

A wide field of golden wheat under a dramatic, cloudy sky at sunset or sunrise. The sky is filled with dark, heavy clouds, with a hint of orange and yellow light from the sun setting or rising on the horizon. The wheat field is in the foreground, stretching to the horizon.

CONSERVATION AGRICULTURE

Experience from Romania

AGENDA

01 | JD Agro Cocora og Notill Historie

02 | Hvad er Conservation Agriculture

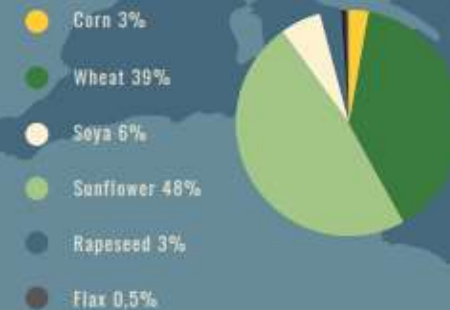
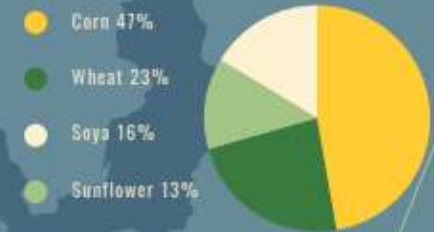
03 | Erfaringer fra Rumænien

04 | Salg af CO2 reduktion



JD AGRO COCORA

- ⊗ Dansk ejet selskab med 55 aktionærer
- ⊗ Total operation 2022 - 15.100 ha
- ⊗ Nedbør Cocora 525 mm -> Amzacea 480 mm
- ⊗ Første år NoTill 2018 på 12% af arealet
- ⊗ I 2022, Conservation Agriculture på 97% af arealet



JD AGRO COCORA

Afgrøde-valg

Yield-goals

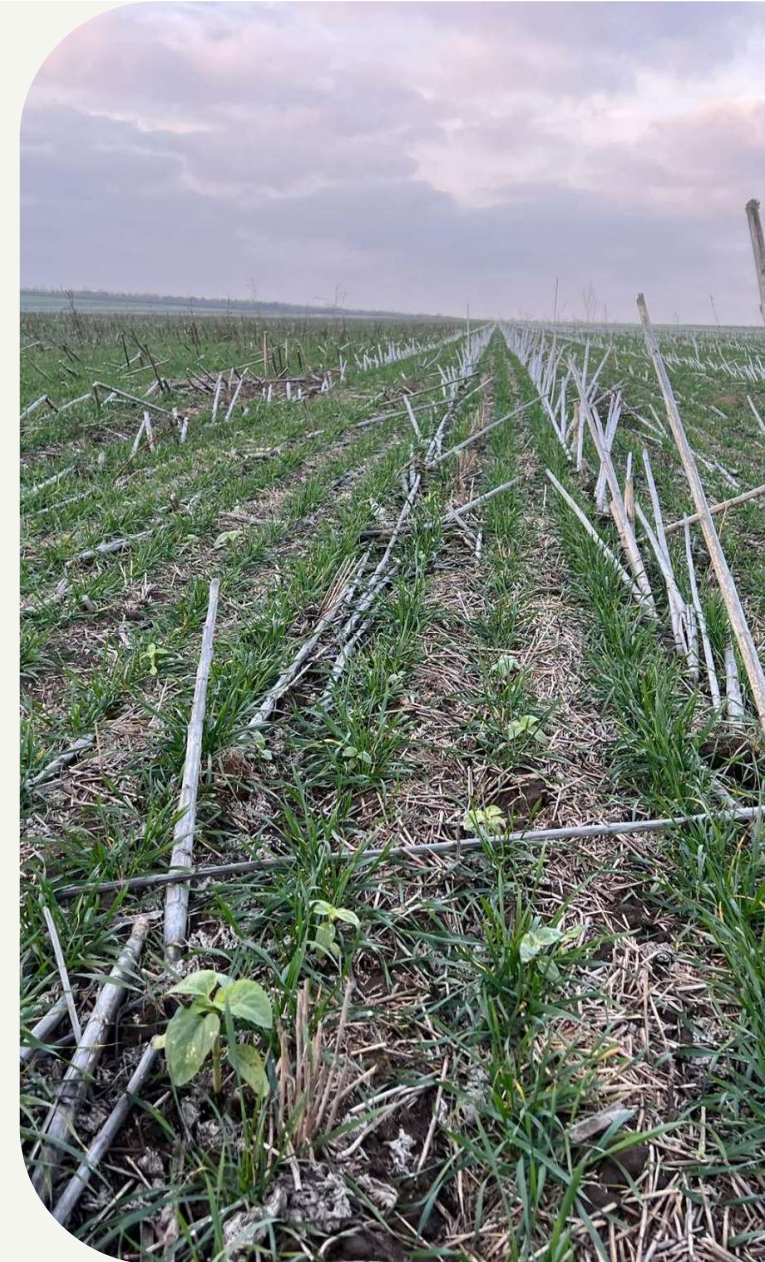
- ⊙ 1/3 Hvede **Cocora 6,2 t/ha – Amzacea 5,5 t/ha**

- ⊙ Cover Crop **Vikke, Havre, Radiser**

- ⊙ 1/3 Majs **Cocora 9.8 t/ha – Amzacea 7,1 t/ha**

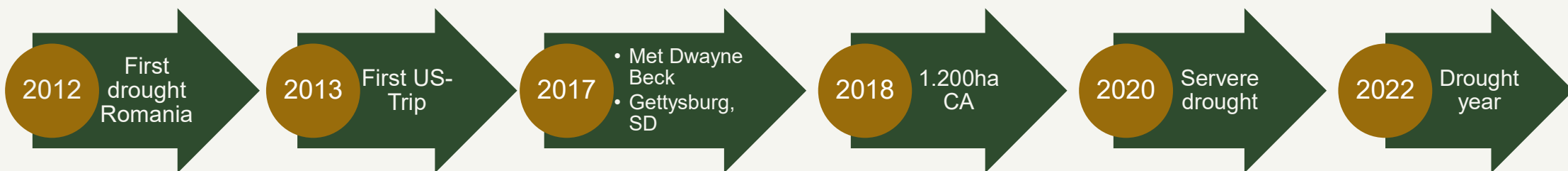
- ⊙ 1/3 Olie-Protein
 - Soya **Cocora 2,6 t/ha**
 - Solsikker **Cocora 2,5 t/ha – Amzacea 2,7 t/ha**
 - Raps **Cocora 3,5 t/ha – Amzacea 3,0 t/ha**

- ⊙ *Herudover tester vi vinterbyg, vårbyg, sorghum etc.*



HISTORIEN, hvorfor vi begyndte NoTill / CA

- ⊗ Målsætning om stabile udbytter og mindre følsomme i tørke år
- ⊗ Færre omkostninger pr. ha (*100 Euro/ha*)
- ⊗ Dyrke flere hektar med samme antal medarbejdere





CONSERVATION AGRICULTURE

01

CONSERVATION AGRICULTURE

- ⊙ Conservation Agriculture (CA) is a farming system that can prevent losses of arable land while regenerating degraded lands.
- ⊙ It promotes maintenance of a permanent soil cover, minimum soil disturbance, and diversification of plant species.
- ⊙ It enhances biodiversity and natural biological processes above and below the ground surface, which contribute to increased water and nutrient use efficiency and to improved and sustained crop production

4 principper i vores NoTill system:

- ⊙ **Minimal disturbance**
- ⊙ **Soil Cover**
- ⊙ **Diversity of plants**
- ⊙ **Living roots in the soil**



CONSERVATION AGRICULTURE



Minimal soil-disturbance

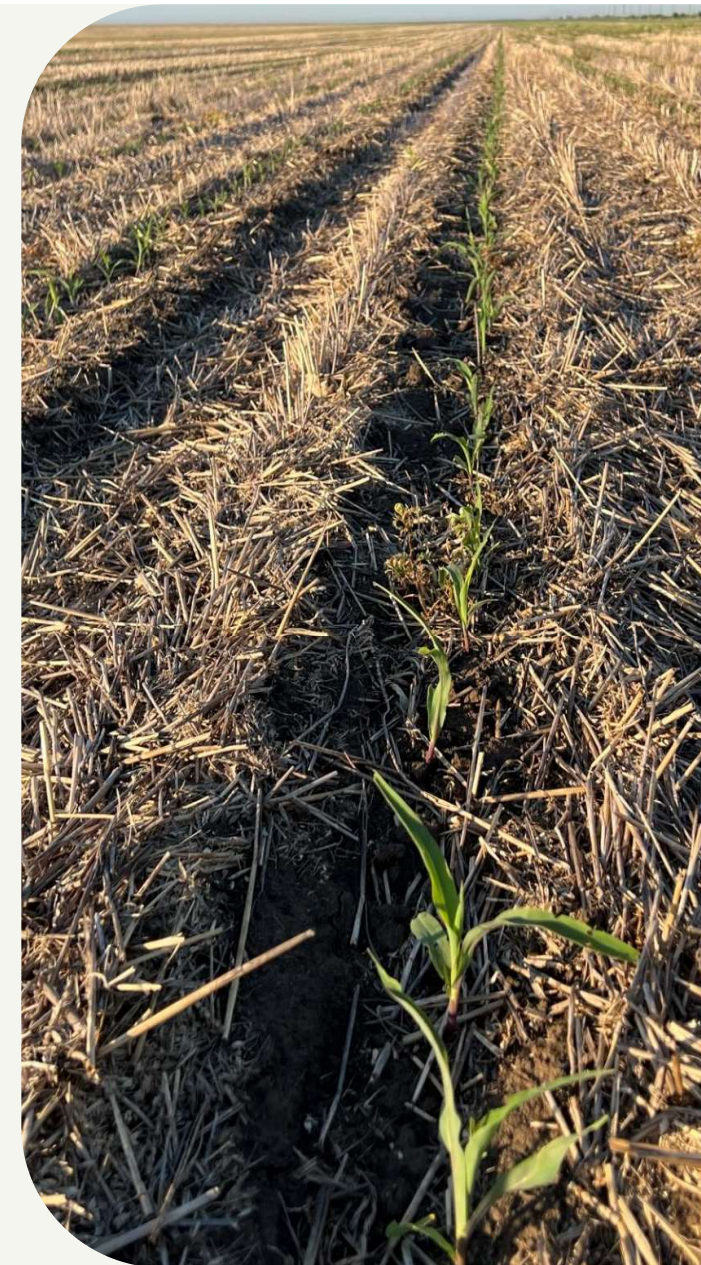
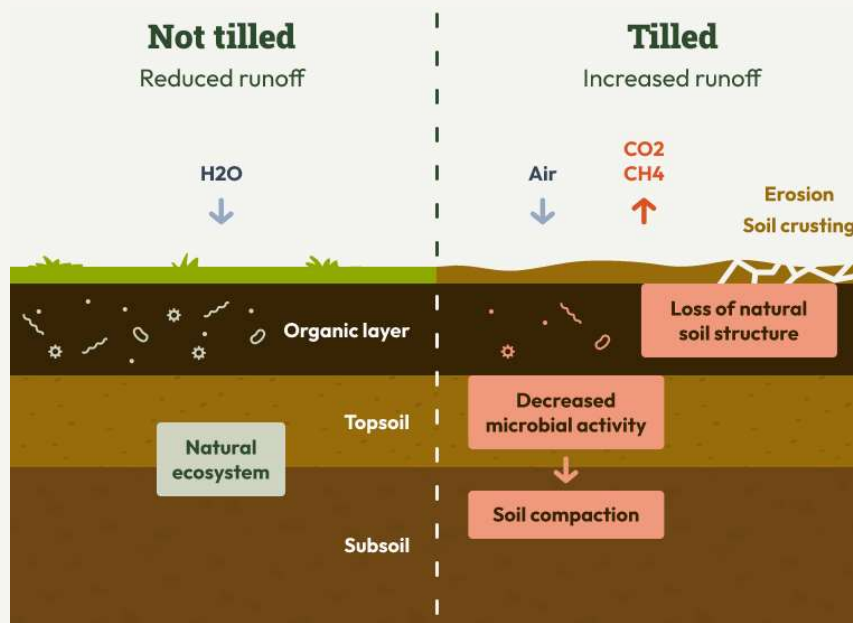
⊙ **Direkte såning**



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Soil cover

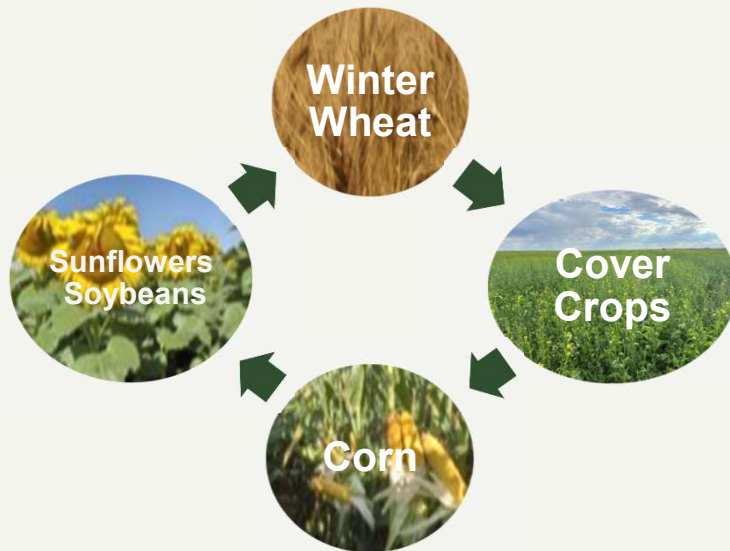
- ⊗ Jorden skal være beskytte såvel som vores hud
- ⊗ Øger vand infiltration
- ⊗ Mindsker fordampning
- ⊗ +100 mm mere plantetilgængeligt vand



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Diversitet i afgrøde-valg.

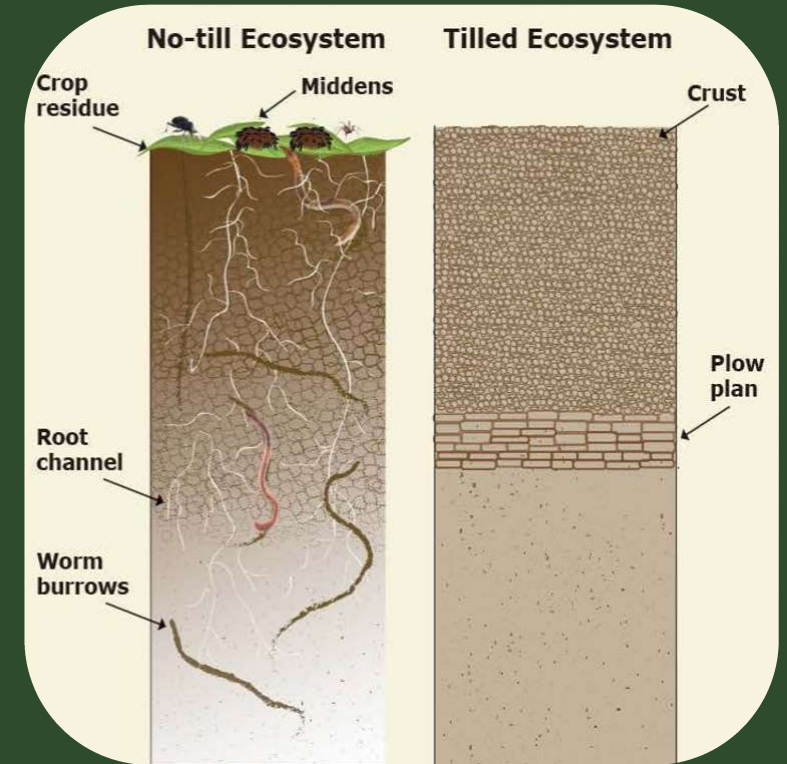
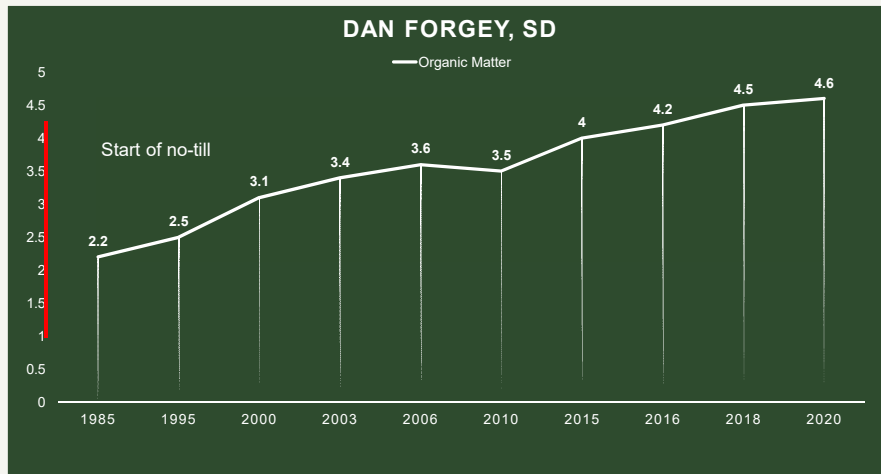
- ① Crop rotation er vigtigt for at mindske sygdomme såvel som at opbygge beskyttende halm-lag
- ① Min 75% high-residue afgrøder (majs, hvede, byg, havre)
- ① Jordens biologi har brug for forskellige afgrøder, såvel som konstant liv over jorden.



CONSERVATION AGRICULTURE

Living roots in the soils

- ⊙ Jordens biologi under jorden skal arbejde for os
- ⊙ Levende rødder fodrer livet under jorden
- ⊙ Kulstof opfanget fra luften frigives som sukker ved rodspidsen
- ⊙ Øger jordens organiske indhold



CONSERVATION AGRICULTURE

⊗ Living roots in the soils

⊗ Benefits of Organic Matter

Nutrient Supply

- ⊗ 1% of OM kan frigive:
- ⊗ 22 - 32 kg N/ha
- ⊗ 10 - 14 kg P/ha
- ⊗ 2 - 3 kg S/ha

Water Holding Capacity

- ⊗ Organic Matter er som en svamp
- ⊗ Kan indeholde op 90% af egen vægt i vand
- ⊗ Vil Du tørre vand op med en mursten – eller en svamp



This is how a long term no-till soil looks



(Derpsch, 2005)





ERFARING FRA RUMÆNIEN

02

ERFARING FRA RUMÆNIEN

⊙ 2018 – Første år 1.200 ha

⊙ Vi startede med at fejle

- Cover Crops lod vi gro hele efterår, vinter og forår
- Startede med majs som første afgrøde i NoTill systemet

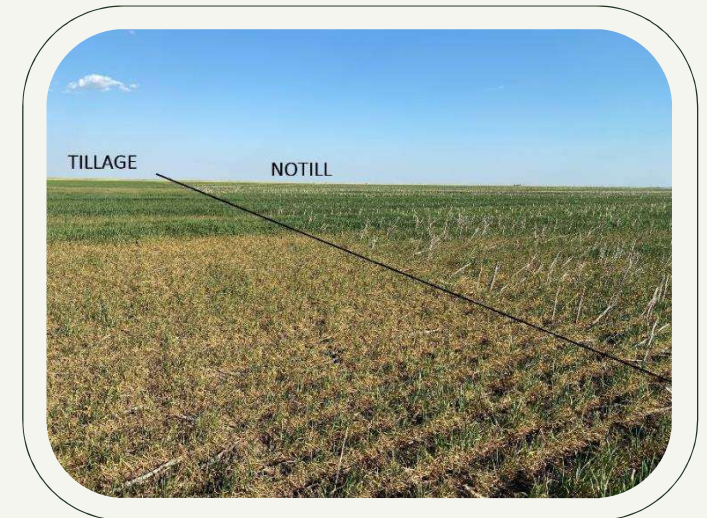
⊙ Result: vi var heldige der kom regn, udbytterne var tilsvarende harvet 9,9t/ha



ERFARING FRA RUMÆNIEN

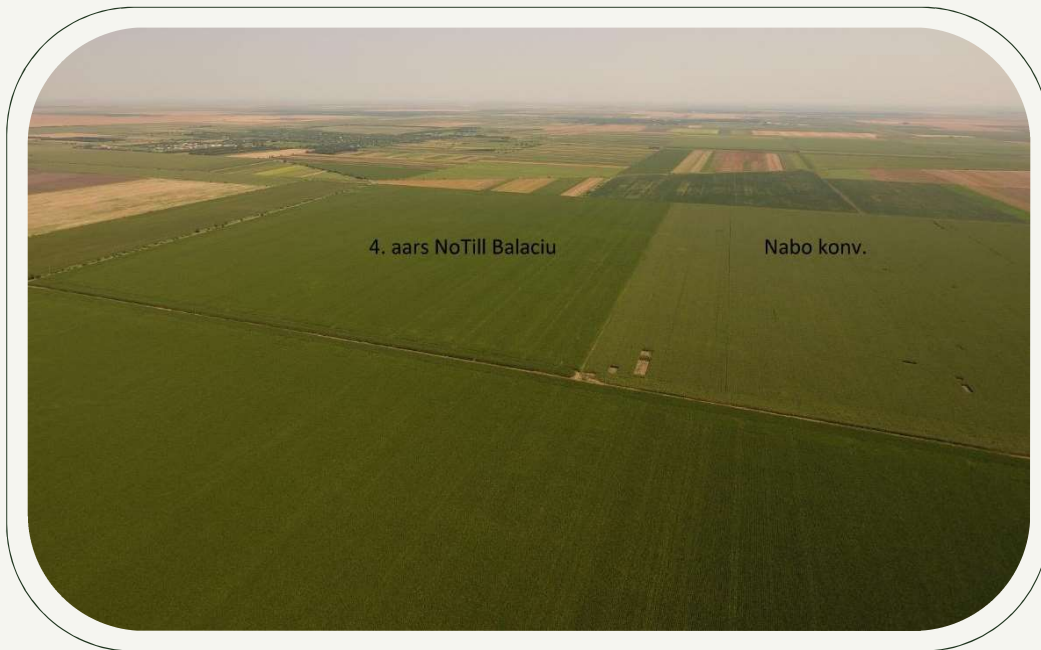
⊙ 2020 – Tørke år

- ⊙ 8.550 ha NoTill (60%)
- ⊙ Vinterhvede, vores NoTill overlevede tørken, harvede marker gik ud
- ⊙ Markant forskel i majs, 5t/ha vs. 700 kg/ha – gns 2.8t/ha.



ERFARING FRA RUMÆNIEN

- ⊙ **2021 – Nedbørsrigt år men tør sommer**
 - ⊙ 12.840ha NoTill (90%)
 - ⊙ Hvede ramt af lejesæd pga. regn, udbytte 6,5 t/ha
 - ⊙ Bedste udbytte i majsmarker i CA siden 2018, gns. udbytte 11,3 t/ha



ERFARING FRA RUMÆNIEN



2022 - Tørke

- ⊗ 95% NoTill
- ⊗ Majs 5.5 t/ha
- ⊗ Hvede 5.3 t/ha
- ⊗ Raps 3.3 t/ha
- ⊗ Solsikker 2.6 t/ha
- ⊗ Soya 1.3 t/ha



ERFARING FRA RUMÆNIEN

	2017				2022			
HECTARES OPERATED →	9.780 ha				15.100 ha			
TRACTOR HP →	4.290	hp	0,44	hp/ha	4.395	hp	0,29	hp/ha
TRACTOR HOURS →	14,880	hours	1,52	t/ha	14,879	hours	0,99	t/ha
FUEL CONSUMPTION →	774.119	liter	79,2	l/ha	638.895	liter	42,3	l/ha
FERTILIZER →	5731	tons	586	kg/ha	6.354	tons	421	kg/ha





ERFARING FRA RUMÆNIEN

- ⊗ **Lavere diesel forbrug markbrug**
- ⊗ **Mindre maskin behov**
- ⊗ **Lavere timer/ha**
- ⊗ **Lavere kemi-forbrug**
 - ⊗ **Mindre ukrudts-tryk**
 - ⊗ **På sigt mindre svampe- og skadedyrs-tryk**
- ⊗ **Lavere udsæd i hvede:**

⊗ 2017	- 110 - 180kg/ha
⊗ 2022	- 50 - 110 kg/ha



A wide-angle photograph of a vast field of golden wheat in the foreground, stretching to a flat horizon. The sky above is filled with large, dark, textured clouds, with a soft glow of light from the setting or rising sun visible near the horizon, casting a warm, golden light on the scene.

CO2 OG SALG

03

CO2 og Merpris for produkter

⊗ Agreena

⊗ Salg af 25% 2021 Certificates @ 25Euro/certificate

⊗ Expur

⊗ Salg af 3.000tons solsikker @ 20\$/to solsikker

⊗ Bunge, Cargill, Kalizea



A wide-angle photograph of a vast field of golden wheat stretching to the horizon. The sky is filled with dark, heavy clouds, with a soft glow of light breaking through near the horizon, suggesting a sunset or sunrise. The overall mood is serene and contemplative.

CONCLUSION

04



TAKE AWAY'S

- ③ Conservation Agriculture is the future of Agriculture in dry-land farming
- ③ Stable production with changes in the weather
- ③ Lower your cost and need of investment
- ③ Safer business environment
- ③ Possibility to obtain better contracts for your products

A wide-angle photograph of a vast field of golden wheat in the foreground, stretching to a flat horizon. The sky above is filled with large, dark, textured clouds, with a soft glow of light from the sun just below the horizon, creating a dramatic and atmospheric scene. The overall color palette is muted, with greens and yellows in the field and dark blues and greys in the sky.

**Thank you for
your attention!**