



PRODUCT INFO
& DATASHEET

SICO-TRIGGER

Confidential internal use only – Sales rationale for Sico distributors
Product information: summer 2004

USAGE SUMMARY

* SICO-TRIGGER is designed and recommended on **spring sown root crops** to enhance early root development and increase vital early leaf area, leading to vigorous growth and yield increases. The 1.0 l/ha rate is our recommendation for use on **potatoes, sugar (and fodder) beet and carrots**. In addition to the root crops, SICO-TRIGGER is the product of choice for use under good late spring growing conditions on later sown spring crops like **maize and linseed**. The best responses will be achieved in a high fertility, high output crop, irrigated where necessary.

* The application of SICO-TRIGGER should take place as soon as there is enough leaf to take up the product. This is normally at the 3 to 6 leaf stage of sugar beet. In general, later applications during the vegetative growth period are still effective, but earliest treatments produce the most commercially viable responses.

The effect of SICO-TRIGGER is most pronounced when the crop is actively growing and capable of using the stimulus that the product provides.

* SICO-TRIGGER works well when used in program with, rather than instead of, foliar feed type products, for example: Lamina foliar phosphate. Crops treated with SICO-TRIGGER need nutrition and moisture to sustain the early development boost provided by SICO-TRIGGER. Treated sugar beet will commonly have roots penetrating to double the untreated depth 3 weeks after treatment. The consequence of this is that the foliage of treated crops meet both along and across the rows earlier than untreated crops. This has a consequence for weed control, in that residual herbicides need to be applied slightly earlier to ensure treated soil within the rows and control late germinating fat hen and redshank.

* SICO-TRIGGER has been particularly **successful in producing large marketable yield increases in the potato crop, but will readily improve any root crop**. Overall yields of sugar beet are increased, with observable differences between treated and untreated areas of the field. Much later in the life of the crop, untreated plants can be observed wilting in the late afternoon sun of summer, whereas wilting is significantly delayed in the treated areas. This is because the treated plants develop more root earlier and are consequently less prone to the effects of drought.

* Following the use of SICO-TRIGGER in a number of crops, higher levels of overall plant health have been reported. This is clearly the result of the early increase in root development leading to **more robust plants that are more resistant to disease and pests** and better able to source nutrients and moisture. In some cases, treated plants have matured earlier than untreated under optimum growing conditions. The effects of SICO-TRIGGER are most obvious where crops are grown on lighter soil types with high fertility, but all soil types are capable of beneficial results where the product is applied.

* In line with the Sap International Corporation NV/SA policy of affordable technology, SICO-TRIGGER is priced to make it as attractive as possible. Farm costs in the E.U. of around 7.50 Euro an acre make it good value for the powerful and novel root biostimulant activity. It is no more expensive than any comparable product, and cheaper than most of the seaweed, yukka, and other plant extract based biostimulants.

WHAT IS SICO-TRIGGER?

SICO-TRIGGER is a sophisticated cocktail of compounds that are analogues of the molecules that stimulate the plant to produce its own auxins and other growth hormones. It is a safe and non-hazardous material, formulated from specific technical materials that represent no risk of residue or contamination. The formulation is optimised for root crops and spring-sown crops going through rapid vegetative growth. It is compatible with some pesticide treatments, but is best applied alone or in adverse weather conditions SICO-TRIGGER can be tank-mixed with "SICO-EXTEND" (adhesive polymer adjuvant) to stick it to the plant and prevent leaching from the leaf surface.

DOES SICO-TRIGGER WORK?

Three years trial, based on the original glasshouse work has confirmed the efficacy of this product and commercial usage has only served to underline the conservative nature of the claims made for SICO-TRIGGER.

The trials information gathered to date seems to indicate that the most fertile crops are those most likely to benefit. If weather conditions are less than ideal (warm and moist growing weather) at the time of application, then a follow up dose (half to full rate) applied when conditions improve, will generate the greatest responses. Commercial usage work has generated several consistent results. The comparison has always been with untreated, and various dose rates of SICO-TRIGGER. The results are validated by comparing SICO-TRIGGER with products like Maxicrop or Redicrop, seaweed extract products claimed to contain high levels of plant growth hormones, which are aimed very much at the same treatment window as SICO-TRIGGER, but sold

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SICO FERTILISERS
EVERY TIME THE *right* SOLUTION



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as purely root and health stimulants. The other accepted material in the market that SICO-TRIGGER has been compared with is Yeald, (Newmans, Loveland, UAP product). This material is a Zinc Acetate / Ammonia complex, introduced from the USA, and has gained widespread acceptance as a root development biostimulant, mainly in root crops. The newer formulations of Yeald contain less of the Zinc / Ammonia complex, but more trace elements, and are less cost-competitive at the root crop rates. Whenever we have tried to reformulate SICO-TRIGGER to include trace elements, the biostimulant activity of the product has been lost. Tank-mixtures of SICO-TRIGGER with other products would appear not to represent a problem due to the dilution of concentrates in the spray water.

SUMMARY

- * SICO-TRIGGER is a powerful and safe biostimulant, it has little or no nutritional value and acts by triggering the plants own systems to produce more growth hormones.
- * The formulation of SICO-TRIGGER is optimised for root crops.
- * SICO-TRIGGER works best on high potential crops and is NOT a stimulant for backward crops. It works during the period of vegetative growth and the earlier it gets into the plant, the more effective it seems to be.
- * SICO-TRIGGER does not seem to be temperature dependent and is robust against all weather conditions. The formulation is not weather-proof and may need to be attached to the leaf using the adhesive properties of SICO-EXTEND under adverse conditions.
- * SICO-TRIGGER increases root length and mass.
- * SICO-TRIGGER effectively pushes root crops through early growth stages to achieve maximum root / tuber development and leaf area index whilst growing conditions are ideal in early summer.
- * SICO-TRIGGER will promote earlier plant development, causing plants to be less susceptible to drought stress.
- * SICO-TRIGGER is NOT a plant growth regulator, this having been established by close examination of its components.
- * SICO-TRIGGER is quickly metabolised within the plant and presents no residue hazards.

SICO-TRIGGER, THE TRUE BIOSTIMULANT

- * SICO-TRIGGER is a complex of compounds that are essential in many plant processes.
- * The product has 11 active components fully researched and proven.
- * It is a safe and non-hazardous material.
- * It also contains a surfactant systems to aid retention and uptake on the leaf surface.
- * It is a synthetic compound and does not contain any growth hormone substances, or recognised growth regulators

PRODUCT BENEFITS

- * Increased early rooting.
- * Increased leaf and shoot growth.
- * Better establishment.
- * Increase in plant carbohydrate production = increased sugar level.

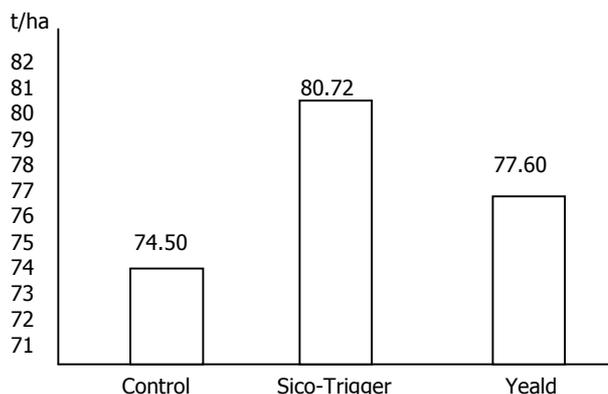
The result = higher marketable yield.

DOSE AND APPLICATION

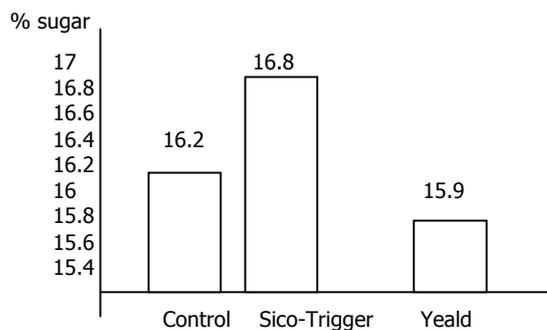
Sugar Beet 1 litre 2 - 6 true leaves *

* If weather conditions are less than ideal (warm and moist growing weather) at the time of application, then a follow up dose (half to full rate) applied when conditions improve, will generate the greatest responses. It works best on high potential crops, and IS NOT a stimulant for backward crops. It works during the period of vegetative growth, and the earlier it gets into the plant the more effective it is.

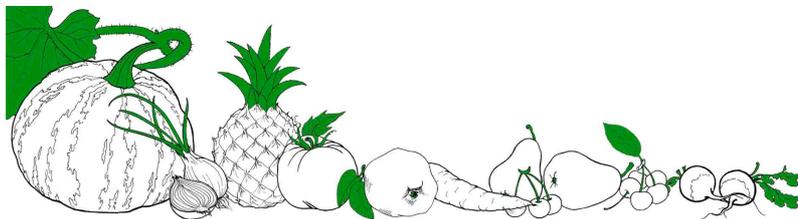
The effects of biostimulants on sugar beet yield
Average of three sites



The effects of biostimulants on % sugar
Average of three sites

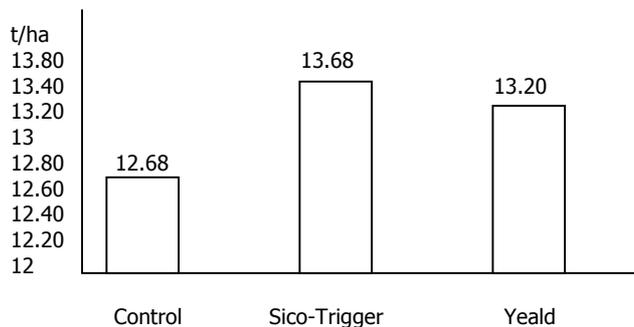


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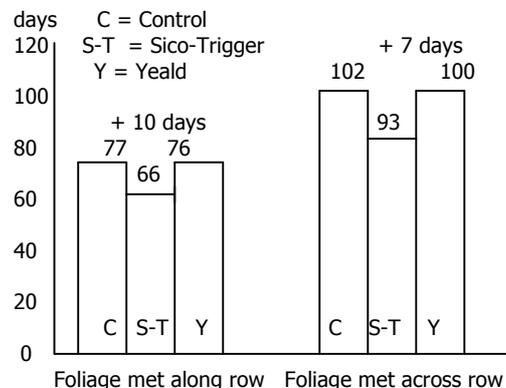


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The effects of biostimulants on actual adjusted sugar yield
Average of three sites



The effects of biostimulants on crop growth
The lower the column, the shorter the time =
the faster the growth

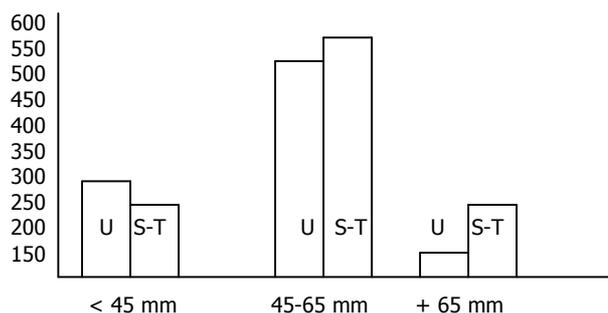


SICO-TRIGGER – Potatoes

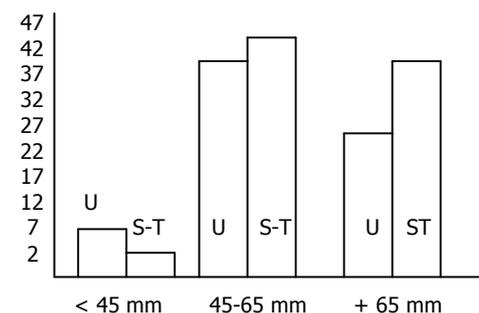
	Untreated (U)	SICO-TRIGGER (S-T)
Tuber nos.	1036	1082
< 45 mm	310	262
45-65 mm	533	568
+ 65 mm	193	252

	Untreated (U)	SICO-TRIGGER (S-T)
Tuber wt	79.3	89.0
< 45 mm	6.2	4.8
45-65 mm	43.3	44.4
+ 65 mm	29.9	39.8

Tuber numbers SICO-TRIGGER vs Untreated



Tuber weight in kg



MAIZE SEED TREATMENT TRIAL

Assessment date: 05/10/1999
Variable: Yield (kg) of cobs/10 m row
Variety: Semira

Treatment: Various
Timing: Seed treatment

	Rep 1	Rep 2	Rep 3	Mean
Untreated	31.35	32.82	29.05	31.07
SICO-TRIGGER A	23.93	36.85	35.15	31.98
SICO-TRIGGER B	37.76	35.88	37.92	37.19
SICO-TRIGGER C	33.48	46.64	38.19	39.44
SICO-TRIGGER D	31.35	45.31	31.82	36.16
Mean	31.57	39.50	34.43	35.17

Variable: Yield (kg) stems - leaves /10 m row
Variety: Semira

Treatment: Various
Timing: Seed treatment

	Rep 1	Rep 2	Rep 3	Mean
Untreated	28.22	28.57	27.30	28.03
SICO-TRIGGER A	30.07	24.79	25.71	26.86
SICO-TRIGGER B	36.40	37.93	36.35	36.89
SICO-TRIGGER C	32.65	43.75	37.88	38.09
SICO-TRIGGER D	35.34	32.86	37.35	35.18
Mean	32.54	33.58	32.92	33.01

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Variable: Variety:	Total yield (kg)/10 m row Semira	Treatment: Timing:				Various Seed treatment
		Rep 1	Rep 2	Rep 3	Mean	
Untreated		59.57	61.39	56.35	59.10	
SICO-TRIGGER	A	54.00	61.64	60.86	58.83	
SICO-TRIGGER	B	74.16	73.81	74.27	74.08	
SICO-TRIGGER	C	66.10	90.39	76.07	77.53	
SICO-TRIGGER	D	66.69	78.17	69.17	71.34	
Mean		64.11	73.08	67.34	68.18	

Variable: Variety:	Plants/10 m row Semira	Treatment: Timing:				Various Seed treatment
		Rep 1	Rep 2	Rep 3	Mean	
Untreated		171.00	179.00	180.00	176.67	
SICO-TRIGGER	A	194.00	201.00	203.00	199.33	
SICO-TRIGGER	B	163.00	205.00	188.00	185.33	
SICO-TRIGGER	C	166.00	193.00	179.00	179.33	
SICO-TRIGGER	D	171.00	159.00	166.00	165.33	
Mean		173.00	187.40	183.20	181.20	

Variable: Variety:	Cobs/plant Semira				Treatment: Timing:		Various Seed treatment
	Rep 1	Rep 2	Rep 3	Mean			
Untreated	1.02	1.01	1.00	1.01			
SICO-TRIGGER	A	1.01	1.09	1.06	1.05		
SICO-TRIGGER	B	1.00	1.01	1.10	1.04		
SICO-TRIGGER	C	1.33	1.19	1.22	1.25		
SICO-TRIGGER	D	1.23	1.10	1.26	1.20		
Mean	1.12	1.08	1.13	1.11			

All yields are adjusted to equivalent to 10% Dry Matter (some samples are being dried to generate total Dry Matter figures). Rate A is equivalent to 0.125 ltr. SICO-TRIGGER applied to 1 ha of seed. Rate B is equivalent to 0.25 ltr. SICO-TRIGGER applied to 1 ha of seed. Rate C is equivalent to 0.5 ltr. SICO-TRIGGER applied to 1 ha of seed. Rate D is equivalent to 1.0 ltr. SICO-TRIGGER applied to 1 ha of seed.

Rate D generated a 2 to 4 day delay to emergence, and reduced plant numbers. Rate C generated a slight delay to emergence. Rates A & B showed no difference to time of emergence.