020

CLASSIFICAZIONE CLP: EUH401

BUFFER ZONE: NON PREVISTE

RESIDUI: SOTTO AI LIMITI DI QUANTIFICAZIONE (LOQ)

II. RESULTS AND DISCUSSION

Residues of Na 5-NG in tomatoes at harvest were below the limit of quantification (LOQ = 0.01 mg/kg).

Residues of Na *o*-NP in tomatoes at harvest were below the limit of quantification (LOQ = 0.01 mg/kg).

Residues of Na *p*-NP in tomatoes at harvest were below the limit of quantification (LOQ = 0.01 mg/kg).

Table 6.3.5-1 Residue levels of Sodium 5-Nitroguaiacolate (Na 5-NG) in tomatoes in Northern Europe

Matrix	Residue levels at harvest [mg/kg], PHI 3 days
Tomatoes	< 0.01 (2)

Limit of quantification (LOQ) Sodium 5-Nitroguaiacolate: 0.01 mg/kg in tomatoes

INNOVATIVO FITOREGOLATORE REGISTRATO (Data Protection in EU) a **BASE DI NITROFENOLI** (p-NP, o-NP) e **NITROGUAIACOLATO** (5NG)

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REASONED OPINION

EFSA Journal

ADOPTED: 6 November 2020

doi: 10.2903/j.efsa.2020.6313

Modification of the existing maximum residue levels for sodium 5-nitroguaiacolate, sodium *o*-nitrophenolate and sodium *p*-nitrophenolate (sodium nitrocompounds)

European Food Safety Authority (EFSA),
Maria Anastassiadou, Giovanni Bernasconi, Alba Brancato, Luis Carrasco Cabrera, Lucien Ferreira, Luna Greco, Samira Jarrah, Aija Kazocina, Renata Leuschner, Jose Oriol Magrans, Ileana Miron, Stefanie Nave, Ragnor Pedersen, Hermine Reich, Alejandro Rojas, Angela Sacchi, Miguel Santos, Alessia Pia Scarlato, Anne Theobald, Benedicte Vagenende and Alessia Verani

Abstract

In accordance with Article 6 of Regulation (EC) No 396/2005, the applicant Asahi Chemical Europe s.r.o. submitted a request to the competent national authority in Greece to modify the existing maximum residue levels (MRLs) for the active substances sodium 5-nitroguaiacolate (Na 5-NG), sodium o-nitrophenolate (Na *o*-NP) and sodium p-nitrophenolate (Na *p*-NP) in table olives and olives for oil production in support of the intended SEU use. The data submitted in support of this MRL application were sufficient to derive an MRL of 0.12 mg/kg (at the combined limit of quantification (LOQ) of the three sodium nitrocompounds as validated in the framework of the residue trials). This higher MRL does not reflect residues in olives from the intended use but refers to occurrence of p-nitrophenolate (*p*-NP) from unidentified source. As *p*-NP was present in all untreated olive samples regardless of the country of origin and the year of the treatment, in some cases at levels above the enforcement LOQ of 0.01 mg/kg, the applicant analysed residue trial samples using a method with a higher validated LOQ of 0.1 mg/kg for Na *p*-NP. The competent authorities shall be aware that residues of *p*-NP at levels < 0.1 mg/kg in olives are not related to the use of sodium nitrocompounds on the crop but to other sources of unknown origin. The current analytical methods for enforcement control residues of sodium nitrocompounds in high oil content matrices at the validated LOQ of 0.01 mg/kg per substance (combined LOQ of 0.03 mg/kg). Based on the risk assessment results, EFSA concluded that the short-term and long-term intake of residues resulting from the use of sodium nitrocompounds according to the reported agricultural practice and occurrence of *p*-NP from unidentified source is unlikely to present a risk to consumer health.

ATONIK

SETTORI DI IMPIEGO




MoA e TARGET: *MECCANISMO D'AZIONE MULTIPLO* stimolo della fisiologia della pianta e del radicamento; riduzione della cascola dei fiori, miglior impollinazione e allegagione; anticipo di raccolta; migliori parametri quali-quantitativi

COLTURE AUTORIZZATE: POMODORO e MELANZANA (campo e serra)
PEPERONE, CETRIOLO e ZUCCHINO (serra)
RISO e **VITE (da vino e da tavola)**

DOSE DI IMPIEGO: ORTICOLE (1 l/ha); **VITE (0,5-0,75 l/ha);** RISO (0,5 l/ha)

N. MAX TRATTAMENTI: 4 orticole (5 peperone), **4 vite**, 1 riso

BREVE INTERVALLO DI SICUREZZA: 3 gg su colture orticole

COMPATIBILITÀ: Compatibile con altri PPP

CONFEZIONE: Flacone da 1 litro (cartone 12 pz)

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PROVE DI CAMPO 2021

VITE DA TAVOLA (cv Italia)

Centro di saggio: **AGRIMECA**

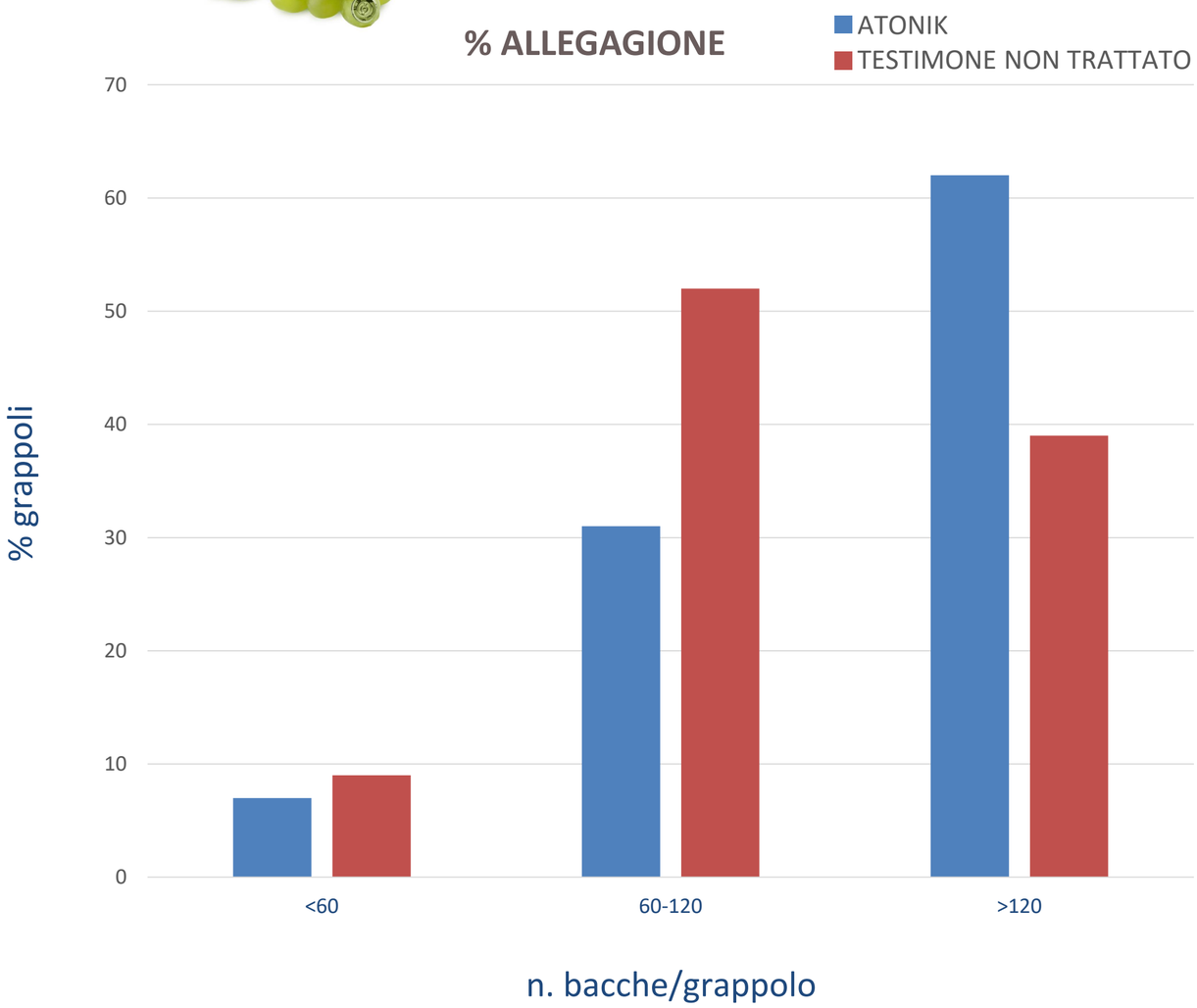
Località: Casamassima (BA)

A = Pre-fioritura
B = Fioritura
C = Post-fioritura
D = Allegagione

PROTOCOLLO DELLA PROVA

TESI	s.a.	DOSE (l/ha)	TIMING DI APPLICAZIONE
TESTIMONE NON TRATTATO	-	-	-
ATONIK	nitrofenolati	0,75 l/ha	ABCD

RISULTATI



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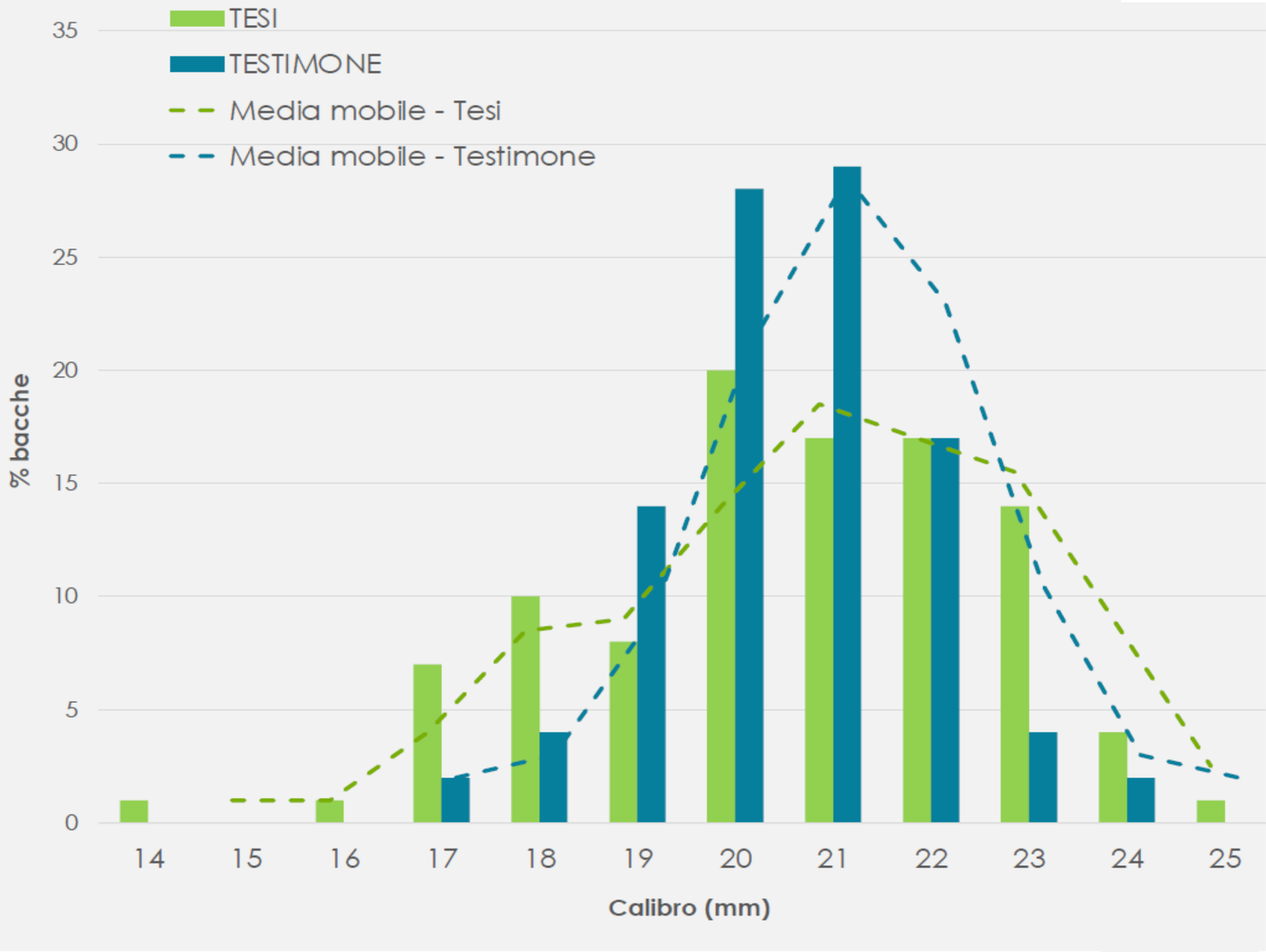
RISULTATI

Calibro

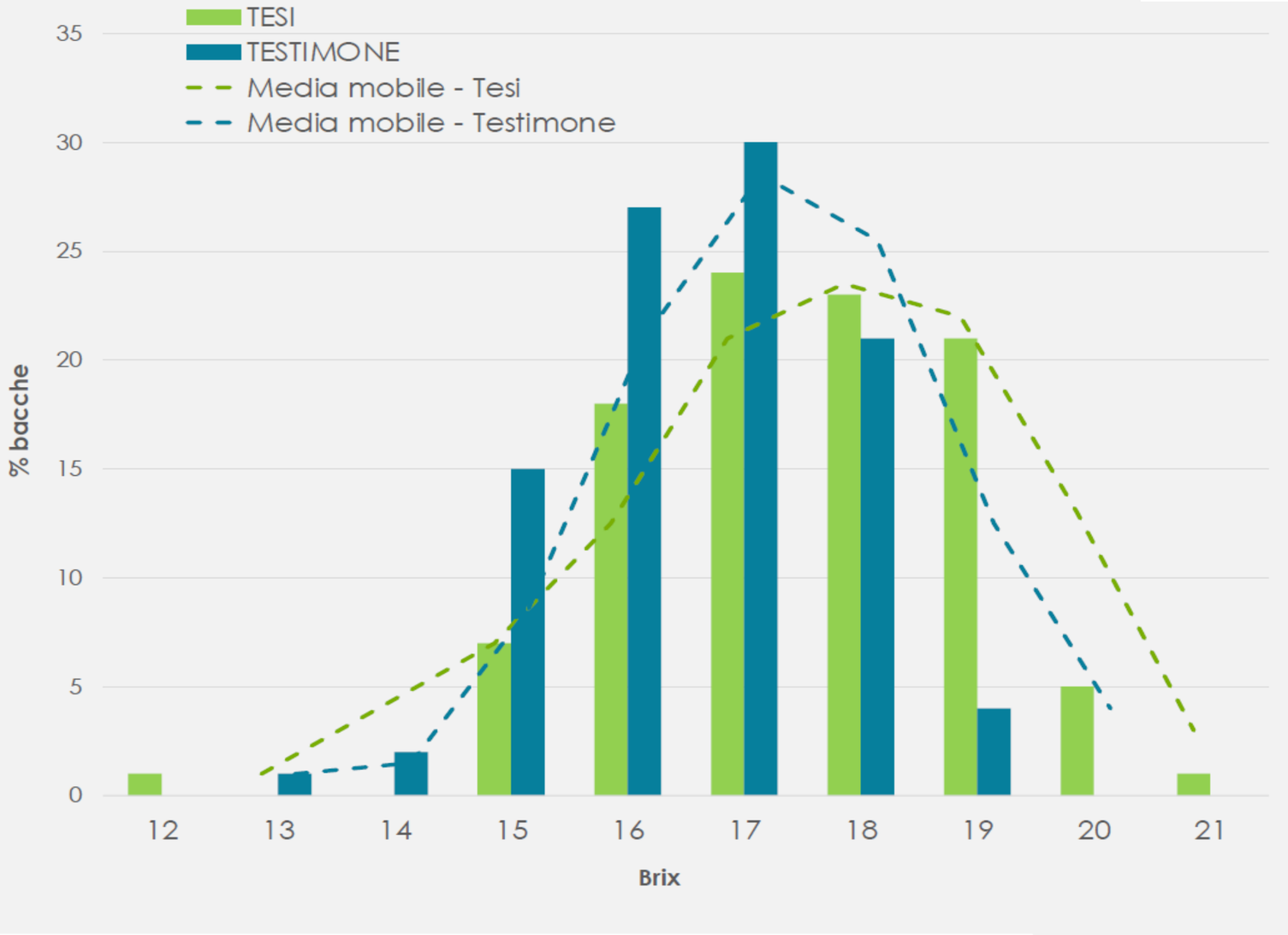
CALIBRO (mm)	% di bacche	
	TESI	TESTIMONE
14	1	
15		
16	1	
17	7	2
18	10	4
19	8	14
20	20	28
21	17	29
22	17	17
23	14	4
24	4	2
25	1	
Media aritmetica (mm)	20,55	20,55



RISULTATI

Brix

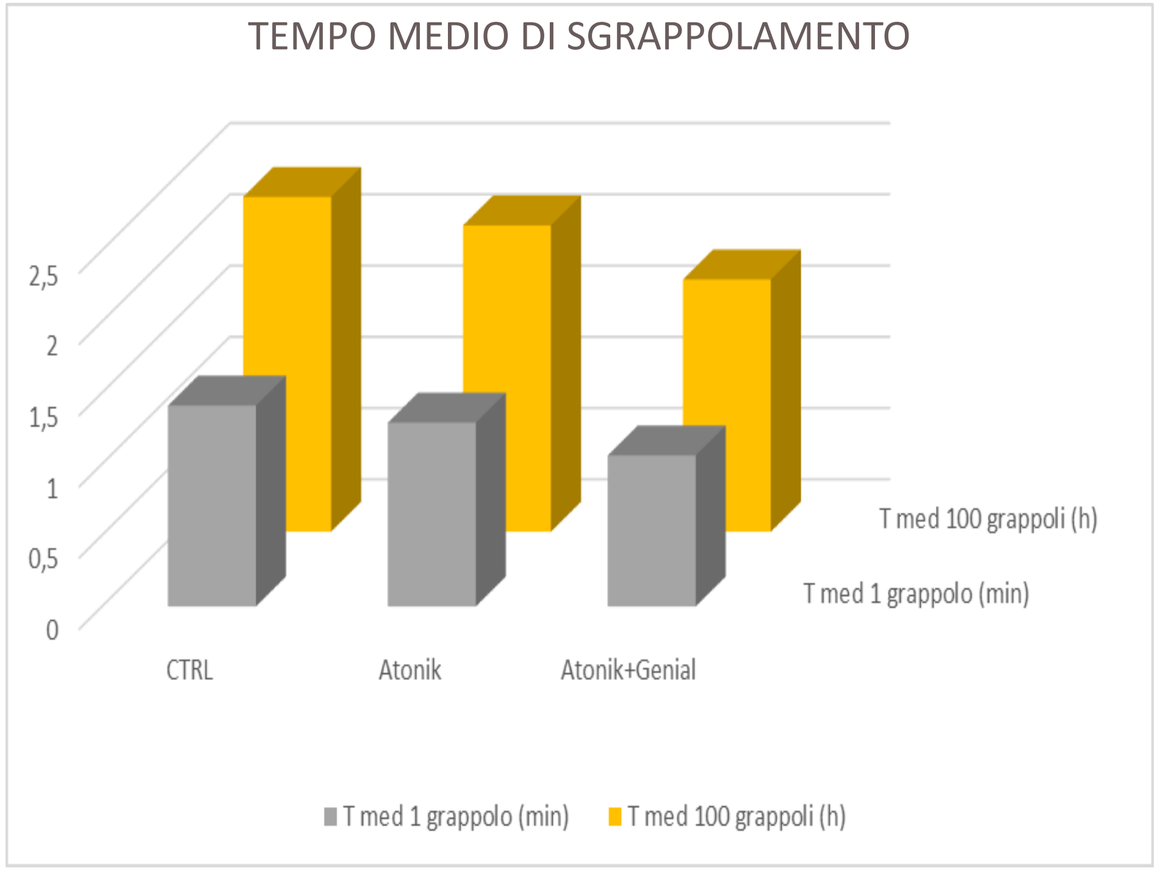
°Bx	% di bacche	
	TESI	TESTIMONE
12	1	
13		1
14		2
15	7	15
16	18	27
17	24	30
18	23	21
19	21	4
20	5	
21	1	
Media aritmetica (°Bx)	17,962	17,025



PROVE DI CAMPO 2021

UVA DA TAVOLA – cv Vittoria

Località: VITTORIA (RG)



TESI	TEMPO MEDIO/GRAPPOLO (min)	TEMPO MEDIO PER 100 GRAPPOLI (h)
TESTIMONE NON TRATTATO	1,41	2h 21’
ATONIK	1,29	2h 09’
ATONIK + GENIAL SL	1,06	1h 46’

ATONIK + GENIAL SL:

- **MENO ACINELLATURA**
- **MENO COSTI**

Tempo medio per potatura grappolo (sgrappolamento) calcolato su 100 grappoli x parcella

PROVE DI CAMPO 2021

AGROSERVICE
ricerca e sperimentazione

UVA DA TAVOLA (cv Vittoria)

Centro di saggio: **Agroservice**

Località: Trinitapoli (BA)

ATONIK

PROTOCOLLO DELLA PROVA

TESI	s.a.	Dose (l/ha)	TIMING	VOLUME D'ACQUA
TESTIMONE NON TRATTATO	-	-	-	-
ATONIK PENTAC-5 ALA PENTACALCIUM	nitrofenolati NPK, B, Mo + ALA Ca, Mg + ALA	0,75 l/ha 1,25 l/ha 1 l/ha	ABCD EF GH	1000 l/ha

RISULTATI

24/06/2021		
TESI	**CLASSE DEGLI ACINI 1-2**	**OPERAZIONI MANUALI (gg/ha)**
TESTIMONE NON TRATTATO	29,80%	**45,75**
ATONIK + ALA	26,83%	**42,97**

31/07/2021					
TESI	**C1 (<5 mm)**	**C2 (6-10 mm)**	**C3 (11-15 mm)**	**C4 (>15 mm)**	**Lunghezza del grappolo (mm)**
TESTIMONE NON TRATTATO	0	1	11,25	87,75	**268,5**
ATONIK + ALA	0	4,5	3,75	91,75	**292,4**

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FIELD-MARKETING

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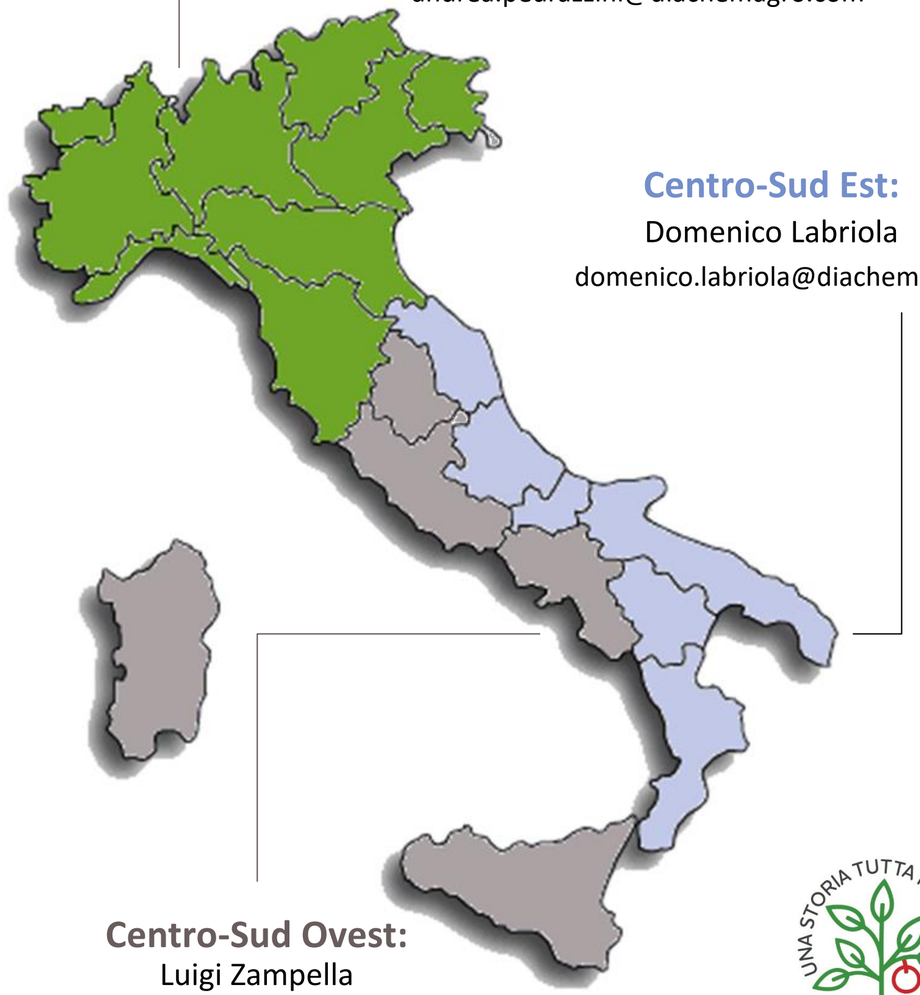

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UNA STORIA TUTTA ITALIANA
Dal 1957. Altro che favole

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GRAZIE
PER LA CORTESE ATTENZIONE

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