



2. ISIP FAIRWAY partner: Linda Tendler (Landwirtschaftskammer Niedersachsen, DE)		 wissen wie's wächst
Brief description		
Informationssystem Integrierte Pflanzenproduktion (ISIP - Information system of integrated plant production) is a process-oriented model which simulates N-mineralisation in the soil and adjusts real-time recommendation for N-fertilization in winter wheat accordingly. Input variables are soil texture, crop rotation, yields quality expectations, prices of N-fertilizers and the wheat product, irrigation and depth of groundwater table. The required N-fertilization is calculated by the sum of N-withdrawal + N in the soil which is not crop available - Nmin - N-mineralisation.		
Contaminants covered (e.g. nitrate, pesticides etc.)	Nitrate	
Intended end users (e.g. farmer, water quality manager, policy maker)	Farmers and advisors.	
Level of expertise and/or training required	Moderate	
Geographical resolution (e.g. field, catchment, national)	Field scale	
Temporal resolution (e.g. daily, annual, long-term).	Daily	
Real-time component (e.g. live weather data, soil moisture data feeds etc.)	Precipitation, temperature, radiation, evaporation	
Number and type of mitigation measures included	Optimized fertilization planning resulting in reduced amounts of N applied	
Platform (e.g. paper-based tool, phone app, bespoke software).	Bespoke software Available in German only	
Frequency of updates	Frequent updates during the development phase of the model; currently no updates planned.	
Cost/availability	Available to farmers and agricultural advisors in several German states for a small fee.	
Number of users or number of copies distributed/downloaded/purchased	From January - August 2017 c.18.000 hits on online-platform	
Links to demo material and other relevant information (e.g. user guides).	https://www.isip.de/isip/servlet/isip-de Available in German only	
Additional comments	Practical implementation; N-fertilization recommendation by ISIP is integrated into field experiments of different authorities for agriculture.	

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Input data required to run the DST	<ul style="list-style-type: none"> • Site conditions (Field location, soil mineral nitrogen in spring, soil type and soil textures) • Agricultural management (crop rotation, sowing date, sowing density, irrigation, expected yield, ...) 	
Outputs (including links to water quality and economic or financial aspects)	Model results and reference measurements of: <ul style="list-style-type: none"> • current crop development (+N-uptake + leaf area index) • soil water content and drought stress • amount of nitrate leached during winter • recommendation for amount and timing of N-fertilization • climate and weather data 	
Age/provenance of supporting data used to develop the DST	Data derived from experimental stations of Lower Saxony (ca. 2006-2011)	
Country-specific calibration or data requirements (including restrictions on use)	Link to weather data is country specific.	
Details of validation and testing	Interaction between soil water and plant productivity validated with long term data of reference years. N-withdrawal validated with long term data of field trials of 12 different sites within Lower Saxony.	
Date developed/released (or planned release date)	2011	
Author/developer names and affiliations	Dr A. Ratjen (CAU) Dr E. Reinsdorf (LWK)	
Member state(s) where developed	DE	
Member State(s) where currently used	DE	
Key publication references (including url)	https://www.isip.de/isip/servlet/isip-de	

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

The screenshot shows the ISIP web interface for 'Stickstoffdüngung in Winterweizen'. It includes a map on the left and a form on the right for entering data.

Eintrag bearbeiten

Neuen Prognosestandort mit Klick in die Karte oder durch Ortsangabe auswählen

PLZ / Ort:

Schlagname:

Längengrad:

Breitengrad:

Koordinaten übernehmen

Aussaatdatum:

Niederschlagsverteilung anpassen

Jan	Feb	März	Apr	Mai	Jun	Juli	Aug	Sep	Okt	Nov	Dez
50	37	51	42	53	65	62	68	55	50	51	53
50	37	51	42	53	65	62	68	55	50	51	53

Bodenstruktur

Bodentexturauswahl: ☒ Direkte Eingabe ☐ Eingabe Bodenzahl

Bodenzahl:

Bodentextur 0-30:

Bodentextur 30-60:

Bodentextur 60-90:

Bodentextur ab 90:

Übersicht der Bodenartuntergruppen

Figure 1: Part of the ISIP input screen

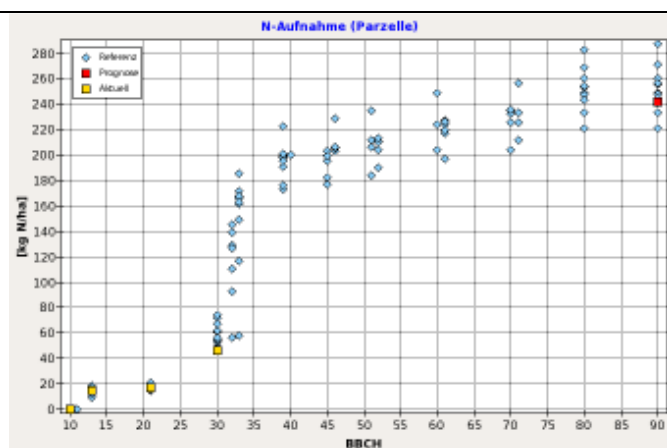


Figure 2: Modelled N-uptake by the wheat crop in March (yellow squares) in comparison to the reference values (blue diamonds) and the final prognosis (red square)

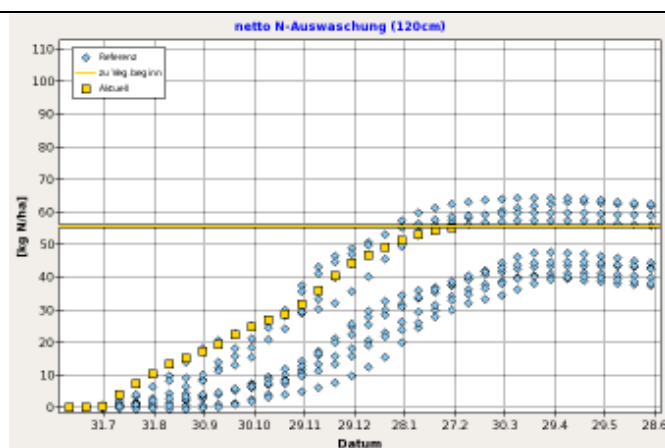


Figure 3: Modelled amount of leached during winter (yellow squares) in comparison to the reference values (blue diamonds)