



Carbono Bayer

PRO Carbono

MEXICO

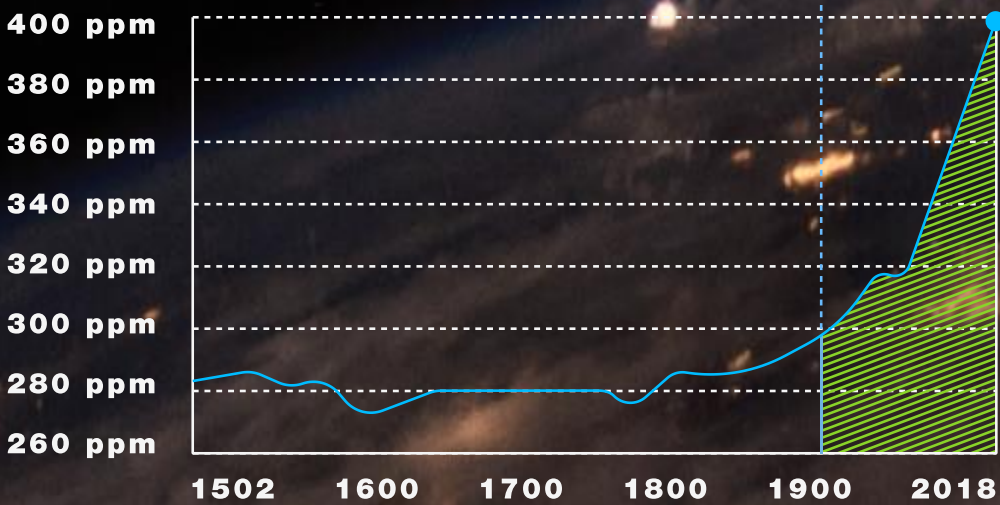


**/// Market Development
Agronomic Systems & Digital**



EL CAMBIO CLIMATICO ES UNO DE LOS MAYORES ENEMIGOS DE LA AGRICULTURA

La concentración global de CO² en la atmósfera **CRECIO 50%** los últimos 100 AÑOS



Fuente: <https://ourworldindata.org/co2-and-other-greenhouse-gas-emissions>
Fuente: <https://www.schatz.senate.gov/>

Surgen **NUEVAS SITUACIONES EXTREMAS** que desafían la seguridad alimentaria:



Define Technical Positioning and Create Value Through a Staged Approach

Stage 1 Component Trial

Determine component value & fit

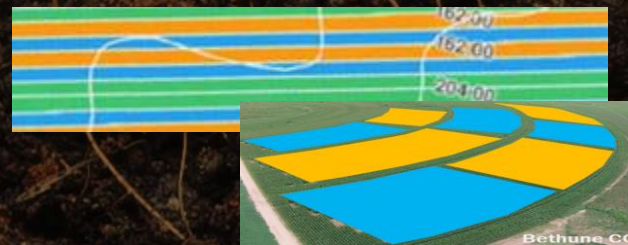
- Individual platform focus
- Single-factor testing



Stage 2 Interaction Trial

Determine products, practices and environment interactions to drive customer value

- Multi-platform focus
- Interaction of multiple factors
- Product x Agro practice
- Services



Stage 3 Validation Trial

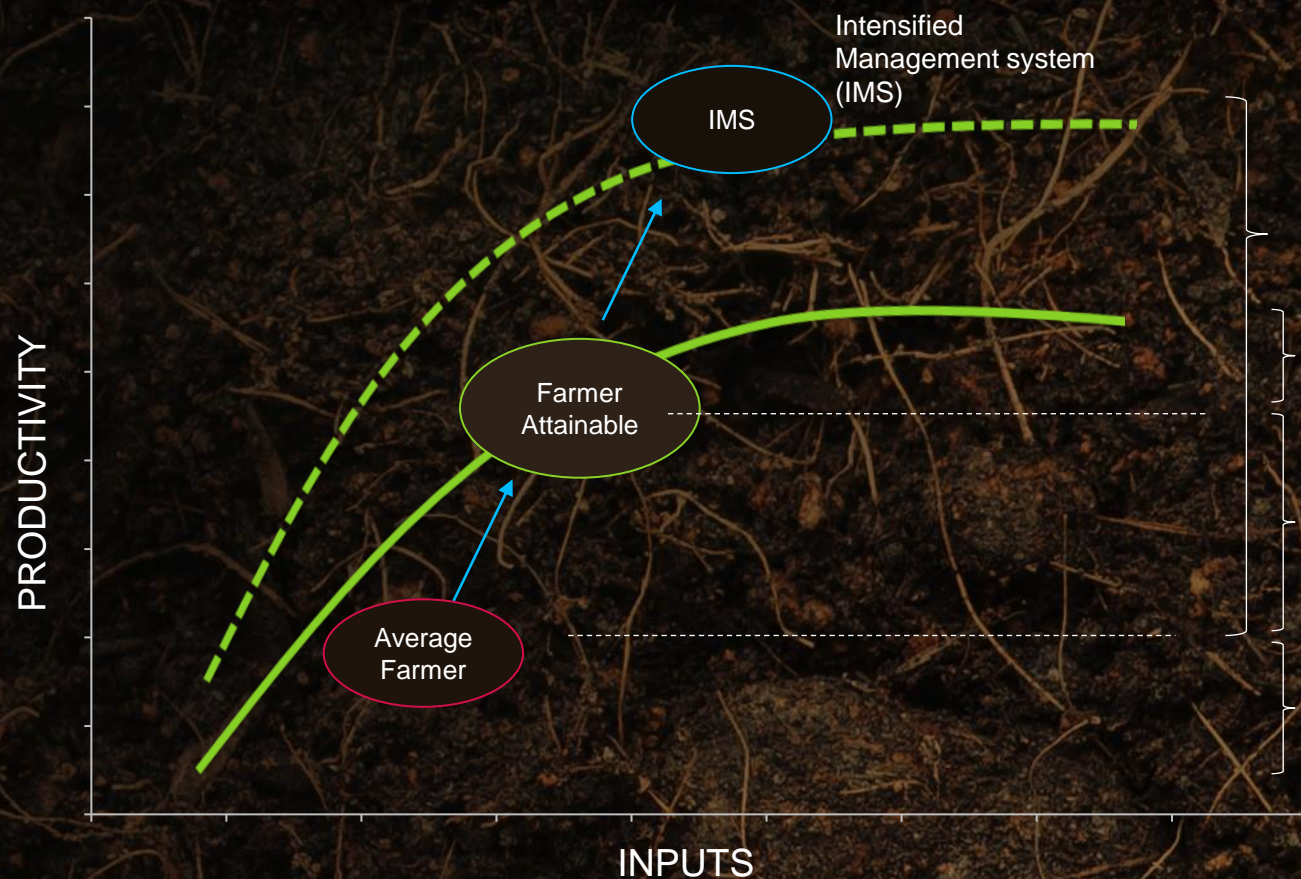
Tailored Solution Focus

- Increase grain yields.
- Increase profitability
- Increase yield stability
- Reduce risks
- Environmental resources efficiently use
- Soil Carbon sequestration



// Building Tailored Solutions under farm condition.

FUNDAMENTALS FOR THE ADOPTION OF INTENSIFIED AGRONOMICS MODELS



MORE TIME SOIL COVERED WITH LIVING CROPS

RESOURCE USE EFFICIENCY

MORE CROP RESIDUES TO THE SYSTEM

INCREASE IN BIODIVERSITY

+ PRODUCTIVITY
&
+ CARBON

Rotation intensification index (IIR)



monoculture

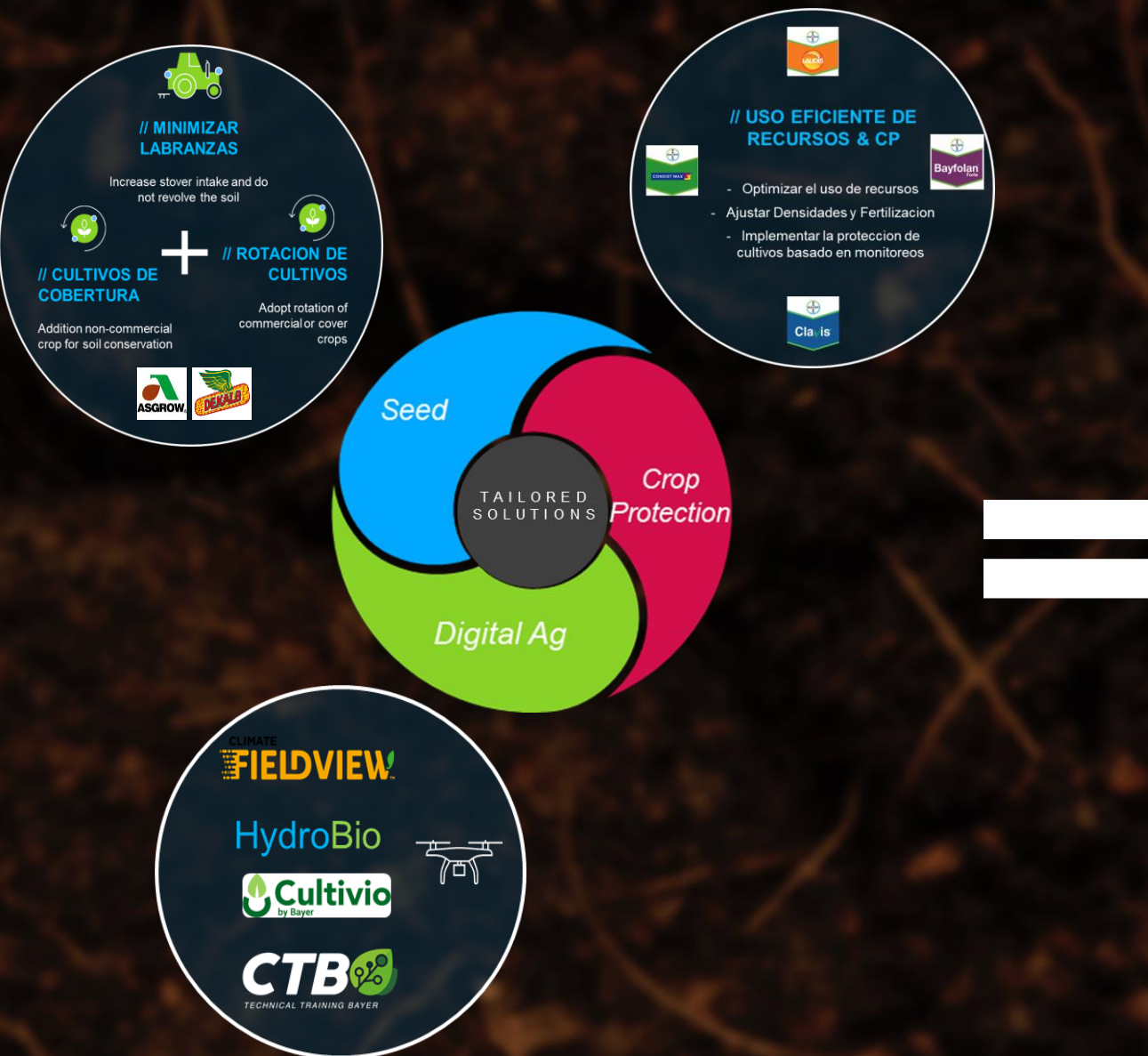
minimum rotation

maximum rotation
+ Cover crop



INTEGRATED SYSTEMS

Carbono Bayer



Economic Indicators

- + Grain yields.
- + System Productivity
- + Economic Return
- Yield variability and risk

Environmental Indicators

- Resource use efficiency
- Carbon, water & nutrient balance
- Environmental impact Reduction (EIR)
- GHG Estimation
- Soil Evolution

Sustainable Intensified Management implementation


From Strips-trials to Farm-trials

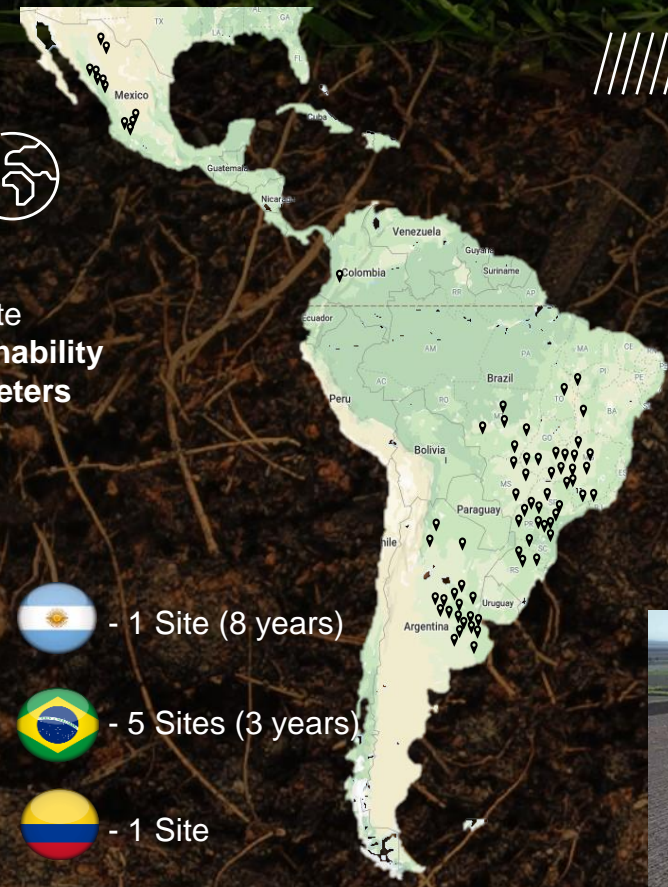
Strip trials


Definition & evaluation crop sequences and mixtures


Execution of multiple intensification levels


Define accurate sustainability parameters


Evaluate the evolution of the combinations in terms of yields and profits across years




-  - 1 Site (8 years)
-  - 5 Sites (3 years)
-  - 1 Site
-  - 2 Site

Farm trials





Validation trial Large Scale Field level


Execution with Farmer technology and equipment


Two managements Integrated Bayer recommendation


Evaluate at a field level the evolution of environmental indicators between managements across years



-  **52 Sites**
-  **54 Sites**
-  **15 Sites**



Intensified Management Systems Trials

System Field Layout

Average Farm Management (AFM):

Static plant population
Common hybrids/varieties
Non balanced fertilization
Farmer insect and weed control non threshold criteria



Non-Cover Crops

Corn - Corn



Wheat - Corn



Intensified Management System (IMS)

- ✓ Efficient Tillage
- ✓ Specify hybrids/varieties
- ✓ Adjusted plant population by Hybrid
- ✓ Nitrogen adjustment by Environment
- ✓ Fertilization balanced
- ✓ Insect and weed management under thresholds
- ✓ Fungicides application
- ✓ Efficient Use of Water (Hydrobio)
- ✓ Drone Application



Cover Crops

Corn – Cover Crop- Corn



Wheat – Cover Crop- Corn



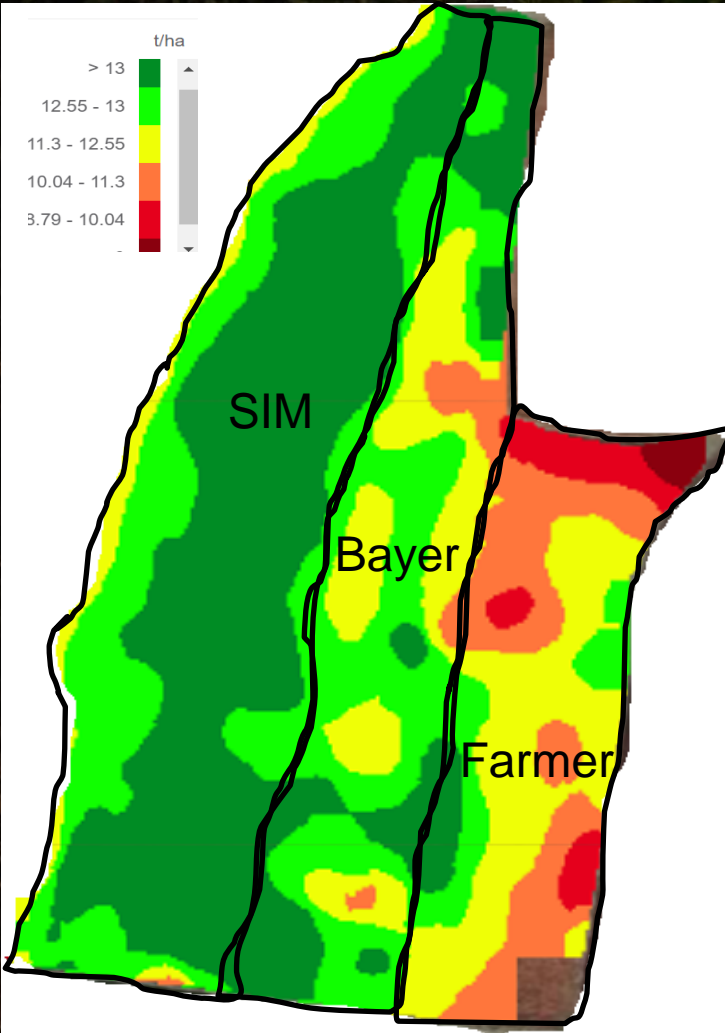
2018-2019

2019-2020

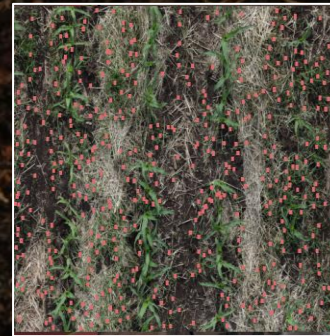
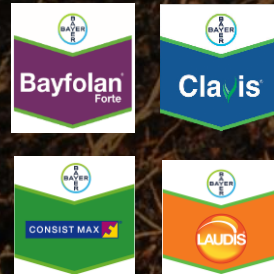
2020-2021

Intensified Management Systems Trials

System Field Layout



✓ Insect and weed management under thresholds



Weeds



Pest



Diseases



UAS Project - Full & Spot Drone Applications
Bayer Portfolio

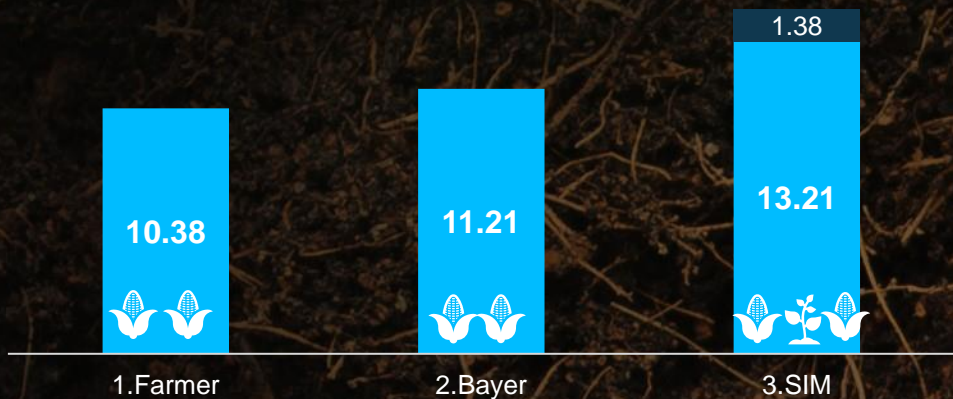
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Results – Productivity – Pacific Region (2 Years)

//// Farm trials

6 – Macro Localities (60 has)

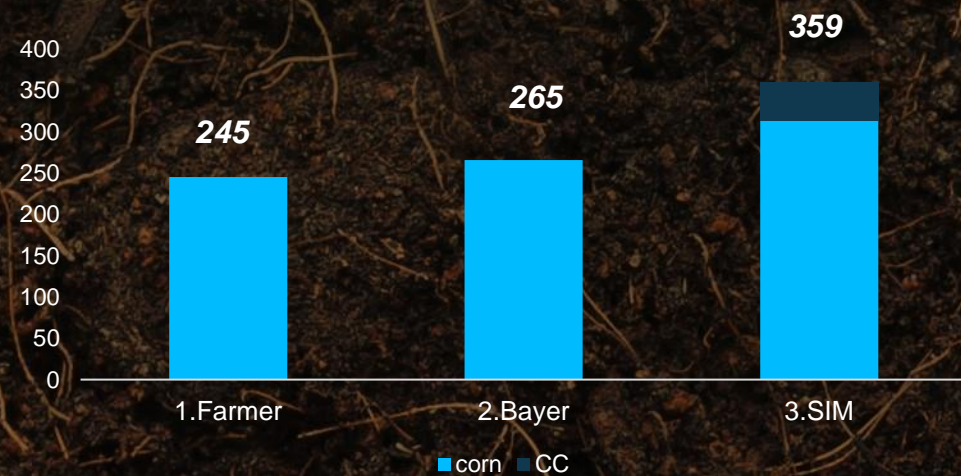
Productivity (Tn/ha)



+8%
Win Rate

+29%
Corn+CC
Sistema SIM
100%
Win Rate

Productivity Energy (Gj/ha)



+32%
Corn+CC
Sistema SIM

Results – Utility – Pacífic Region (2 years)

//// Farm trials

6 – Macro Localities (60 has)



+6.0%

Sistema **SIM**

+50%

Corn+CC

Sustainable Intensified Management Results

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Carbon + Farms- Year 2

/// Farm trials

Productivity (Ton/ha)



+29%



Farmer

Profitability (\$)



+50%



Farmer

Corn+CC (Guar Bean)



Intensified Agriculture

Water Use

-30%



HydroBio



Farmer

Δ Soil Carbon

+10%



Farmer

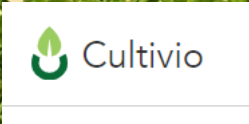
CO₂ eq Emissions

-6%



Farmer

Cultivio/Simulator of Sustainable Rotations – NORLA DIGITIZATION



Campañas

2021/2022

Maíz

12

(Tn/Ha)

x

Trigo

9

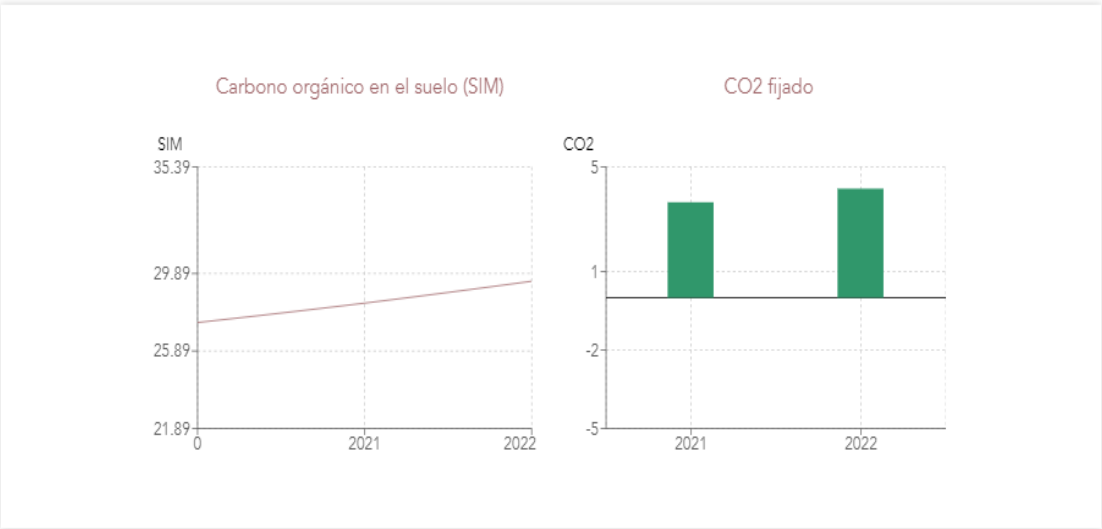
(Tn/Ha)

x

+ Agregar

2022/2023

Carbono orgánico en el suelo (SIM - Mg/ha-1) ¹	Balance CO2 por campaña (Mg/ha-1) ¹	
27.36	Carbono Inicial	
28.36	+3.653	suelo
29.49	+4.172	suelo
Ver gráficos		



Híbridos
Hipopótamo

Fecha de siembra
15 de noviembre de 2021

Ambiente
12 ton/ha

Perfil defensivo

	Hipopótamo
Roya Común	1
Tizón Foliar (H. Turcicum)	1
Pudrición de tallo (Fusarium / Macrophomina)	2
Acame de Raíz	2
Acame de Tallo	2

REFERENCIAS

Tolerante
1

Moderadamente tolerante
2

Moderado
3

Moderadamente susceptible
4

Susceptible
5

Sinergy & Knowledge Transfer – MEXICO

/ Digital Transformation / Sustainability / Innovation /



Sinergias MD- AgSD&S



1. Siembra Directa
2. Cultivos de Servicio
3. Dosis Crecientes de Nitrógeno
4. Balance de Nutrientes
5. Impacto Ambiental EIQ
6. Emisiones CO2
7. Balance Neutro de C
8. Silo Sustentable
9. Dron Monitoreo y Aplicación



inirap

Instituto Nacional de Investigaciones Forestales, Agrícolas y Pecuarias

1. Optimización de Agua
2. Efectos de Déficit Hídrico
3. Cálculos de Kc para el portafolio comercial de Híbridos Bayer



15 Macro Localidades



2 Plataformas de Investigación



1. Plataforma de Investigación Agricultura Sustentable



1. Microorganismos en el suelo
2. Comunidad de la nematofauna
3. Actividad enzimática con deshidrogenasa



1. Escalamiento Proyecto de Cultivos de Servicio



RESTRICTED



Difusión Sustentable BAYER- AgSD&S



Taller de KT MEX-ARG

AAPRESID, AIANBA, CREA, MDRS, MDA'S, FIELD MKT

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Cultivo CARBON CALCULATOR

KNOWLEDGE T.

SUSTAINABILITY

DRON VENTURE

DIGITALIZATION

MKT & SALES

SMALL HOLDERS

RESTRICTED

Initiatives – MEXICO

El Sol de México Ciudad de México, 15 de junio de 2022

SUSCRÍBETE

NUESTROS SITIOS

MÉXICO - METRÓPOLI - REPÚBLICA - MUNDO - FINANZAS - ANÁLISIS - GOSSIP - CÍRCULOS - CULTURA - DOBLE VÍA - DEPORTES - Q

TENDENCIAS) Ataque armado Covid-19 Médicos Jorge Alcocer AMLO Locatarios SSa

Este 5 de junio, #ElValorDeMiINE fue la participación ciudadana CONTAMOS TODOS Juntos INE

FINANZAS / JUEVES 2 DE JUNIO DE 2022

Adiós a las avionetas: en Sinaloa usan drones para fertilizar y proteger cultivos

Además, el uso de drones no presenta riesgo para los trabajadores



LO+VISTO

- CDMX Alerta sísmica sonará distinta; esto escucharás durante el simulacro en la CDMX
- CDMX Entra en vigor aumento al transporte público en CDMX: así quedaron las tarifas
- SOCIEDAD Muere una persona tras ataque en mercado de San Cristóbal de las Casas
- MUNDO El Salvador: de primer impulsor del Bitcoin a perder la mitad de su inversión





Carbono Bayer

**WE CAN DO IT,
TOGETHER**