TwinN in organic farming

Mapleton Agri Biotec Pty Ltd

Contact
robbower@mabiotec.com
www.mabiotec.com

TwinN
YIELD INCREASING MICROBES

TwinN – what is it?

- TwinN is a freeze dried microbial biofertiliser – the microbes fix nitrogen as well as assisting crop growth in other ways (see next slide)
- TwinN is used in organic farming, biological farming and conventional farming systems
- In organic farming TwinN will help supply nitrogen and will help your crop make better use of any organic sources of nitrogen

TwinN – what isn't it?

- TwinN is not a substitute for application of the normal applications of manures, mulches and other sources of nitrogen nutrition
- Apply TwinN in addition to the usual sources of organic nutrients and improve yields

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How does it work?

TwinN improves crop performance by four main mechanisms

1. Converts N_2 from the air into a **steady supply of plant available N** through the entire crop season
2. Produces **larger root systems** due to production of Plant Growth Factors (PGFs)
3. Microbes release organic acids **improving availability of P** and some micronutrients in some soils
4. **Improved soil health and structure** with longer term use of TwinN lowering **soil disease pressure** and **builds soil carbon**

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TwinN organic potato trials – England 2007 & 2008

- The trial recorded yield and tuber size in two cvs in 2007 and 2008
- The trial was performed by an independent consultant agronomist

Trial Results

Organic Potato Herefordshire UK - 2007

Treatment All treatments had 80 units N from organic fertiliser	Milva		Valor	
	T/ha	% of control	T/Ha	% of Control
Untreated Control	`14.5 (a)	100	18.6 (a)	100
Single TwinN at Planting	17.5 (b)	120	21.4 (b)	120
TwinN at Planting and Tuber Initiation	18.6 (c)	128	23.9 (c)	129

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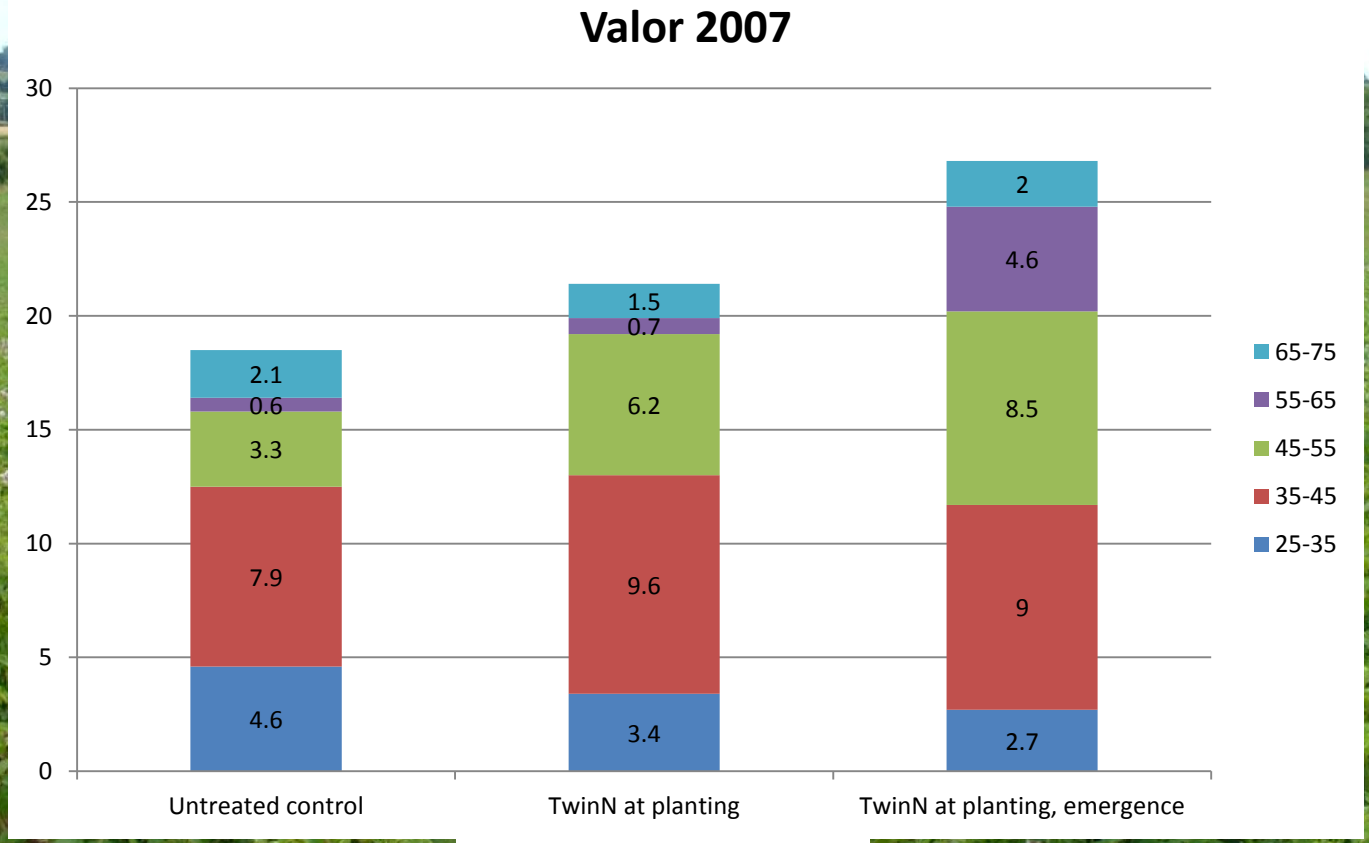
Trial Results

Potato Herefordshire UK - 2007



Tubers by grade

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Trial Results

Organic Potato Herefordshire UK - 2008

Treatment All treatments had 160 units N from organic fertiliser	Amarosa		Valor	
	T/ha	% of control	T/Ha	% of Control
Untreated Control	`10.09 (a)	100	29.3 (a)	100
TwinN at planting and emergence	12.3 (ab)	112	37.9 (b)	129
TwinN at planting, emergence and tuber Initiation	13.7 (b)	126	41.7 (b)	143

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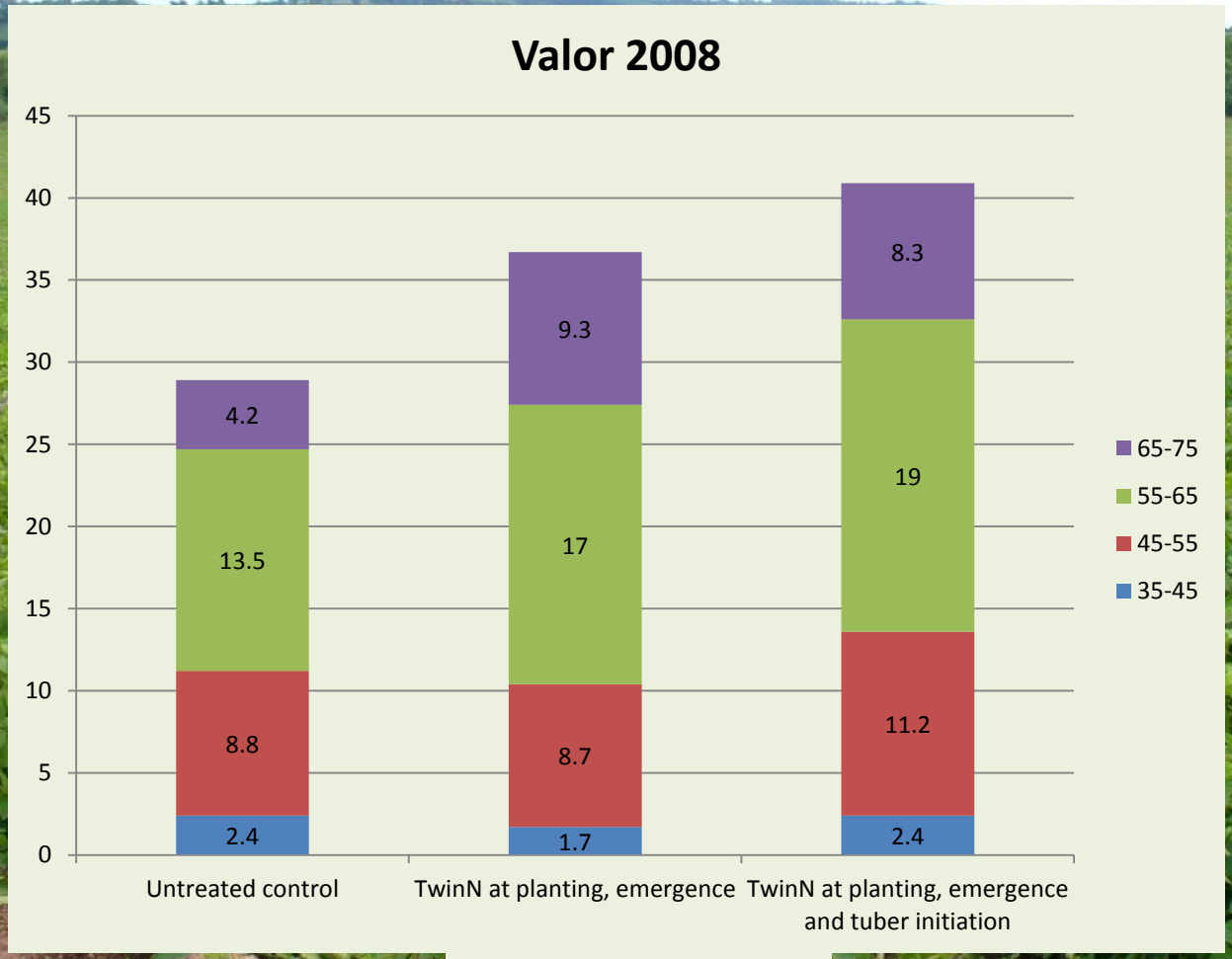
Trial Results

Organic Potato Herefordshire UK - 2008



Tubers by grade

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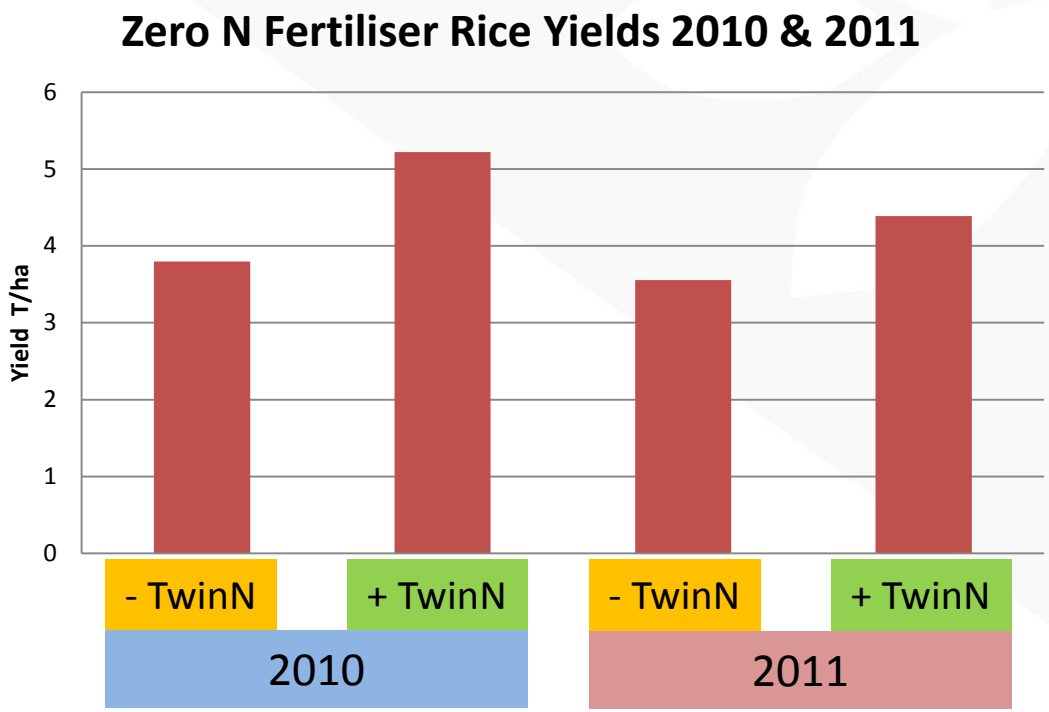
Registration trials - India 2010 & 11 – Rice

Key Results

- 2010 - Zero nitrogen fertiliser + TwinN = 38% more yield than Zero nitrogen
  - **– Income increase**
- 2011 - Zero nitrogen fertiliser + TwinN = 23% more yield than Zero nitrogen
  - **– Income increase**



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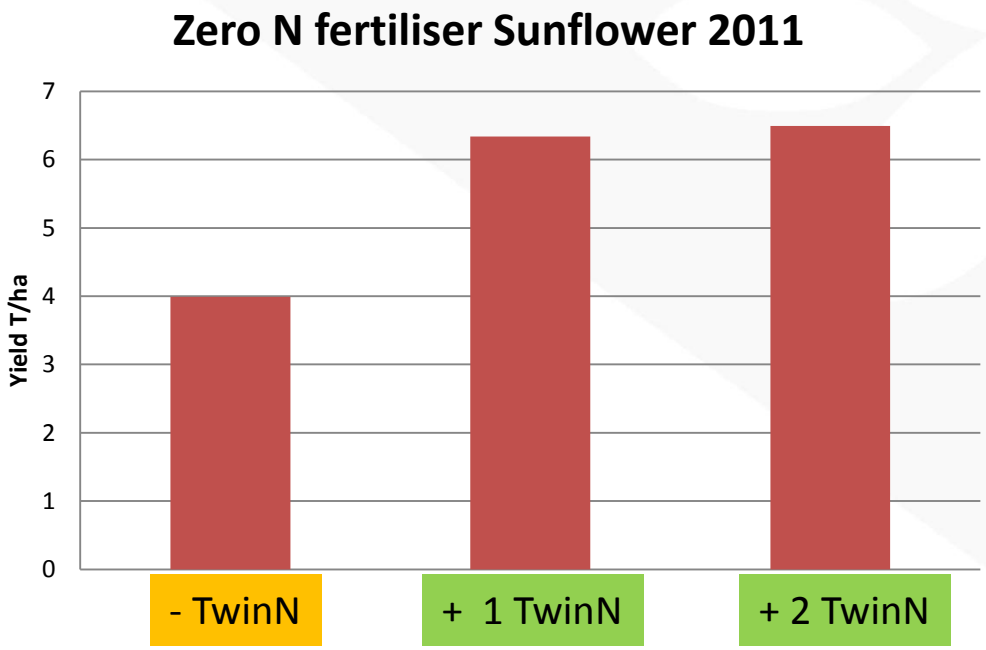
Registration trials - India 2011 – Sunflower

Key Results

- Zero nitrogen fertiliser + 1 TwinN = 59% more yield than Zero nitrogen
  - **– Income increase**
- Zero nitrogen fertiliser + 2 TwinN = 63% more yield than Zero nitrogen
  - **– Income increase**



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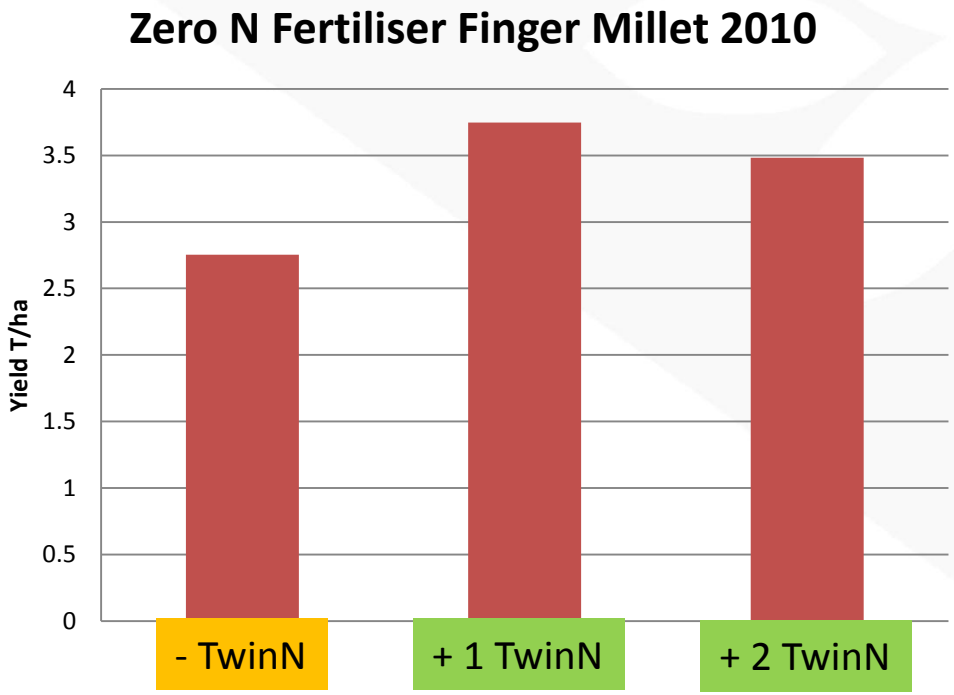
Registration trials - India 2010 – Finger Millet

Key Results

- Zero nitrogen fertiliser + 1 TwinN = 36% more yield than Zero nitrogen
  - **– Income increase**
- Zero nitrogen fertiliser + 2 TwinN = 26% more yield than Zero nitrogen
  - **– Income increase. One TwinN application was sufficient.**



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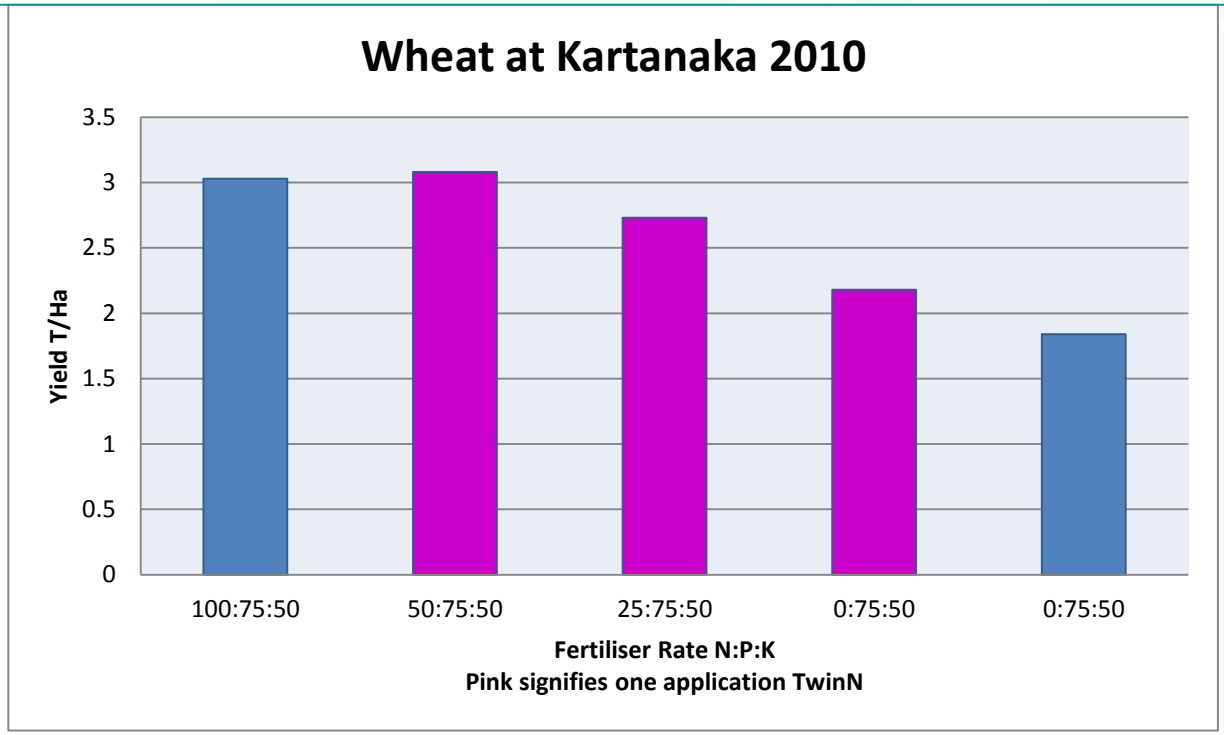
Registration trials India 2010 - Irrigated Wheat

Key Results

- Half nitrogen fertiliser + TwinN = same yield as 100% nitrogen
  - **– Cost reduction**
- Zero nitrogen fertiliser + TwinN = 18% higher yield than Zero Nitrogen
  - **– Income increase**



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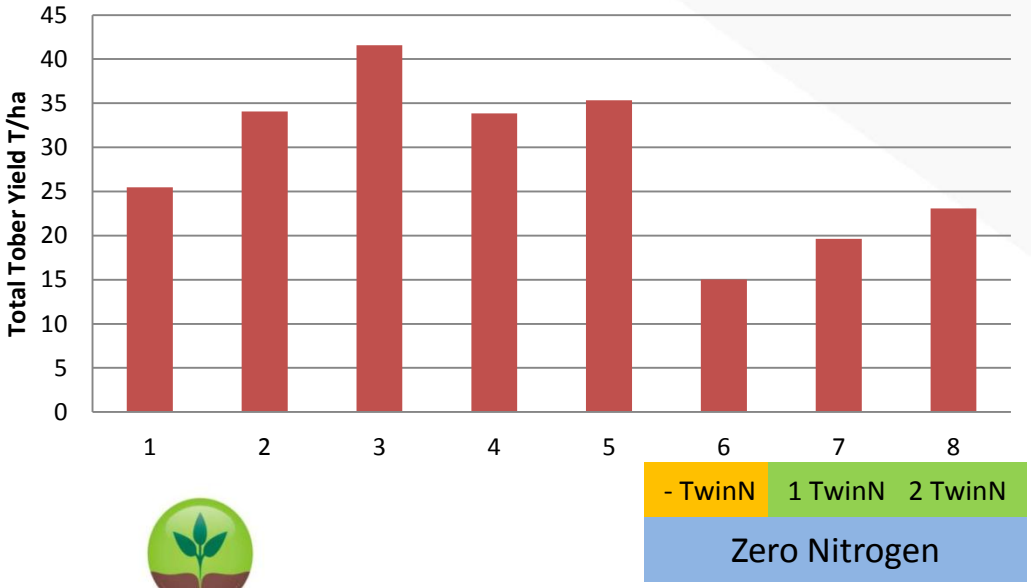
Registration trials - India 2010 – Potato

Key Results

- Zero nitrogen fertiliser + 1 TwinN = 31% more yield than Zero nitrogen
  - **– Income increase**
- Zero nitrogen fertiliser + 2 TwinN = 54% more yield than Zero nitrogen
  - **– Income increase.**
- TwinN with reduced N gave increased yield over 100% N

Potato Yield 2010



TREATMENTS

T-1 Standard Fertiliser 125kgN+100kgP+125kgK per ha
T-2 50%N + P & K +One TwinN
T-3 50%N + P & K +Two TwinN
T-4 25%N + P & K +One TwinN
T-5 25%N + P & K +Two TwinN
T-6 0%N + P & K + No TwinN
T-7 0%N + P & K + One TwinN
T-8 0%N + P & K + Two TwinN

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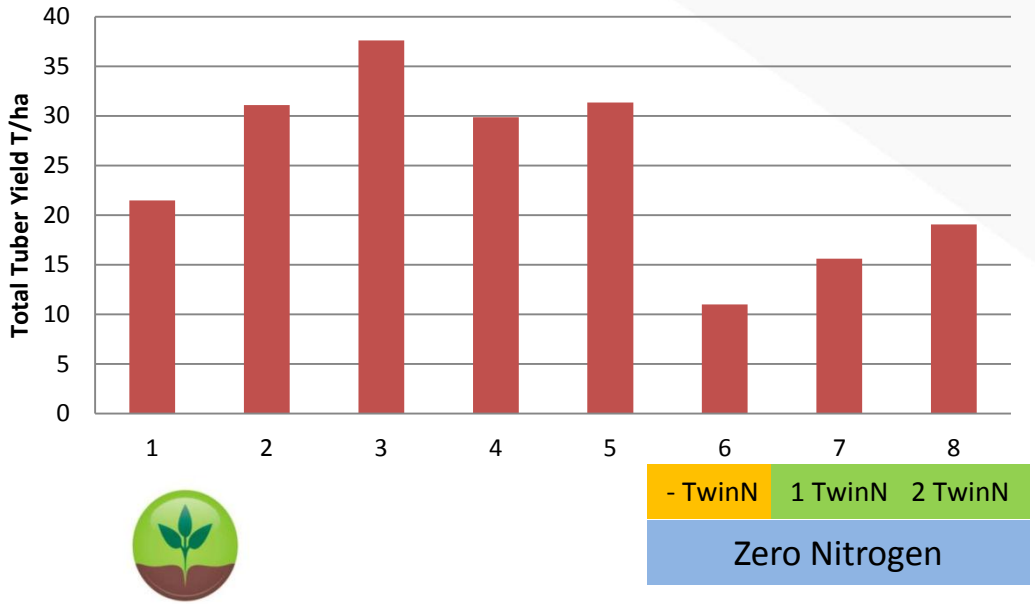
Registration trials - India 2011 – Potato

Key Results

- Zero nitrogen fertiliser + 1 TwinN = 42% more yield than Zero nitrogen
  - **– Income increase**
- Zero nitrogen fertiliser + 2 TwinN = 73% more yield than Zero nitrogen
  - **– Income increase.**
- TwinN with reduced N gave increased yield over 100% N

Potato Yield 2011



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T-6 0%N + P & K + No TwinN
T-7 0%N + P & K + One TwinN
T-8 0%N + P & K + Two TwinN

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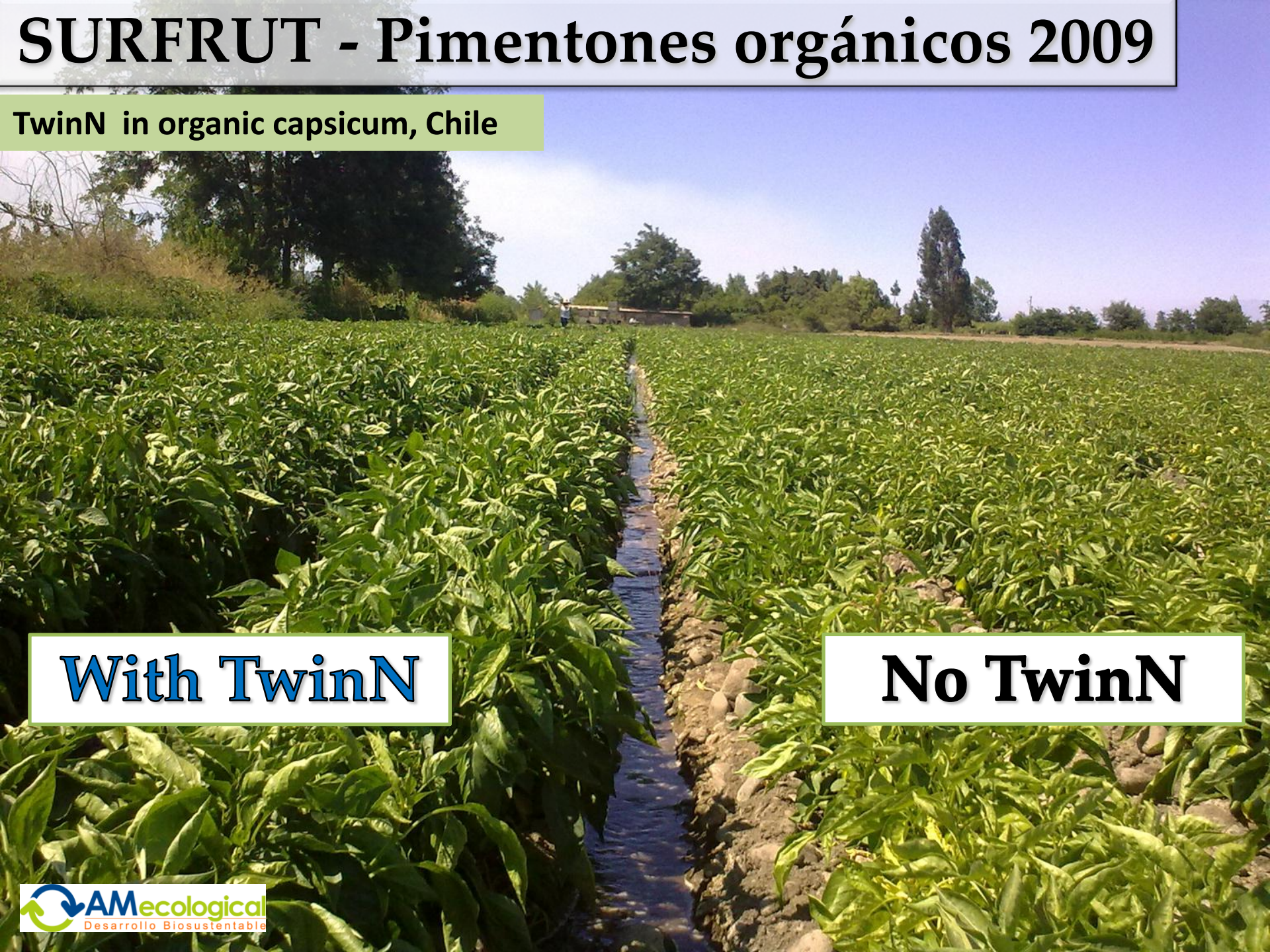
SURFRUT - Pimentones orgánicos 2009

TwinN in organic capsicum, Chile



AMecological
Desarrollo Biosustentable

Experiencias 2010

30 días post- aplicación

Sin TwinN

Con TwinN

Agricultor:	Carlos Cabrera Jofré
Sector:	Yungay, Chile
Región:	VIII R
Suelo:	Franco arcilloso

TwinN used in organic blueberries in Chile

On the left, no TwinN and nitrogen deficiency is evident.

On the right, 21 days after TwinN application and healthy leaf colour is regained

TwinN used in organic avocado, Australia

On the left, no TwinN

On the right, 2 months after a soil application of TwinN

TwinN used in organic cherry in Chile

On the left, no TwinN

On the right, 120 days after TwinN application via fertigation. Roots showed much greater secondary root development