WINE GRAPES

Evaluation of the co-formulant activity

ILSA TEC

PLACE

Test location:	AGREA srl Test Centre, San Giovanni Lupatoto (VR)
Person in charge:	AGREA srl
Number of thesis:	6
Type of cultivation:	Pot
Technique of distribution:	Foliar application
Period:	21/01/2021 – 20/04/2021
Variety:	Corvinone
Tested products:	SPLINTER NEW

QUALITY APPROVATO CONTROL

OBJECTIVE

To evaluate the carrier, adhesive and wetting effects of the co-formulant Splinter New.

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RESULTS ACHIEVED

Splinter New is a product with a specific action that, according to Italian regulations (Legislative Decree 75/2010, Annex 6.2.3) is registered as a co-formulant, since, when added to other products, it increases their efficacy.
For this reason, in cooperation with the AGREA S.r.l. Test Centre, a triple field trial was carried out on grapevine shoots, to evaluate the multi-activity of Splinter New.
In addition to having a nutritional and biostimulating effect, due to the organic nitrogen and amino acid content (in the form of free amino acids and peptides), Splinter New has been confirmed to have strong carrier, adhesive and wetting effects, which improve plant uptake, not only of the same co-formulant but also of the products mixed with it.
The results show that Splinter New has an evident effect, even at a minimum dosage of 200 grams per 100 litres of water. The results obtained in the field trial , mixed with iron and copper salts, where washout conditions were also simulated, indicate better treatment efficacy, even if this occurs just before rain. In addition to this, due to recent regulatory reductions in the amount of copper to be applied per hectare in organic farming, Splinter New provides a greater guarantee of the uptake efficacy and, therefore, of treatment.

TEST PROTOCOL 1: CARRIER ACTIVITY

STAGE	ILSA thesis 01	ILSA thesis 02	Company thesis	Untreated
Extended leaves	**Splinter New: 200 g/100 l +** Iron sulphate: 400 g/100 l	**Splinter New: 300 g/100 l +** Iron sulphate: 400 g/100 l	Iron sulphate: 400 g/100 l	/

The evaluation for carrier activity was carried out two days after foliar application using iron sulphate as a tracer, with subsequent laboratory analyses of the iron content, after removing the iron deposited on the surface. Sampling and analysis carried out on 10 leaves discs of 28.3 cm^2 per thesis.

TEST 1 RESULTS: CARRIER ACTIVITY

STAGE	ILSA thesis 01	ILSA thesis 02	Company thesis	Untreated
Foliar iron content (ppm)	**450.1**	**451.2**	391.3	103.5

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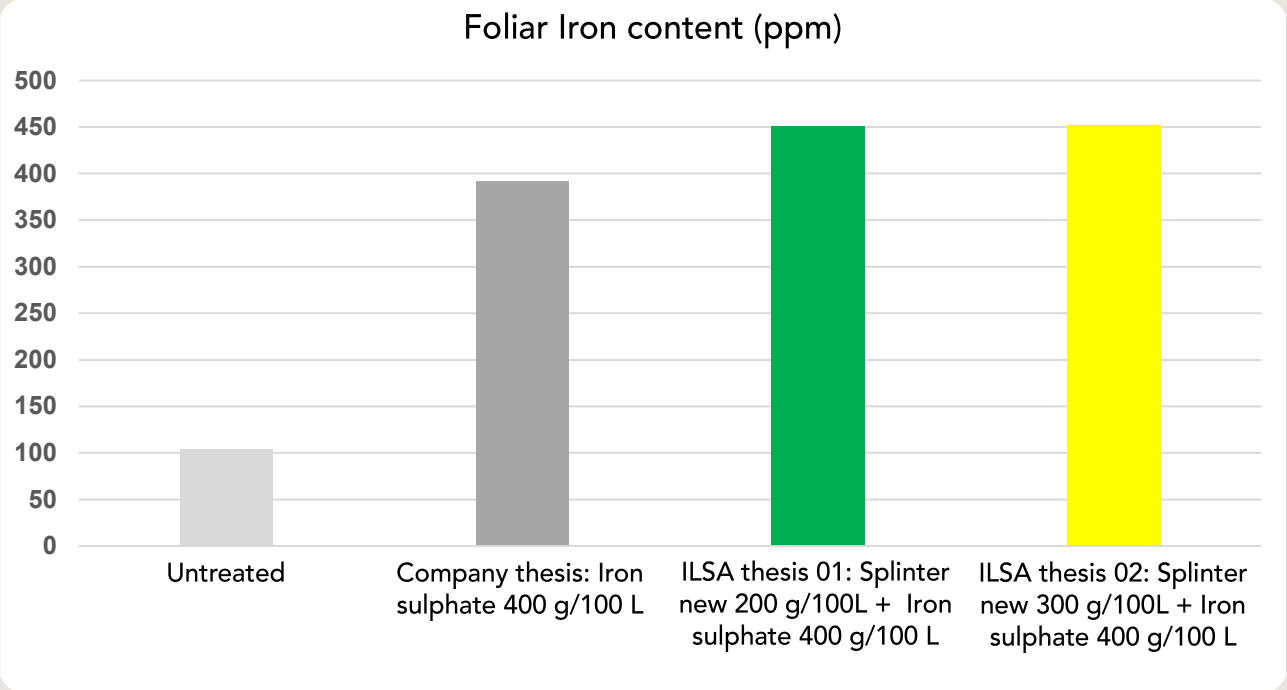

TEST PROTOCOL 2: ADHESIVE ACTIVITY

STAGE	ILSA thesis 01	ILSA thesis 02	Company thesis
Extended leaves (Washout volume: 20 mm of water)	**Splinter New: 200 g/100 l** + Bordeaux mixture: 200 g/100 l	**Splinter New: 300 g/100 l** + Bordeaux mixture: 200 g/100 l	Bordeaux mixture: 200 g/100 l

STAGE	ILSA thesis 01	ILSA thesis 02	Company thesis
Extended leaves (Washout volume: 40 mm of water)	**Splinter New: 200 g/100 l** + Bordeaux mixture: 200 g/100 l	**Splinter New: 300 g/100 l** + Bordeaux mixture: 200 g/100 l	Bordeaux mixture: 200 g/100 l

The evaluation for adhesive activity was carried out using copper salts (Bordeaux Mixture) as a tracer, with subsequent laboratory analyses of the copper content, before and after washout, two days after application. In fact, conditions of subsequent washout caused by medium (20 mm) and high (40 mm) rainfall were also simulated. Sampling and analysis carried out on 10 leaf discs of 28.3 cm^2 per sample.

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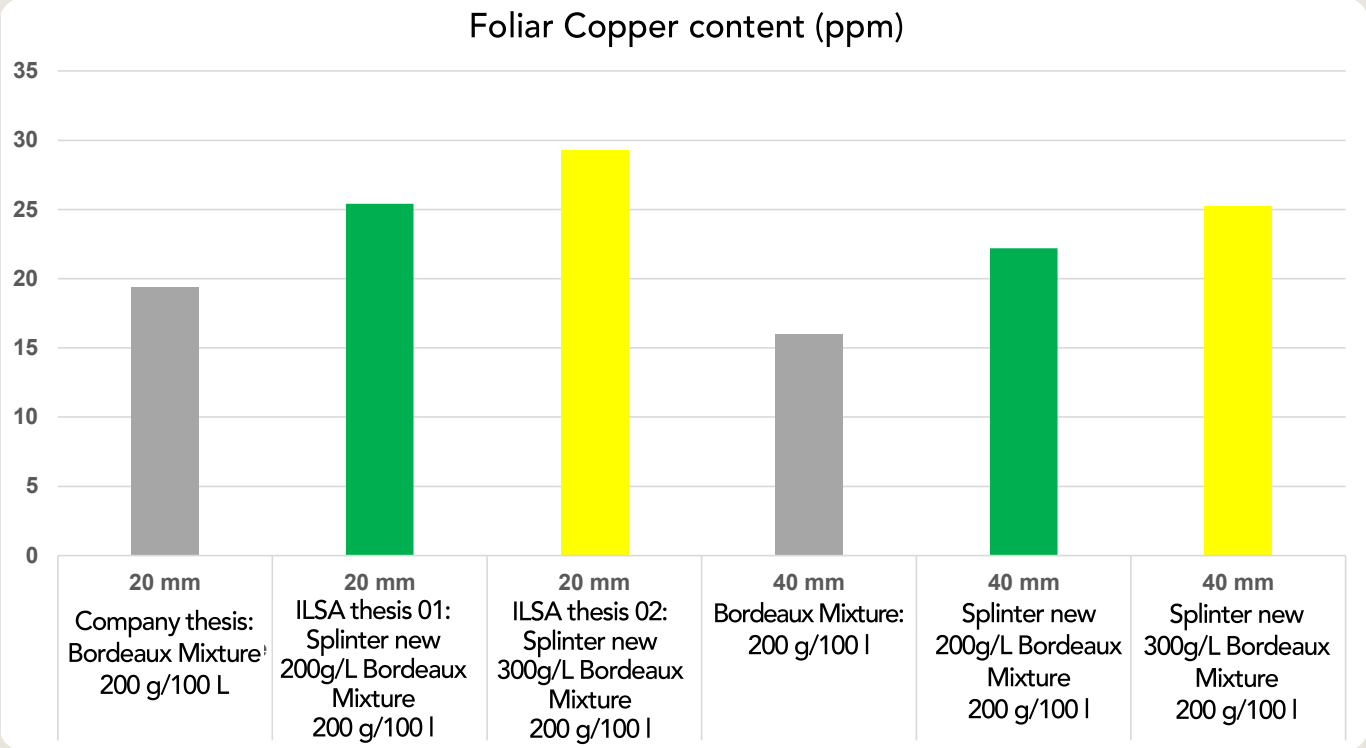
TEST 2 RESULTS: ADHESIVE ACTIVITY

Washout volume: 20 mm of water	ILSA thesis 01	ILSA thesis 02	Company thesis
Foliar copper content (ppm)	**25.4**	**29.3**	19.4

Washout volume: 40 mm of water	ILSA thesis 01	ILSA thesis 02	Company thesis
Foliar copper content (ppm)	**22.2**	**25.2**	16.0



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TEST PROTOCOL 3: WETTING ACTIVITY

STAGE	ILSA thesis 01	ILSA thesis 02	Company thesis
Extended leaves (Tracer: Fluorescein)	**Splinter New: 200 g/100 l** + Fluorescein: 25 g/100 l	**Splinter New: 300 g/100 l** + Fluorescein: 25 g/100 l	Fluorescein: 25 g/100 l

STAGE	ILSA thesis 01	ILSA thesis 02	Company thesis
Extended leaves (Tracer: Methylene Blue)	**Splinter New: 200 g/100 l** + Methylene Blue: 3000 ml/100 l	**Splinter New: 300 g/100 l** + Methylene Blue: 3000 ml/100 l	Methylene Blue: 3000 ml/100 l

The evaluation for wetting activity was carried out using fluorescein and methylene blue as tracers, with the optical evaluation of leaf coverage using UV light.

Company thesis

Fluorescein 25 ml/100 L

ILSA thesis 01

Fluorescein 25 ml/100 L + SPLINTER NEW 200 g/100 L

ILSA thesis 02

Fluorescein 25 ml/100 L + SPLINTER NEW 300 g/100 L

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Company thesis

Methylene blue 3000 ml/100 l

ILSA thesis 01

Methylene blue 3000 ml/100 l +
SPLINTER NEW 200 g/100 l

ILSA thesis 02

Methylene blue 3000 ml/100 l +
SPLINTER NEW 300 g/100 l

Comparing the pictures, it is evident that Splinter New considerably extended the wetted surface of the leaves, both at the 200 g/100 l dosage and at the 300 g/100 l dosage.

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