

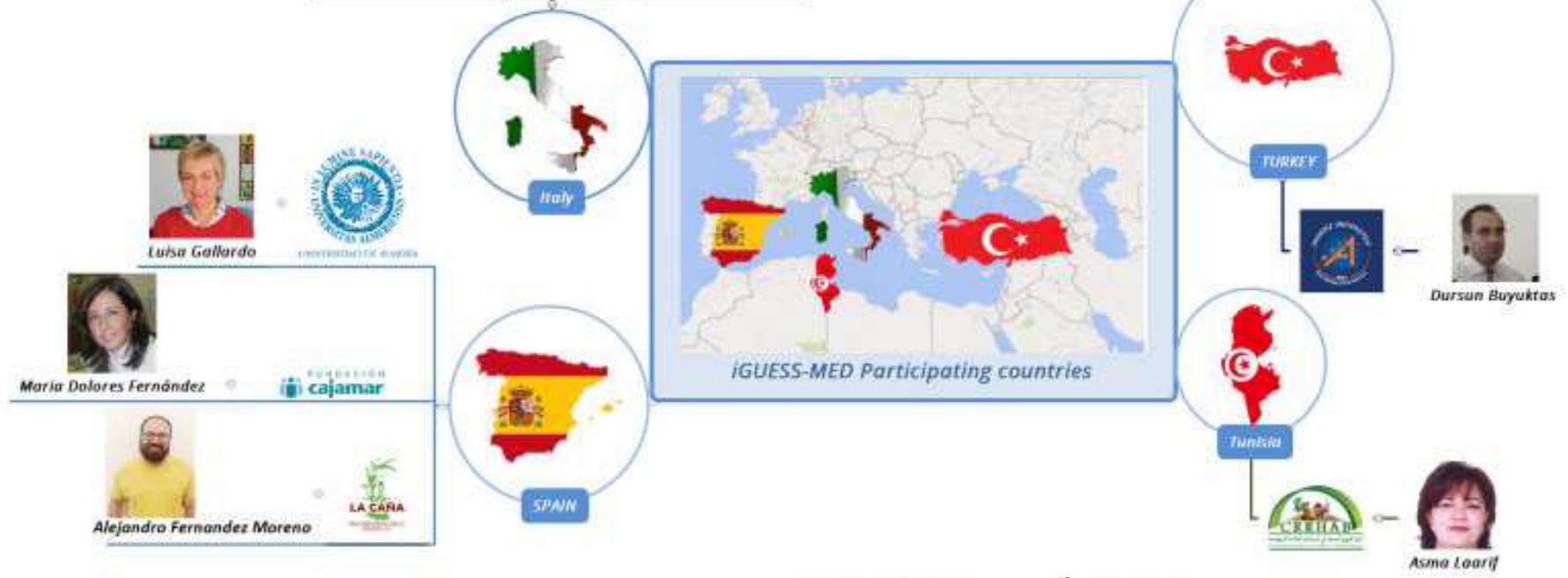
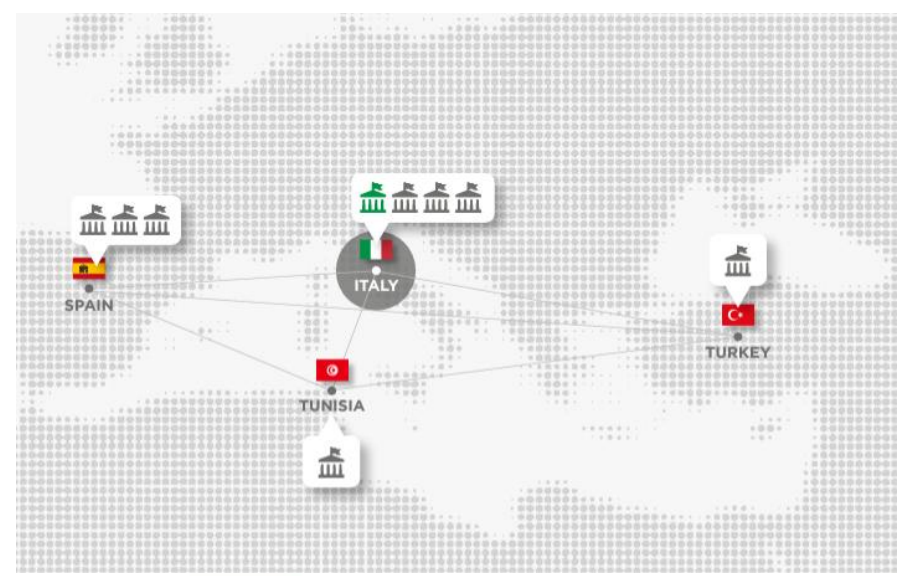
iGUESMED - Akdeniz Bölgesinde Yenilikçi Sera Karar Destek Sistemi: IoT Tabanlı İklim Kontrolü ile Gübreleme ve Sulama Yönetimi



Prof. Dr. Dursun BÜYÜKTAŞ



iGUESSMED Proje Ekibi



DSS = KARAR DESTEK SİSTEMİ (DECISION SUPPORT SYSTEM)



SÜRDÜRÜLEBİLİR YETİŞTİRİCİLİK İÇİN KARAR DESTEK SİSTEMİ



SU
YÖNETİMİ



BİTKİ BESİN
OPTİMİZASYONU



TARIMSAL İLAÇ KUL-
LANIMININ
OPTİMİZASYONU



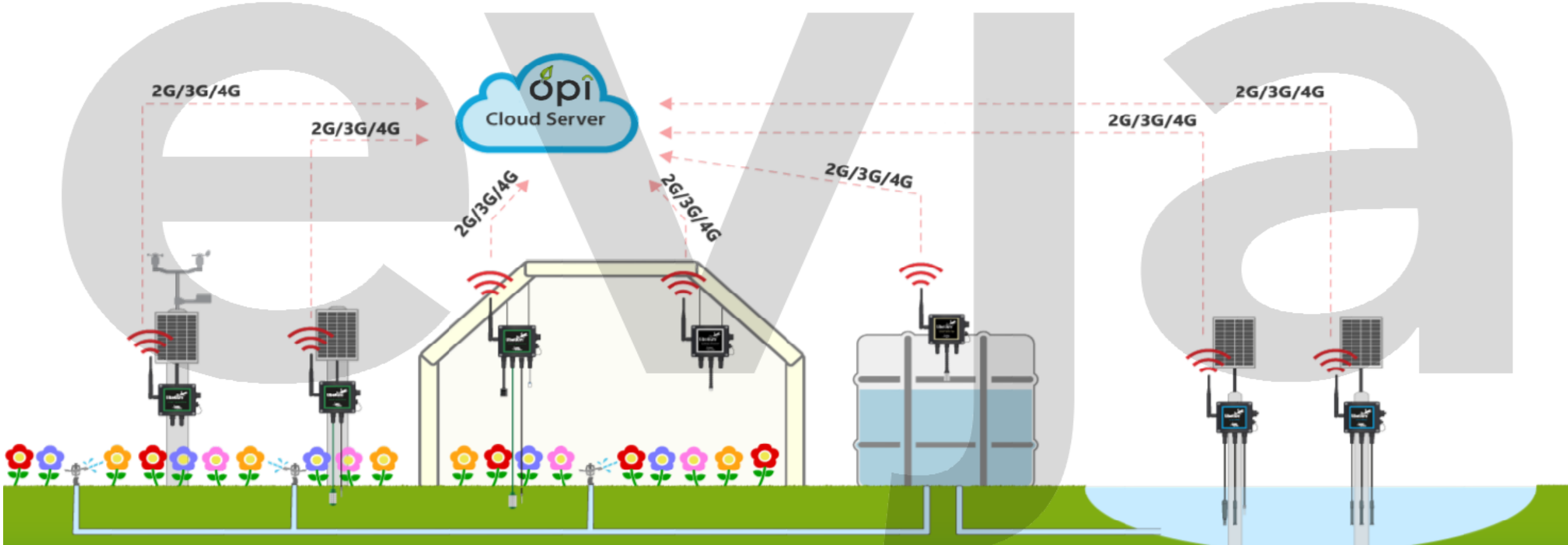
VERİM TAHMİNİ

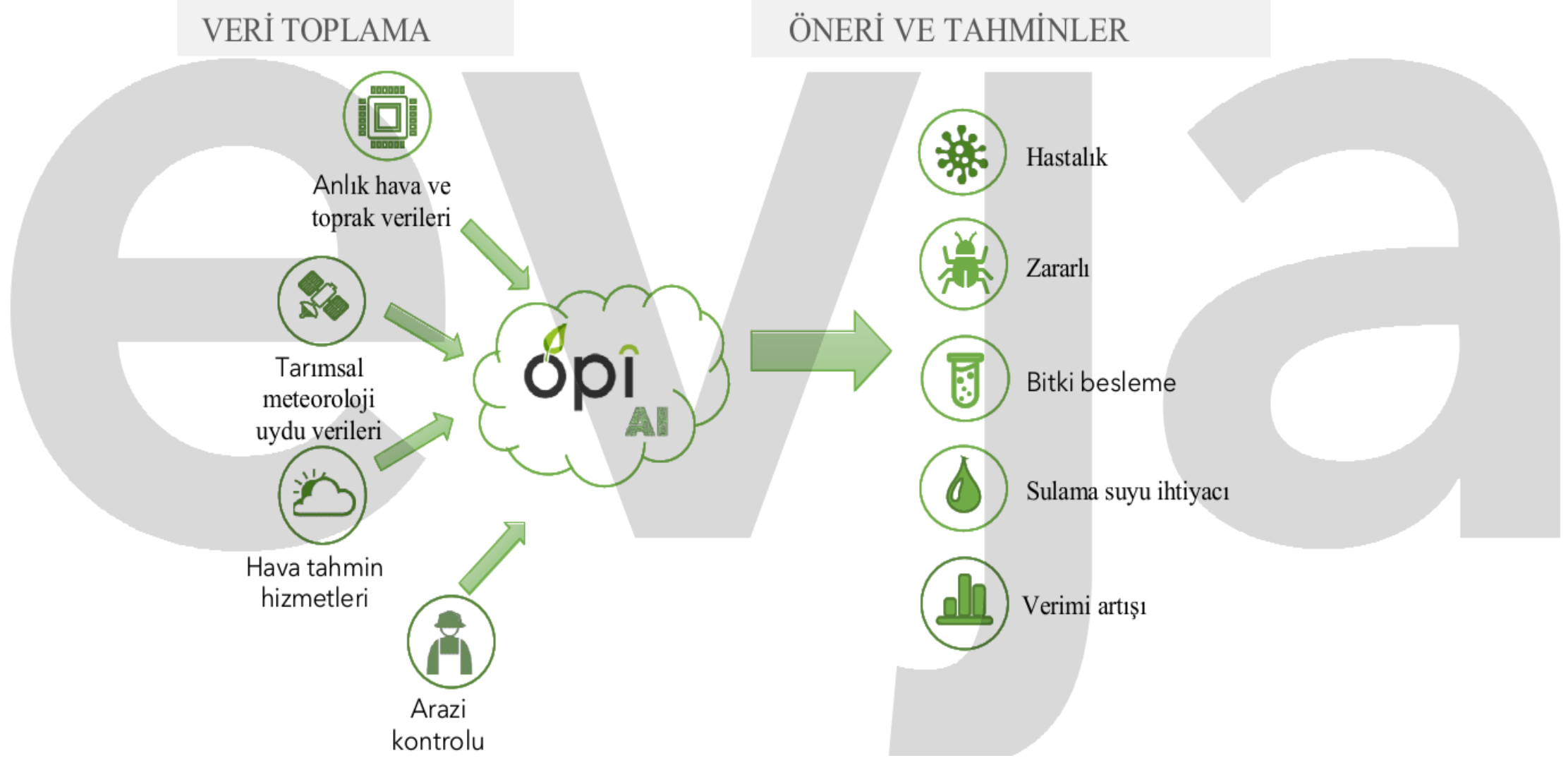


- Evja tarafından geliştirilen OPI Karar Destek Sistemi (DSS), tescilli bir Kablosuz Sensör Ağlarına dayalı bir donanım ve yazılım paketidir

OPI KABLOSUZ SENSÖR AĞI

İklim istasyonlarının tamamı, EVJA'nın bulut sunucularına hücresel ağ (2G/3G/4G/5G) aracılığıyla doğrudan bağlanır.





OPI Platformu: Ana Özellikler

Veriler



- Her 15/30 dakikada bir veri
- Ortalamalar ve İstatistikler



Hava tahmini



Araziden uyarı



Harita Entegrasyonu ve Coğrafi Konumlandırma



Günlük arazi uygulamaları için takvim hazırlama

Özel Uyarılar



- Gerçek Zamanlı uyarılar için eşikler
- E-posta ve Web bildirimleri



Tarımsal Veri Analizi

- Gerçek zamanlı ve tarihsel analiz
- Trendleri karşılaştırma ve analiz etme



Gelişmiş Erişim için Özelleştirilebilir Profil



Veri ve Grafikleri Dışa Aktarma



Platformlar Arası Web Uygulaması

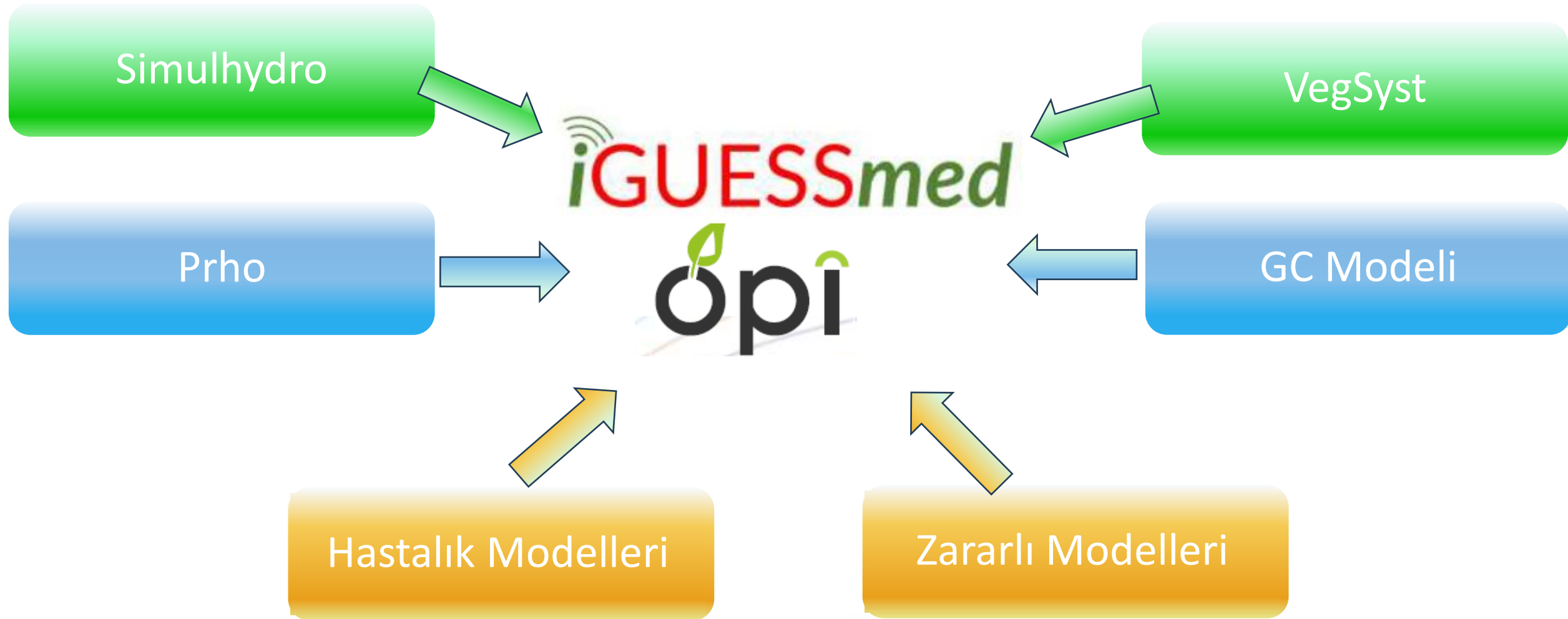


Temiz ve Ürüne Özel Kullanıcı Arayüzü



Bulut Platformu her zaman her yerden erişilebilir

DSS = KARAR DESTEK SİSTEMİ (DECISION SUPPORT SYSTEM)



PRHO: Sulama suyu ihtiyacı

Configuration

Transplant date: 30/12/2022

Plant density: 2 plants/m²

Irrigation water EC: 0.6 dS/m

Irrigation uniformity coefficient: 0.95

Save

Irrigation system

Single line **Grouped lines**

Dripper flow rate: 3 l/h

Distance between drippers: 0.5 m

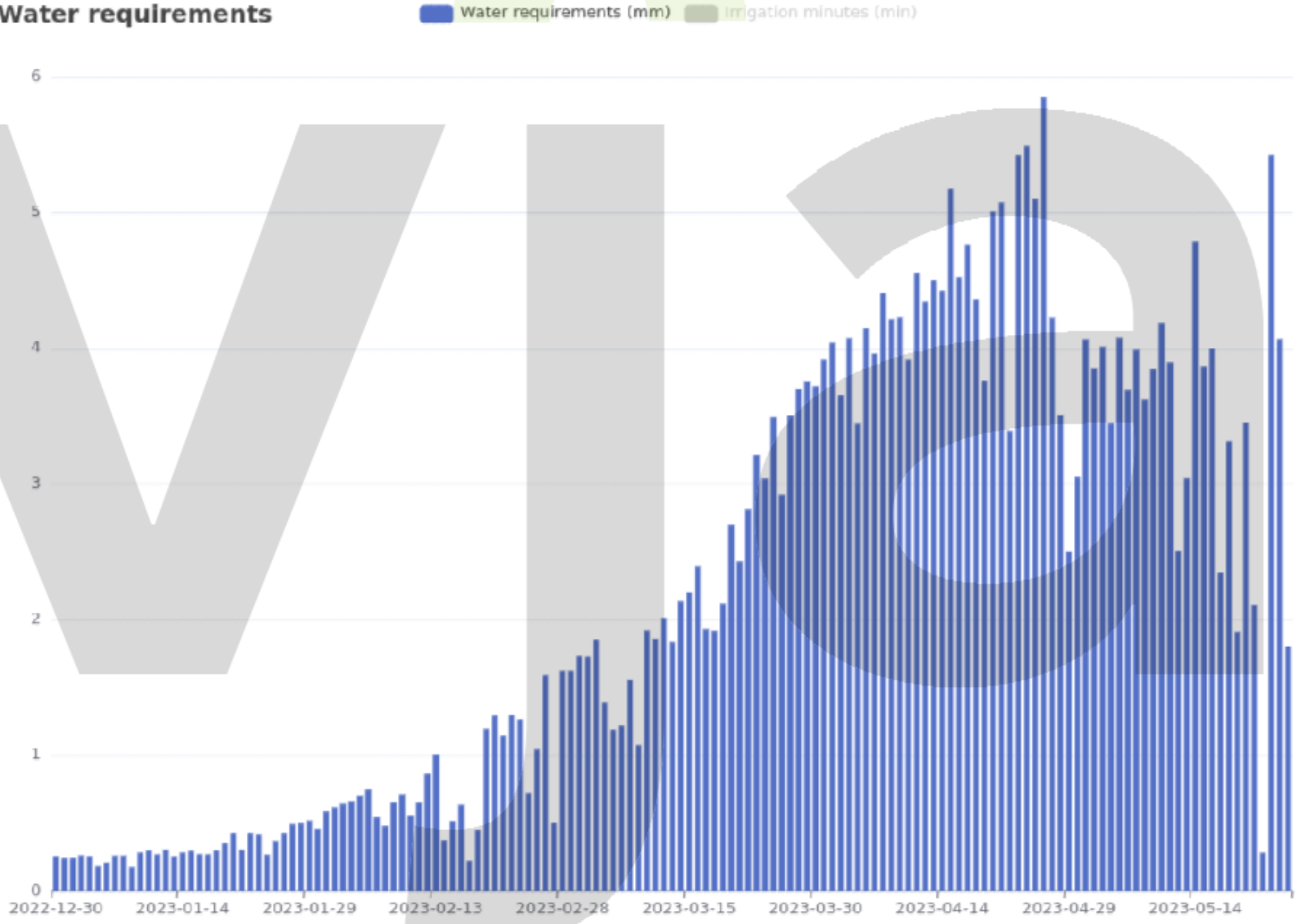
Distance between line groups: 1.2 m

Number of lines in a group: 2

Flow rate density: 0.17 l/min m²

Save

Water requirements



PRHO: IRRIGATION MINUTES

Configuration

Transplant date: 30/12/2022

Plant density: 2 plants/m²

Irrigation water EC: 0.6 dS/m

Irrigation uniformity coefficient: 0.95

Save

Irrigation system

Single line Grouped lines

Dripper flow rate: 3 l/h

Distance between drippers: 0.5 m

Distance between line groups: 1.2 m

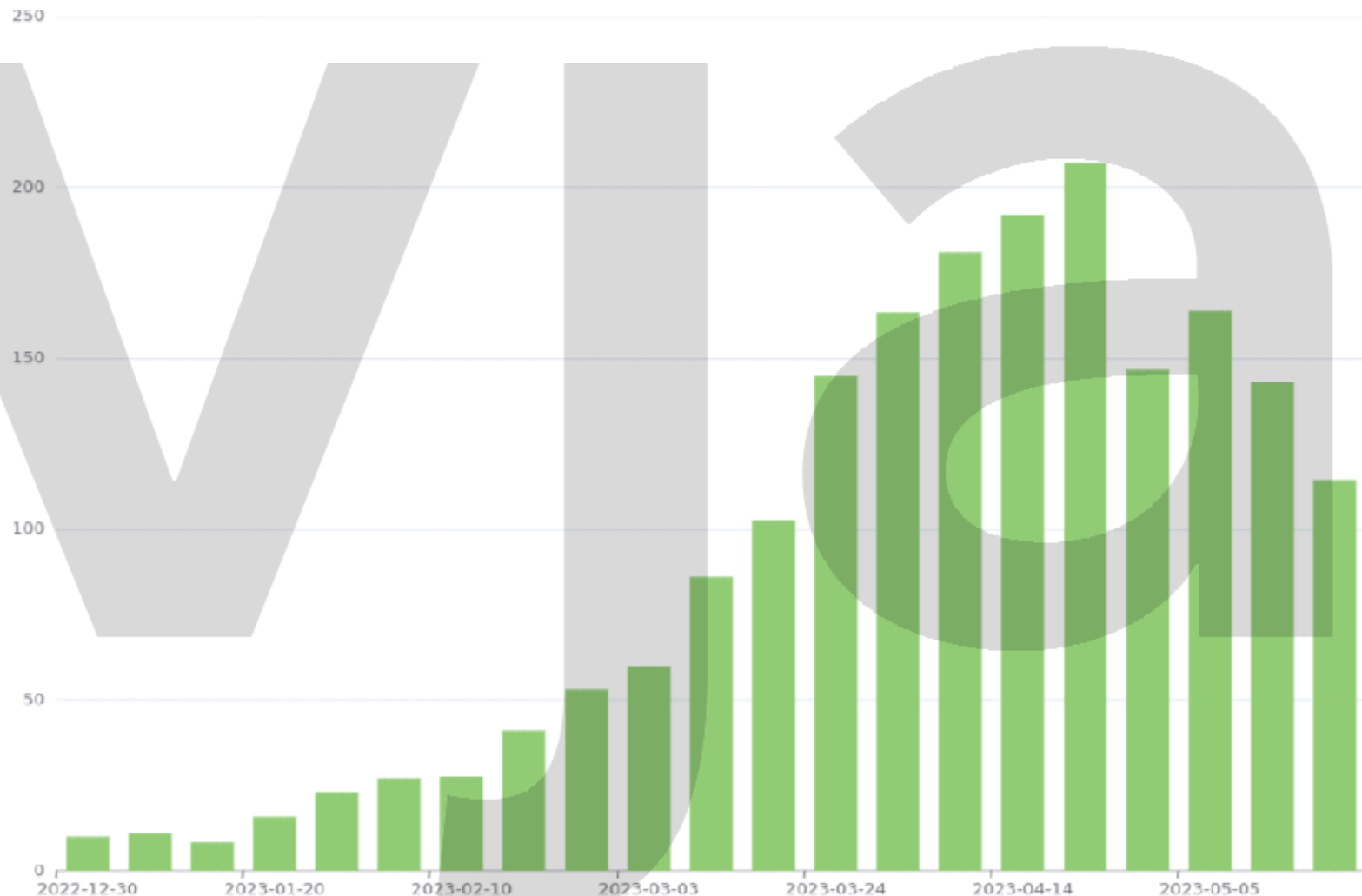
Number of lines in a group: 2

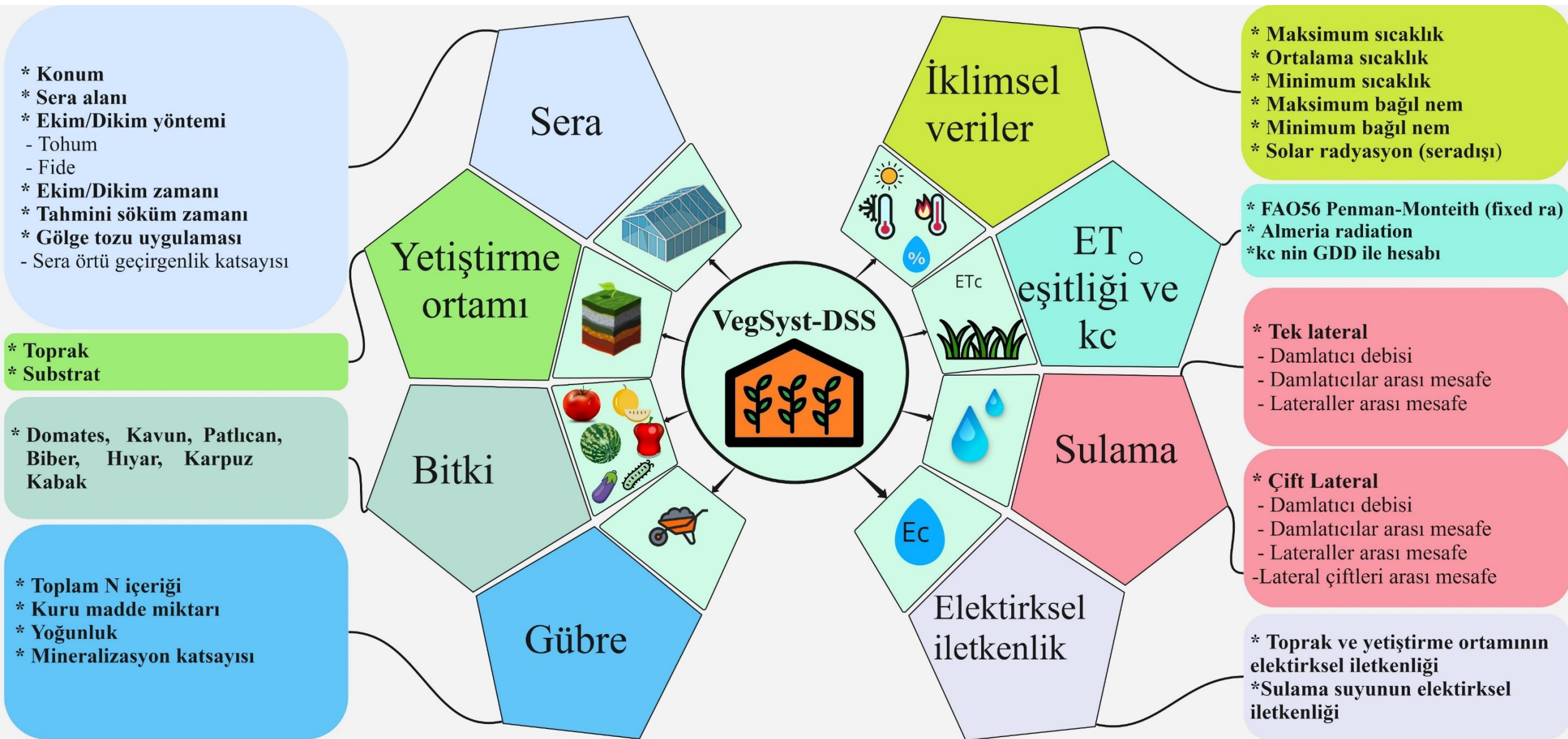
Flow rate density: 0.17 l/min m²

Save

Water requirements [7D]

Water requirements (mm) Irrigation minutes (min)





VEGSYST: KONFIGÜRASYONLARI

Crop

Transplant date: 30/12/2022

Expected harvest date: 25/05/2023

Root depth: 0.3 m

Save

Manure

Not used Used

Application date: 30/12/2022

Volume: m³ / ha

Source: Sheep **Add custom source**

Details

Save

Soil

Soil density: 1.4 t / m³

Nitrate N content: 0 mg N / kg soil

Organic matter: 0.89 %

Soil composition: Sand 84 % Clay 4.72 % Silt 11.28 %

Carbonate content: 30.58 %

Available P - Olsen: 94 mg P / kg soil

Exchangeable K: 109 mg K / kg soil

Exchangeable Ca: 2475 mg Ca / kg soil

Exchangeable Mg: 68 mg Mg / kg soil

Save

Irrigation system

Single line Grouped lines

Dripper flow rate: 3 l / h

Distance between drippers: 0.5 m

Distance between line groups: 1.2 m

Number of lines in a group: 2

Flow rate density: 0.17 l / min m²

Save

Output options

Unit measure of irrigation: mm minutes

Unit measure of nutrients: mmol / l kg / ha

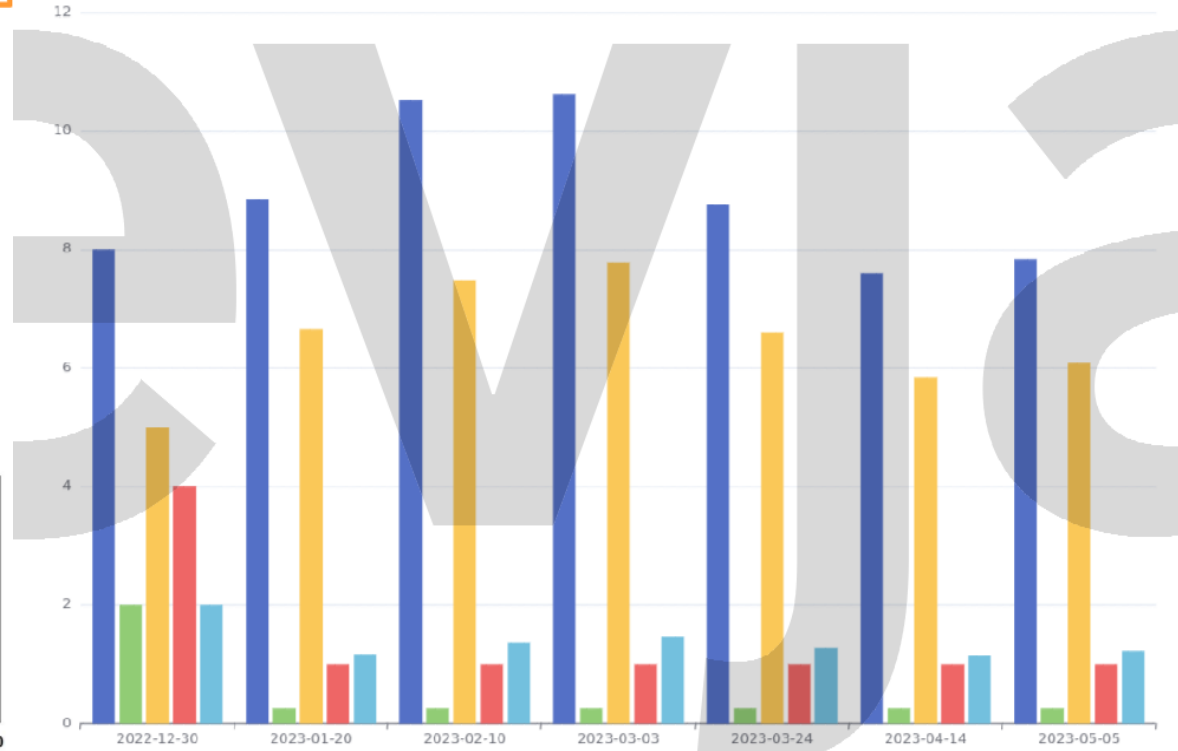
Save

GÜNLÜK SULAMA ÖNERİLERİ

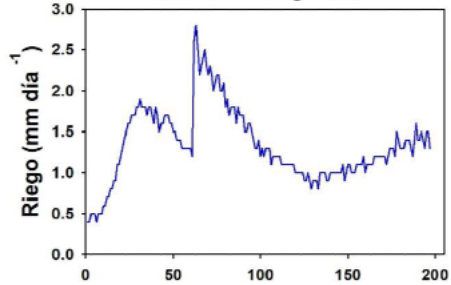
Gün	Dikimden sonra geçen gün (DSGS)	ETo (mm/gün)	kc	Sulama miktarı (mm/gün)	Sulama süresi (dakika/gün)
16/08/2022	1	1.9	0.2	0.4	4
17/08/2022	2	1.8	0.2	0.4	4
18/08/2022	3	1.9	0.2	0.5	5
19/08/2022	4	1.9	0.3	0.5	5
20/08/2022	5	1.8	0.3	0.5	5
21/08/2022	6	1.7	0.3	0.4	4

Concentrations [21D]
[mmol / l]

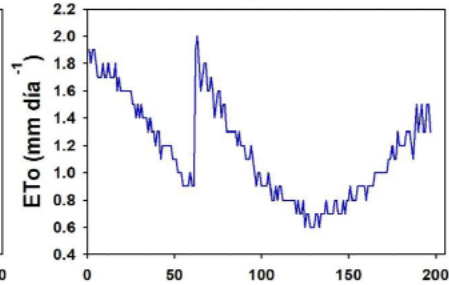
■ Nitrogen ■ Phosphorus ■ Potassium ■ Calcium ■ Magnesium



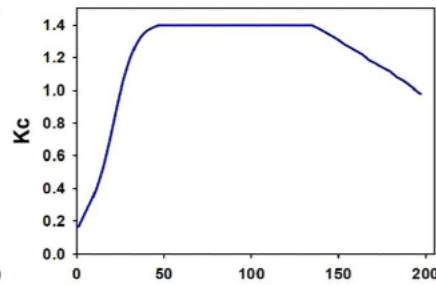
Volumen de riego diario



ETo



Kc



SIMULHYDRO: KONFIGÜRASYONLAR

Crop

Transplant date: 19/05/2023

Expected harvest date: 16/10/2023

Number of cultivation stages: 2

Tomato type: Round

Growing setup

Fertigation cycle: Open Semi-closed

Volume of the mixing tank: 8 L/m²

Volume of the water in the substrate: 5 L/m²

Cultivation area: 2000 m²

Crop cultivation stages

Stage start: 19/05/2023

Stage end: 31/07/2023

Leaching fraction: 0.3

Water mixing efficiency: 0.8

Nutrients

Concentrations	Macronutrient concentrations (mmol/L)										Micronutrient concentrations (umol/L)						EC (dS/m)	Neutrality test
	HCO ₃ ⁻	NO ₃ ⁻	NH ₄ ⁺	PO ₄ ³⁻	K ⁺	Ca ²⁺	Mg ²⁺	Na ⁺	SO ₄ ²⁻	Cl ⁻	Fe ²⁺	B ⁺	Cu ²⁺	Zn ²⁺	Mn ²⁺	Mo ²⁺		
Irrigation water	3.7	0.0	0.0	0.0	0.0	1.5	0.8	9.5	0.6	9.2	1.3	10	0.2	1.1	0.0	0.0	1.53	✓
Acidified irrigation water	0.6	10.0	0.0	1.0	6.7	4.0	0.8	9.5	2.5	9.2	1.3	10	0.2	1.1	0.0	0.0	1.53	✓
Flushing solution	0.0	10.0	0.0	1.0	6.7	4.0	0.8	9.5	2.5	9.2	1.3	10	0.2	1.1	0.0	0.0	1.53	✓
Reference nutrient solution	0.0	10.0	0.0	1.0	6.7	4.0	0.8	9.5	2.5	9.2	15	25	1	5	10	1	2.7	✓
Crop uptake	0.0	10.0	0.0	1.0	6.7	3.55	0.6	0.18	1.5	0.18	7	10	1	2	2	0.5		✓



İLETİŞİM BİLGİLERİ

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