


EXEMPLARY DEMONSTRATION NETWORK FOR CULTIVATION AND UTILIZATION OF LUPINS "Lupin-Network"



**Experiences of the LUPIN-NETWORK/
Leverage points for legume based food- & feed chains**

Mecklenburg Vorpommern
Landesforschungsanstalt für Landwirtschaft und Fischerei

partner:

- Landwirtschaftskammer Niedersachsen
- Landwirtschaftskammer Nordrhein-Westfalen


SACHSEN-ANHALT
Landesanstalt für Landwirtschaft und Gartenbau

LELF
Landesamt für Ländliche Entwicklung, Landwirtschaft und Flurneuordnung

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aufgrund eines Beschlusses des Deutschen Bundestages





Foto: Priepe, LFA MV

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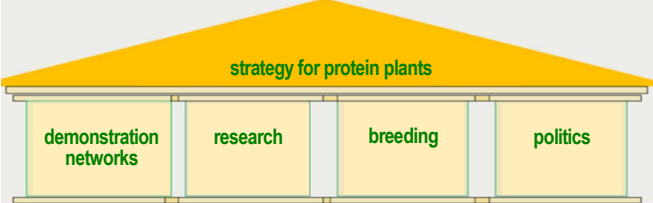


aufgrund eines Beschlusses des Deutschen Bundestages

LUPIN-NETWORK

– Targets –





- using ecosystem functions and resources prevention of legume cropping
- protein supply from native production to support regional value chains

- supporting the expansion of lupin cultivation and utilization
- transfer knowledge between research, consultancy and practice
- building a nationwide 'lupin-network' along relevant value creation chains




Foto: Mirko Runge, Saatzeit Steinach GmbH & Co KG; A. Priepe, LFA MV; Brotbüro GmbH

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LUPIN-NETZWERK

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LUPIN-NETZWERK

– Structure –

data farm
 demonstration farm
 knowledge centre

- **54 farms in 6 federal states**
 - 21 demonstration farms
 - 33 data farms
 - 31 conventional
 - 23 organic
- **value chains**
 - breeding/ seeds
 - food
 - cattle/ dairy cow
 - pig
 - sheep
 - poultry is missing

<http://lupinen-netzwerk.de/netzwerk/network-player/uebersichtskarte>

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LUPIN-NETZWERK

– Realization –

best-practice demonstration

- seed production and cultivation
- processing and utilization of lupin in conventional and organic livestock breeding and for human nutrition

data acquisition of lupin cultivation

- economic viability
- crop rotation planner
- preceding crop effect
- entire ecosystem activity
- feeding value

Maßnahmen	Status (qm)	Greening (t)	Greening (t)	Leguminosität
Standard	2013	Zugfrucht	Zugfrucht	Zugfrucht
Kulturarten	2013	Zugfrucht	Zugfrucht	Zugfrucht
Wintergerste	260	268	260	220
Winterweizen				
Sommergerste	250	250	250	250
Winterweizen				
Leguminosen				30
Silomais				
Kartoffeln	100	100	100	100
Getreide				
Grünpflanzung	30	30	30	30
Greening				
Greening (t)		67		
Effekte GAP-Aktive	296	262	262	262
Durchschnittswerte	691	697	671	610
Effekte GAP	18	30	4	166
Summe	987	948	937	888
Anteil Leguminosen		3%	2%	2%

exemplary value chains

- support value chains and marketing
- assurance of quality and quantity, prospects for utilization

expertise and knowledge transfer

- collecting results for optimal utilization along the value chains
- feedback between research, consultancy, practice, politics
- supporting innovations
- public relation and marketing
- consulting for farmers
- guidelines, newsletter
- homepage: www.lupinen-netzwerk.de

„The LUPIN-NETWORK has been grown up in competence and acceptance in last time. It combines ecological and conventional farm management and goes along with political, research and economical decisions.“ (G.F.L. e.V.)

Foto: Mirko Runge, Saat-zucht Steinach GmbH & Co KG; A. Gefrom, LFA MV; A. Pripcke, LFA MV; Brotbüro GmbH

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LUPIN-NETZWERK

– demonstration of lupin cultivation –

LUPINEN-NETZWERK

Variante 1

Sorte: Blaue Lupine „Boruta“

Impfung: HiStick

Saatverfahren: Drillsaat, 12 cm

Saatstärke: 180 kg/ha, 120 K/m²

Saattiefe: 3 cm

Unkrautregulierung: Rotary Hoe




- ca. 60 hectare/year field demonstration
- ask about any aspects of lupin cultivation (breeding, technology)
- advices for lupin farming
- no statistical experiments

	2014/2015	2016	2017
field days	7	10	7
spot checks	12	11	9

Herbsturche	Bodenbearbeitung	Blättrandkäufer	Standard	Sortenwahl	Impfung	Saatzeit
					mit ohne Standard spät	

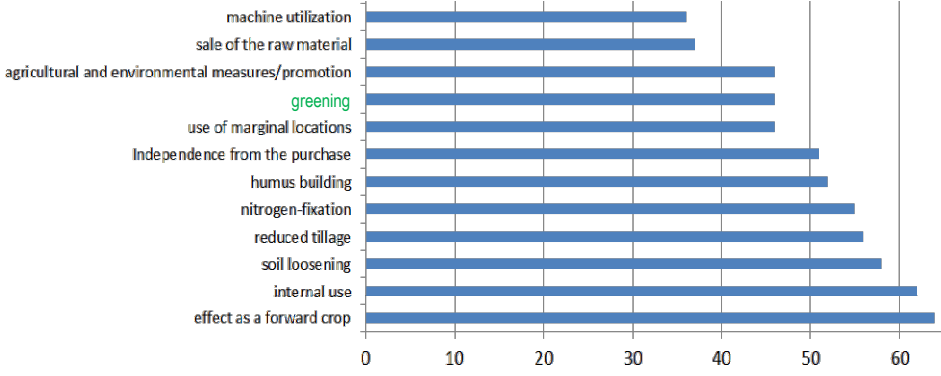
Foto: A. Gefrom (LFA MV), G. Schrage (LLG ST), E. Engels (LWK NRW)

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Geleitet durch:




LUPIN-NETZWERK




– lupin cultivation – motivation (survey 2015, conventional farmers) –



Motivation	Percentage (%)
machine utilization	35
sale of the raw material	38
agricultural and environmental measures/promotion	45
greening	45
use of marginal locations	45
Independence from the purchase	50
humus building	52
nitrogen-fixation	55
reduced tillage	55
soil loosening	58
internal use	62
effect as a forward crop	65

- Locally, there is more lupin cultivation (conventional) at non-Greening-areas.
 - 69–72 % of the network-farmers are cultivating lupins with Greening actions.
 - The lupin area increased on average for 22 % at network-farms in 2016.

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Geleitet durch:




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– Needs for legume based food- & feed chains –

- „lupin cultivation is manageable, lupins are an interesting cultivars“
- „niche with potential, but you have to be patiently“
- motivation and individual decision of farmers (utilisation)

support:

- adequate and long term frameworks
 - adaption of standards (harvest time, intercropping)
- qualification and consulting/ promotion
 - demonstration networks
- research

cultivation:

- seeds availability
- innovations
 - breeding success (feed value)
 - successful weed and pest control
 - problems to harvest dry (alternatives/ technology for drying)
- calculation of ecosystem functions (hole rotation)




Foto: A. Gefrom (LFA MV)

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– Needs for legume based food- & feed chains – requirement legumes in Germany/ MV –

Germany:

- currently 1,6 % (197,4 t ha) legumes are cultivated on agricultural area
- lupin 15,5 % (28,9 t ha) of legume area

- legumes used by animal feed industry 0,4 %; 88 T t (2015/16; BLE)
- others 31,8 %; 6.647 T t (rape, oil cake, expeller, extraction soy grist, ...)

federal state of MV (Priepke & Losand, 2013, 2016):

conventional:

- 2016: legume cultivated area 4.465 ha/ yield 2,1 t/ha
- total 9.377 t lupin; 8,5 % of potential needs (ca. 110 T t)

organic:

- 5.200 t/a lupin for organic livestock possible
- lupin cultivated area 1.747 ha/ 14 dt/ha (2016)



Foto: Mirko Runge, Saat-zucht Steinach GmbH & Co KG; A. Gefrom, LFA MV; A. Priepke, LFA MV; Brotbüro GmbH

– Needs for legume based food- & feed chains –

- organisation of a market like soy-market:
 - cover quality, quantity and continuity
 - incentive for increase of lupin/ legume processing
 - development of processing capacity (local, mobile) and large area of trade structure
 - innovations/ investment in
 - technology
 - product development (cleaning/ drying/ storage/ processing)
 - improvement of feed value

- fair payment for quality parameters (non GMO, energy + protein)
- no additional work and expense for feeding
- mix of legumes for optimal dietary composition

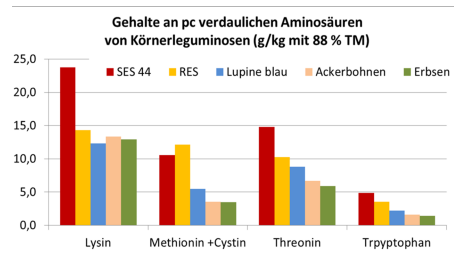
- dismantle prejudice
- promotion and information for consumer



Foto: Mirko Runge, Saat-zucht Steinach GmbH & Co KG; A. Gefrom, LFA MV; A. Priepke, LFA MV; Brotbüro GmbH

– Needs for legume based food- & feed chains – advantages of lupin – feed

- 3 breeds for different soil systems
- expansion of feedstuff and good combination with other protein feedstuff
- acceptance in feeding
- high feed value (compared to bean and pea)
 - highest protein quantity and quality
 - high precalcely digestible of methionine/ cystine, threonine, tryptophan
- high digestible of original substance
- high energy
- moderately level of fat
- low level of antinutritional factors (alkaloids > 0,05 %; no trypsin inhibitor)
- improvement of feeding value with thermic processing
- GMO-free, local, sustainable, retraceable
- reduced CO₂ production






A. Priepke, LFA MV

– Needs for legume based food- & feed chains – advantages of lupin – food

- gluten-free, cholesterol-free, lactose-free
- less allergen
- less fat/ high level of unsaturated fatty acids
- high level of minerals (Ka, Ca, Mg, Fe), carotinoids, vitamine
- high level of fibre (less flatulent)
- less glycaemic index (no increase of blood glucose – good for diabetics)
- less level of alkaloids (< 0,02 % for food)
- contain secondary compounds with health promoting effects
- low level of purine (rheumatism)
- processing like soy



A. Gefrom, LFA MV






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– Needs for legume based food- & feed chains – tasks in the project 2018/19

- winning of partners from industry
 - investigation of GMO-free facilities (www.leguminosenmarkt.de)
- data pool/ analytics
- establishing of consulting for lupin farming
- communicate advantages of the lupin for marketing
- communicate optimize/ new processing and feeding ration
- demonstration of value chains
- round tables
- promotion
- cooperation with research
- creation of guidelines
- teaching

view of a farmer:
„moist lupincorn silage
is an exiting topic.“



- implementation of LUPIN-NETWORK







Foto: Mirko Runge, Saatucht Steinach GmbH & Co KG; A. Gefrom, LFA MV; A. Priepke, LFA MV; Brotbüro GmbH

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LUPIN-NETWORK

– Implementation of LUPIN-NETWORK – Homepage –


„The demonstration networks of the BMEL-protein-plant-strategy are valuable initiatives who should continued.“ (UFOP e. V.)

newsletter: <http://lupinen-netzwerk.de/>









„The project LUPIN-NETWORK will be very important for guides regarding non GMO feed.“ (Non-GMO Finder UG)

„needs: best practice examples“ (Dialogforum nachhaltigere Eiweißfuttermittel)



Verbundpartner:

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LUPIN-NETZWERK

– Implementation of LUPIN-NETWORK – partner 2018/19 –

Logos of partner organizations:

- SAATZUCHT STEINACH (SEIT 1920)
- BayWa
- Börde-KRAFTKORN-SERVICE GmbH
- EVONIK INDUSTRIES
- LfL
- Wortmann AiG (Agraringenieurgesellschaft mbH)
- ufop
- Ceravis AG
- BROTBURO (Vermarktung von Bioprodukten)
- PROLupin (Lebensmittelzutaten aus Gläser Süßlupine)
- JKI (Julius Kühn-Institut)
- BIOPARK (Ökologischer Landbau)
- LUPINO AG DEUTSCHLAND
- LandDelikat (Die Bio-Rösterei)
- IG (PFLANZENZUCHT BESSER ERNTEN)
- Triesdorf
- "FaBeHa Schleusner" (Farm-Beratung-Handel)
- Non-GMO Finder (Das Online Portal für Produkte ohne Gentechnik)
- Gesellschaft zur Förderung der Lupine (G.F.L.)
- Gut Rosenkrantz (HANDELSGESELLSCHAFT FÜR NATURPRODUKTE MBH)
- vikra (VEREINIGTE KRAFTKORN-ANWALTER)
- BASF (We create chemistry)
- ISÖL
- BioEichenmühle
- STADER SAATZUCHT eG

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LUPIN-NETZWERK

– Impressions of the lupin-network –

Mitglied im LUPINEN NETZWERK (www.Lupinen-Netzwerk.de)

Map of Germany showing the distribution of lupin farms and knowledge centers.

- data farm
- demonstration farm
- knowledge centre

the farmer scores a 5-7 dt/ha surplus of barley because of preceding crop effect of lupin

view of a farmer: „moist lupincorn silage is an exciting topic.“



they get a lot of root nodules

Farmer M. Krüger appreciates lupins. He is a crop farmer.


Networks are useful
 „networks are awesome innovation for partnerships.“
 BLE-president Dr. Hanns-Christoph Eiden

Foto: Mirko Runge, Saatzucht Steinach GmbH & Co KG; A. Borchert, S. Rübensaat, Bauernzeitung; G.F.L. e.V.; K. Müller, Schweriner Volkszeitung; BLE

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 Bundesministerium für Ernährung und Landwirtschaft
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LUPIN-NETWORK




– Implementation of LUPIN-NETWORK – dates 2018/19 – www.lupinen-netzwerk.de


01.12.2017: legumes for food – standards in cultivation and utilization (38106 Braunschweig)
 12.12.2017 Seminar „Vom Saatgut bis in den Trog“ (18196 Dummerstorf)
 16.01.2018: round table and lupin-producer-meeting (LLG; 06406 Bernburg)
 17.01.2018 Tagung G.F.L. e.V. (14513 Teltow/ OT Ruhlsdorf)
 25.01.2018: legume-day in cooperation with Bauernverband Brandenburg (14554 Seddiner See)
 spring 2018: round table: presentations about lupin as feedstuff and for food. Viewing of a feedmill (LWK NI)
 12.–14.06.2018: DLG-field days in cooperation with UFOP e.V. (LLG; 06406 Bernburg)
 1st week of June 2018: field day of the G.F.L. e.V. (LFA MV, 18276 Gülzow-Prüzen)
 June 2019: round table in Lehr- und Bildungszentrum (LBZ) in 21379 Echem (LWK NI)
 November 2019: final conference

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Landesforschungsanstalt für Landwirtschaft und Fischerei




thank you for attention!





we invite you for participation in LUPIN-NETWORK:

- farmers
- lupin-competences
- agents of industry and market



www.lupinen-netzwerk.de

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