



3. MARK ONLINE FAIRWAY partner: Rikke Krogshave Laursen (SEGES, DK)		
Brief description		
Mark Online is the most widely used DST/ Farm Management Information System for fertilizer planning, optimization and documentation in Danish crop production. It covers all aspects of crop management including soil tillage and crop protection.		
Contaminants covered (e.g. nitrate, pesticides etc.)	N, P, K, Pesticides (active ingredients)	
Intended end users (e.g. farmer, water quality manager, policy maker)	Farmers and advisors.	
Level of expertise and/or training required	Trained farmers and advisers	
Geographical resolution (e.g. field, catchment, national)	Field scale. Output scales to farm level.	
Temporal resolution (e.g. daily, annual, long-term).	Daily and annual	
Real-time component (e.g. live weather data, soil moisture data feeds etc.)	None	
Number and type of mitigation measures included	Mitigation according to economical optimisation with respect to national rules and regulations	
Platform (e.g. paper-based tool, phone app, bespoke software).	Bespoke software Danish	
Frequency of updates	Updated whenever needed (weekly)	
Cost/availability	From 180 Euro per Year Commercialised software, https://www.seges.dk/da-dk/software/plante	
Number of users or number of copies distributed/downloaded/purchased	Actively used on 2.2 mio ha = 85 % of all land in DK (25,000 farms) by app 350 advisers and 2,500 farmers	
Links to demo material and other relevant information (e.g. user guides).	https://www.seges.dk/da-dk/software/plante In Danish	
Additional comments		

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Input data required to run the DST	Field data – livestock data – fertilizer – pesticides - precipitation - prices	
Outputs (including links to water quality and economic or financial aspects)	Use of nutrients and pesticides according to legislation and key figures. Indirectly good water quality	
Age/provenance of supporting data used to develop the DST	SEGES R/D for 30+ years, Landsforsøgene ®	
Country-specific calibration or data requirements (including restrictions on use)	Legal pesticides and quotas for nitrogen application. Minimum utilization of nitrogen in animal manure	
Details of validation and testing	Tested in real life on 80 percent of the farms and 100 per cent reporting to the authorities.	
Date developed/released (or planned release date)	First version developed approx. 1991. Current version released January 2017	
Author/developer names and affiliations	SEGES, Digital. SEGES, Landbrug & Fødevarer F.m.b.A., Agro Food Park 15, 8200 Aarhus N, Denmark, www.seges.dk	
Member state(s) where developed	DK	
Member State(s) where currently used	DK	
Key publication references (including url)	Jens Bligaard, 2014. Mark Online, a Full Scale GIS-based Danish Farm Management Information System, Int. J. Food System Dynamics 5 (4), 2014, 190-195. www.fooddynamics.org	

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Any other useful information (e.g. screenshots of DST input/outputs)

The N-quota is reported.

Kontroller				N-regnskab			
Hamonikravet er overholdt				Overskridelse af N-kvoten	-1,633 kg		-44.6 kg/ha
N-kvote overholdt				Overdraget forbrug af N	kg		
Lagerreglen er overholdt				Forbrug af N i handelsgødning	3,369 kg		92.0 kg/ha
Interne overførsler stemmer				Max forbrug af N i handelsgødning	5,003 kg		136.5 kg/ha
Hamoni				Forbrug af N (udnyttet) org. gødning	2,045 kg		55.8 kg/ha
Hamoniareal:	36.64 ha			P-regnskab			
Dyreenheder og hamoni				Pt for alle hamoniarealer:			Nej
Forbrug af DE:	32.77 DE	52.73 Max		N-kvote			
Lageropbygning	1.21 DE			N-prognose:	-71 kg		
Forbrug af DE pr. ha:	0.89 DE/ha	1.44 Max		Anvendt forhøjet udbytte	0.0 kg		Nej
Forbrug af total N i org. gødning	86.3 kg/ha	Max		N-kvote efter korrektioner	7,048 kg		192.3 kg/ha
				Max N i handelsg. + N i org. gødning	6,394 kg		174.5 kg/ha
				Planlagt N-behov	7,750 kg		211.5 kg/ha