



Technologies used in the industry for food traceability implementation



WHO ARE WE?

EMEX is a Civil Association
created in 1991



Our purpose is to coordinate, facilitate, improve, optimize and innovate the processes from production to export of Mexican mangoes, supporting producers, packers and exporters with programs that favor the Mexican mango industry.

CHALLENGES

- ▶ The sector is not accustomed to the use of technology
- ▶ Investment in hardware and software
- ▶ Low Internet availability
- ▶ Staff turnover



Traceability in Mango

- ▶ In 2002 EMEX started a traceability program in coordination with USDA and SAGARPA, in order to know the origin of the exported fruit quickly and accurately.

Two tools were used to develop this project:

A.- Origin and destination of fruit



B.- Traceability Software

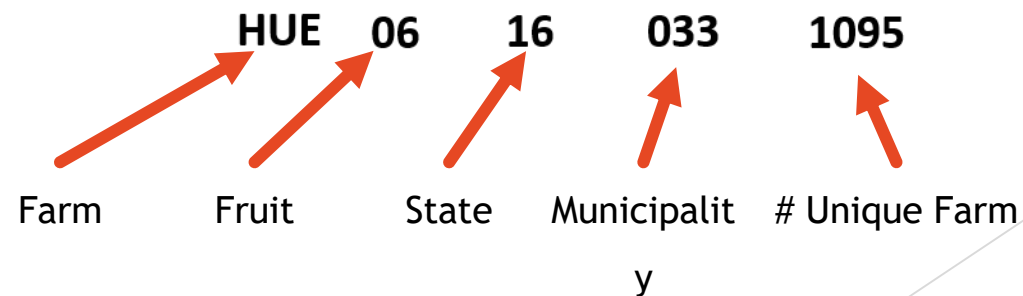


ORIGIN AND DESTINATION OF THE FRUIT

SENASICA registers and certifies the farms that meet the phytosanitary standards to be a candidate farm for export to the United States, granting a UNIQUE farm registration at the national level.

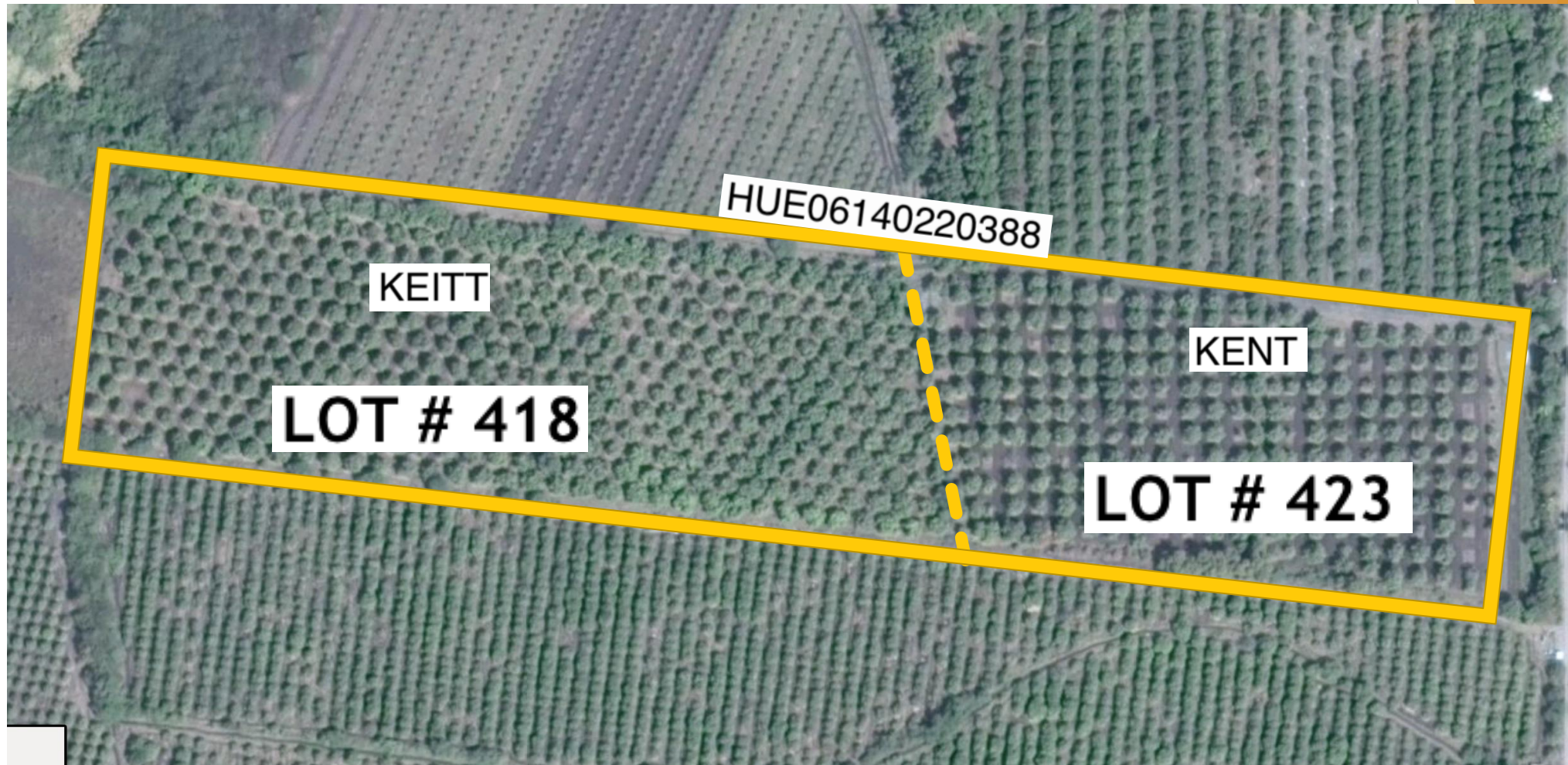
DATOS BASICOS DEL HUERTO			
Nombre del huerto:	LA BORONITA 4	No. de inscripción:	HUE06160331095
Ubicación:	EJIDO SANTA CASILDA	Superficie (ha):	7.50
Especies y variedades:	Kent	Estado fenológico:	FRUCTIFICACION - FLORACION
Nombre del propietario:	CARLOS ARRIAGA CALDERON		

The Register is composed of HUE06160331095



Batch number assignment

- ▶ The batch is a farm and variety identifier number, i.e., if a farm has 2 varieties, it will have a batch number assigned for each variety.



#Batch in all processes

- ▶ During all packing processes the fruit is perfectly identified with its batch number.

ALTA DE REZAGA

Id: Lote:

Cargas Correspondientes al Lote

Carga	Cajas	Peso de Caja	Fecha de Recepción
1044	170	20	12/04/2018
1063	170	20	12/04/2018
1073	170	20	13/04/2018
1095	170	20	13/04/2018
1116	170	20	14/04/2018
1153	170	20	16/04/2018

Cargas con Rezaga Asignada

Carga	Fecha	Proceso	Motivo	Cajas	Tamaño	Peso
1044	12/04/2018	LAVADO	GOLPEADO	2	20	40
1073	13/04/2018	LAVADO	GOLPEADO	1	20	20
1073	13/04/2018	EMPAQUE	GOLPEADO	6	20	120
1153	16/04/2018	LAVADO	GOLPEADO	2	20	40
1813	05/05/2018	LAVADO	GOLPEADO	3	20	60
1073	06/05/2018	EMPAQUE	GOLPEADO	5	20	100

ALTA DE PALLET

Pallet:

Logo:

Tratamiento: Calidad:

Fecha de Armado: Responsable:

Observaciones:

Destino:

Mixto:

DETALLE DE PALLET

Lote	Variedad	Madurez	Calibre	Tamaño	Marca de Caja	Tipo de Empaque	Cajas
174	TOMMY	1	12	4	MARATHON	CARTÓN	43
285	TOMMY	1	12	4	MARATHON	CARTÓN	158
339	TOMMY	1	12	4	MARATHON	CARTÓN	9

Total de Peso: Total de Cajas:

ALTA DE HIDROTERMICO

Id: Fecha:

Calidad:

Inspector:

Duración:

Observaciones:

ENTRADA

Hora: Minuto: Hora:

SALIDA

Hora: Minuto: Hora:

DETALLE DE HIDROTERMICO

Lote	Variedad	Cajas	Tamaño	Peso
317	TOMMY	30	20	600
207	TOMMY	45	20	900
256	TOMMY	85	20	1,700
283	TOMMY	45	20	900
008	HADEN	5	20	100
324	TOMMY	30	20	600

Embarque: 198

Posición Pallet

1	4680
2	4681
3	4682
4	4683
5	4684
6	4685
7	4686
8	4687
9	4688
10	4689
11	4690
12	4691
13	4692
14	4693
15	4694
16	4695
17	4696
18	4697
19	4698

Empaque:

DATOS FECHAS

Carga: Elaboración:

Tratamiento: Validez:

DATOS TRATAMIENTO

Duración: Producto: Larva:

CERTIFICADO

Folio: Fecha:

Observaciones:

Inspector: Frontera:

DATOS TRANSPORTE Y CHOFER

Transporte y Chofer:

Razon Social:

Tipo:

Chofer:

Licencia:

DATOS TRACTOR

Marca: Modelo:

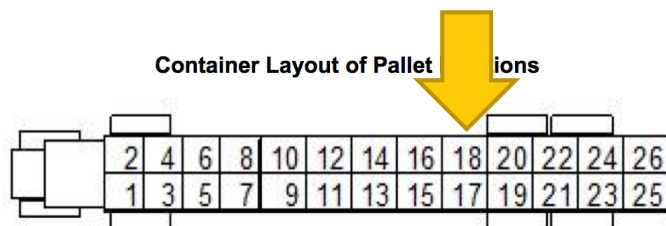
Placas: No. Economico:

Shipping Documentation

- Each of the shipments made in the system are accompanied by a set of documents that show in detail the arrangement of each pallet and the composition of each one of them.

Total Cajas de Pallet: 210				
Position: 14	TREATMENT: HWT	Pallet #: 5735		
Lot	Orchard	Variety	Boxes	Count
136	HUE06160330994	TOMMY	210	12
Total Cajas de Pallet: 210				
Position: 15	TREATMENT: HWT	Pallet #: 5738		
Lot	Orchard	Variety	Boxes	Count
136	HUE06160330994	TOMMY	210	10
Total Cajas de Pallet: 210				
Position: 16	TREATMENT: HWT	Pallet #: 5739		
Lot	Orchard	Variety	Boxes	Count
286	HUE06160550618	TOMMY	210	1
Total Cajas de Pallet: 210				
Position: 17	TREATMENT: HWT	Pallet #: 5741		
Lot	Orchard	Variety	Boxes	Count
136	HUE06160330994	TOMMY	210	12
Total Cajas de Pallet: 210				
Position: 18	TREATMENT: HWT	Pallet #: 5743		
Lot	Orchard	Variety	Boxes	Count
195	HUE06160330521	TOMMY	104	10
286	HUE06160550618	TOMMY	106	10
Total Cajas de Pallet: 210				

		Boxes per Lot				
Lot	Boxes	Orchard	GGN	STATUS		
136	1,555	HUE06160330994		Negativo		
181	333	HUE06160550291		Negativo		
188	9	HUE06160330780		Negativo		
190	301	HUE06160330145		Negativo		
195	565	HUE06160330521		Negativo		
203	128	HUE06160330139		Negativo		
241	502	HUE06160330689		Negativo		
278	82	HUE06160331292	4056186669995	Positivo		
286	540	HUE06160330618		Negativo		
290	364	HUE06160330749		Negativo		
293	163	HUE06160330640223		Negativo		
295	498	HUE06160331290	4056186669995	Positivo		
Total:		5,040				



PTI INITIATIVE

For a more detailed traceability control, the use of labels per case was implemented.

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FABRICA DE ETIQUETAS PTI

Menú GS1

GTIN ⋮

07503020350061

Producto	Variiedad	Calibre	Presentación	Descripción
MANGO	ATAULFO	12	4	FRESKA ORG.

Lote

002

Fecha

10/09/2018

Calidad

ORGANICO

GS1 128

(01)07503020350061(10)002

Cantidad

1

Leyenda de Fecha

Pack Date

Vista Preliminar



(01) 07503020350061 (13) 180910 (10) 002

MANGO/ATAULFO

12 / 4, ORGANICO

Product of México

PACKED BY: EXOTIKAMPO
EL ROSARIO SINALOA

PLU 9311



5 03020 35006 1

LOT
002

Pack Date
Sep10

26

PTI LABEL ELEMENTS



FRUIT TRACKING

- ▶ The traceability system allows us in a matter of seconds to know the entire history of the fruit, from the location of the farm to the border where the fruit entered and the name of the importer who bought it, variety, size, caliber and dates.

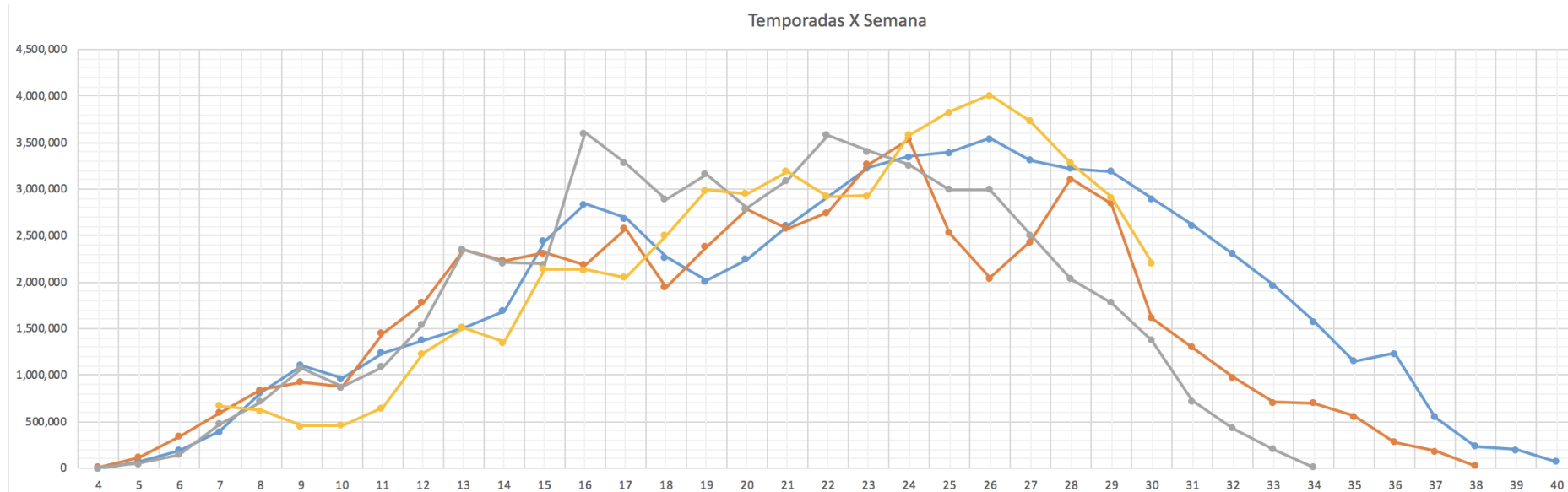
Registro del Huerto	Nombre del Huerto	Productor	Ciudad Huerto	Edo Huerto	Lote	Varietal	Calibre	No de Cajas	Tamaño de Caja	Fecha de Elaboracion	Fecha de Cargo	Empacador	Embarque	Frontera	Razon Social	Semana	Frontera	Estado	Tipo
HUE06160590884	EL COYUL	GALLEGOS REYES	TEPENAHUA	MICHOACA	243	HADEN	14	14	4	21/4/18	21/4/18	316	191	PHARR, TX.	AGUMAN EXPORT	16	TEXAS	MICHOAC	Bolas
HUE06160590884	EL COYUL	GALLEGOS REYES	TEPENAHUA	MICHOACA	243	HADEN	14	33	4	2/5/18	2/5/18	316	247	PHARR, TX.	AGUMAN EXPORT	18	TEXAS	MICHOAC	Bolas
HUE06160590884	EL COYUL	GALLEGOS REYES	TEPENAHUA	MICHOACA	243	HADEN	7	6	4	2/5/18	2/5/18	316	247	PHARR, TX.	AGUMAN EXPORT	18	TEXAS	MICHOAC	Bolas
HUE06160590884	EL COYUL	GALLEGOS REYES	TEPENAHUA	MICHOACA	243	HADEN	8	17	4	2/5/18	2/5/18	316	247	PHARR, TX.	AGUMAN EXPORT	18	TEXAS	MICHOAC	Bolas
HUE06160590884	EL COYUL	GALLEGOS REYES	TEPENAHUA	MICHOACA	243	HADEN	9	46	4	2/5/18	2/5/18	316	247	PHARR, TX.	AGUMAN EXPORT	18	TEXAS	MICHOAC	Bolas
HUE06160590884	EL COYUL	GALLEGOS REYES	TEPENAHUA	MICHOACA	243	HADEN	10	80	4	2/5/18	2/5/18	316	251	PHARR, TX.	AGUMAN EXPORT	18	TEXAS	MICHOAC	Bolas

LISTADO DE EMBARQUES POR LOTE: 243

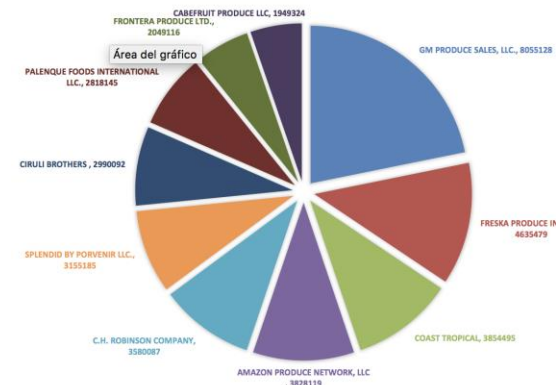
Datos Generales del Lote			Rezaga Capturada del Lote				
Huerto	Varietal	Estado	FSCIT	Fecha	Cajas	Peso	Frontera
EL COYUL	HADEN	MICHOACAN	185	19/04/2018	5040	20160	PHARR, TX.
Registro HUE06160590884	Productor GALLEGOS REYES ELIZEO		191	21/04/2018	5040	20160	PHARR, TX.
GGN	Status NEGATIVO		247	02/05/2018	5040	20160	PHARR, TX.
			251	02/05/2018	5040	20160	PHARR, TX.
TOTAL DE CAJAS:		106 Bxs					
TOTAL DE PESO:		2,120 Kgs					

Leveraging Information

- ▶ The information collected from the system allows us to generate an annual and weekly crop forecast report, providing associates with real information about what is happening in their environment.

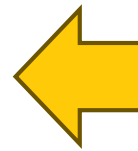
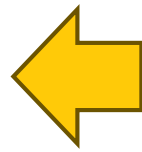


Estados Productores de Mango							
Estado	2014	2015	2016	2017	2015 vs 2014	2016 vs 2015	2017 vs 2016
MICHOACÁN	12,927,231	14,535,183	14,584,825	14,602,228	12.44%	0.34%	0.12%
SINALOA	8,860,431	15,665,407	15,911,790	14,190,833	76.80%	1.57%	-10.82%
NAYARIT	9,739,665	7,000,031	11,935,069	12,950,955	-28.13%	70.50%	8.51%
OAXACA	8,018,454	9,080,693	8,321,559	7,533,734	13.25%	-8.36%	-9.47%
CHIAPAS	6,073,415	5,802,765	6,032,151	6,113,467	-4.46%	3.95%	1.35%
JALISCO	2,336,446	2,786,486	3,215,696	4,697,137	19.26%	15.40%	46.07%
GUERRERO	1,558,568	1,665,737	1,975,099	2,794,807	6.88%	18.57%	41.50%
COLIMA	333,565	351,212	605,473	663,679	5.29%	72.40%	9.61%
Total	49,847,775	56,887,514	62,581,662	63,546,840	14.12%	10.01%	1.54%



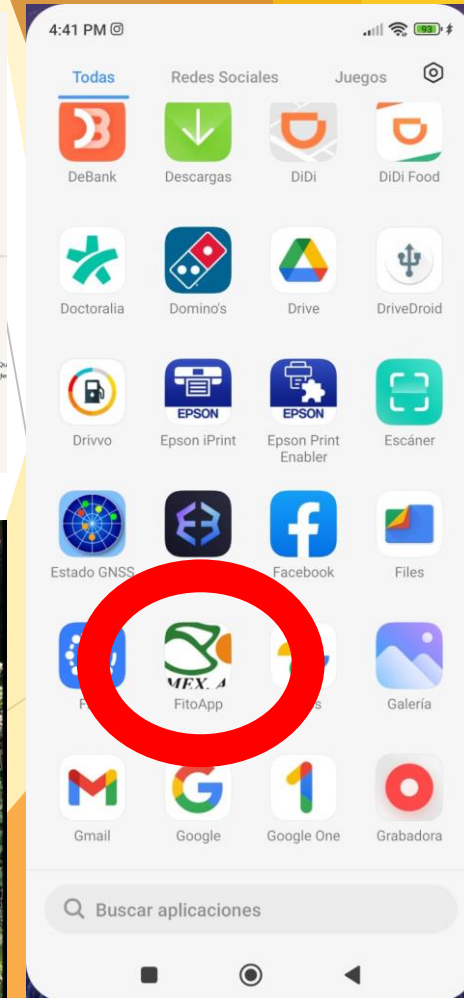
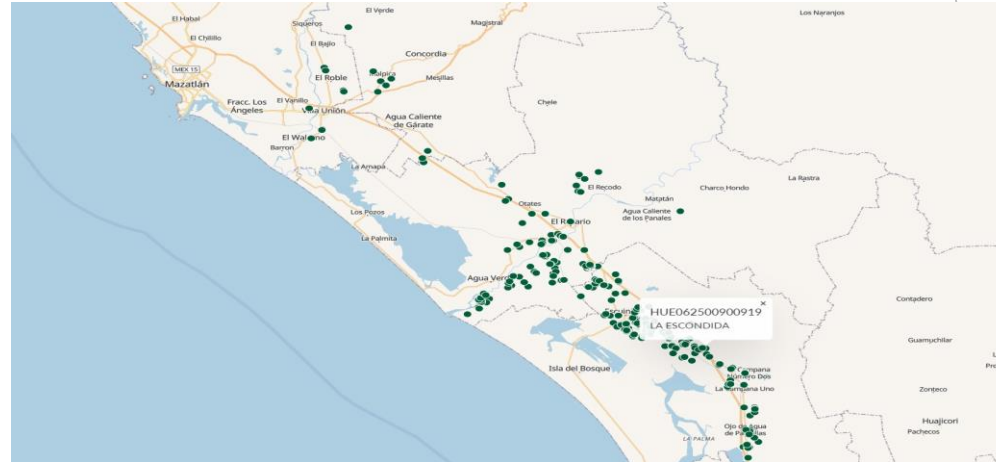
Advances in Technology

- ▶ We adopted for our traceability system a hybrid mechanism that works locally (without internet) and when the equipment has internet, it synchronizes to our server.



Field

- ▶ We are currently developing an app for the control of field activities, the information collected complements the traceability of packaging and field.



¡THANK YOU!

EMEX Contact at Social Networks:



EMEX, A. C.



@EMEXAC

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