MONPELLETS LLC

„PREMIUM QUALITY“

ORGANIC FERTILIZER PELLETS FROM 100% SHEEP WOOL

„RICH HARVEST-HEALTHY FOOD“

МОНПЕЛЛЕТС ХХК

MONGOLIA

Area:
total: 1,564,116 km2
land: 1,553,556 mln. km2
water: 10,560 km²

Population:
2018 estimate 3,103,438 (Rank: 139th)
Density: 2 person per 1sq.km (Rank: 239th)

Sommer

GDP (PPP) in 2018 est.
Total: $ 39.7 billion
Per capita: $ 4,197

Spring

Winter

Autumn

Lifestock in 2018:

Horses 3,939 mln.

Camel 459,7 thous.

Cattle 4,380 mln.

Sheep 30,553 mln.

Goat 27,130 mln

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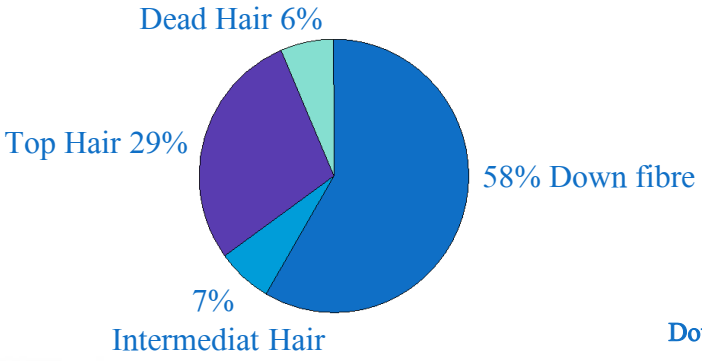
MONGOLIAN SHEEP WOOL

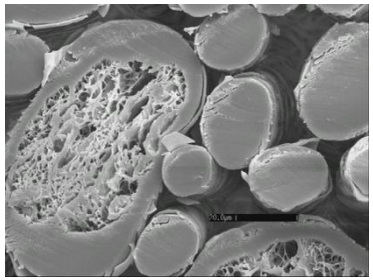
Sustainability

Mongolia with its untouched vast countryside has more than 30 million sheep that are being cultivated in the traditional nomadic lifestyle. We process the wool of the Mongolian sheep without using any additives or chemicals to produce fertilizer in pellets form. Hence, the name **Monpellets®.**

Number of sheep head, Mln.

Year	1990	1995	1999	2000	2008	2013	2018
Total	15,083	13,719	15,191	13,876	17,898	20,366	30,553





Fineness of the Fibre:
Gourse: 32,5-40 micron
Fine: 18-22 micron
Length: 80-150 mm

WHAT IS Monpellets® ?

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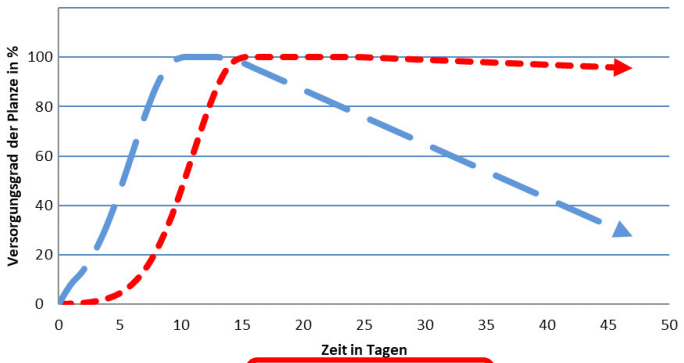
Organic fertiliser from 100% sheep wool

Ecological and environmentally friendly 100% regenerative

No consumption of water

No additives or chemicals

Swell effect
improves soil structure



Monpellets fertilizer

Water absorbing effect

Long-term effect

The biodegrading process takes place slowly as a result the nutrients can not be washed away by water and can be absorbed by the Plant. Thus, Monpellets® has a long-term effect of up to 10 months

Natural water storage, can store water 3.5 times of its own weight

No overfertilization - Natural and optimal regulation of nutrient and water supply to the plant

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Monpellets® PRODUCT DATA

Rich in nutrients

Mongolian sheep wool is rich in plant nutrients such as nitrogen, potassium and sulfur.
High-quality organic fertiliser made of 100% Mongolian sheep wool





NUTRIENTS	Unit
Nitrogen	10.45%
Phosphorus pentoxide (P2O5)	0.32%
Potassium oxide (K2O)	5.33%
Magnesium oxide (MgO)	0.47%
Natrium (Na)	0.38%
Sulfur (S)	2.11%
pH level	9.47

The "Institute for Agro and Urban Ecology" by the Humboldt University in Berlin, the "Institute for Fertilizers and Plant seeds", the "Water and Environment laboratory" in Germany confirmed nutrients and nutrient levels of our Mongolian sheep wool fertilizer.

Fertilizer from Mongolian unwashed sheep wool produced by our plant was analyzed at the Laboratory for Bacteriology and Food Safety in Dresden, Germany, and it was concluded that our product has no animal disease or bacteria such as E. coli bacteria or salmonella.

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EUROPEAN UNION

INSTITUT FÜR AGRAR- UND STADTÖKOLOGISCHE PROJEKTE
an der Humboldt-Universität zu Berlin • Lebenswissenschaftliche Fakultät
IASP

PRODUCT DEVELOPMENT AND COOPERATION

Based on the “ECO-INNOVATION” project, Value4Wool "Market umbrella for the utiliation of low grade grease sheep wool as organic amendment and fertilizer “, in the last few years, which was supported and financed by to the European Union, Executive Agency for Small and Medium-sized Enterprises (EASME) and corresponding Ministries and Organizations of the Federal Republic of Germany, the Institute of Agro and Urban Ecological Projects by the Humboldt University in Berlin has conducted detailed research and studies regarding “Production of organic sheep wool fertilizer“ project. Had the objective to find a new technology to create a new product in the European market to help supply healthy food.

The technology is based on many years of research and development conducted by scientists of the Humboldt University in Germany.

This new technology processes raw sheep wool to organic fertilizer without any additives.

Along with the detailed study on sheep wool including its quality, structure, content, impact on soil and other plants, comparison with other commonly used chemical and organic fertilizers, field and greenhouse planting technologies, climate impact, environment, ecology, food health, taste and quality of the food and its nutritional value, Institute of Agro and Urban Ecological Projects also conducted a research on fertilizer production equipment and machinery, operational technology, technical conditions, energy consumption, and social and economic impacts.

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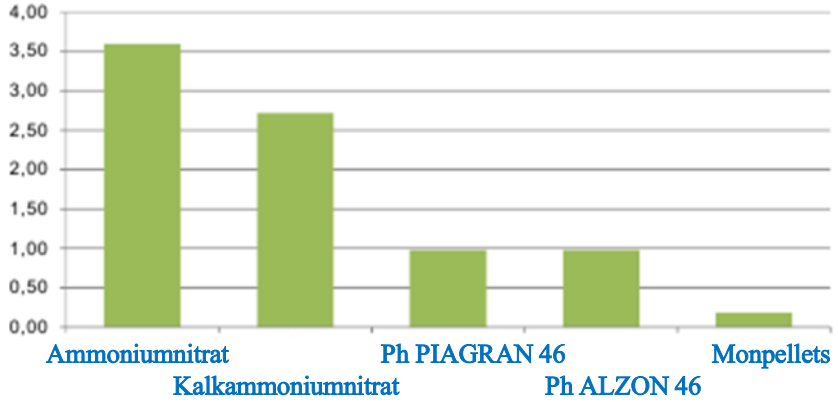
LIFE CICLE ASSESMENT

The main objective of this study was to create both ecologically and environmentally friendly organic fertilizer that will stimulate an increase in crop yields, using the latest innovative technologies. Moreover, it was greatly important to introduce a new product into the market that meets with “Life Cycle Assessment”, ISO14040-14044 standard.



This standard focuses on choosing the most optimal solutions that will reduce carbon dioxide (CO2) emissions into the atmosphere by assessing every stage of the production. Our production offers a variety of environmental benefits as it does not require to wash sheep wool and use water.

Production of MONPELLETS organic fertilizer emits significantly lower carbon dioxide when compared to other conventional fertilizers at only 0.20 grams.

For instance, production of 1 kg of beef emits 6 times more carbon dioxide into the atmosphere.

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MONPELLETS IS OUR COMMON FUTURE

WHY ?

Problems

- Up to now sheep's wool is processed only after a washing and cleaning procedure
- This procedure is very costly and hence the price for the product sheep's wool rapidly increases
- From the viewpoint of textile industry it is necessarily required to wash and clean sheep's wool due to its contamination with sheep's perspiration, wool grease, dirt and other impurities
- The sheared wool is often waste (especially crossbred wool)

Unwashed wool after shearing

By washing use Water & Detergents

The randament of wool is max. 60%, the rest is waste and waste water

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Goals

Product development
- Use of raw sheep‘s wool in horticulture and landscaping
- Development of a technology to process the raw wool with all natural dirty particles
- Development of fertilizer pellets made from raw wool without any other additives
- Analysis of plant growth in a green house and in field production

Results

- Successful development and construction of pilot plant for fabrication of organic fertilizer made from raw wool
- The fertilizer pellets are very nutrient-rich
- The pellets have a high water storage capacity
- The fat content in sheep’s wool is not incommoding plant growth
- The cultivation of ornamentals and vegetable with sheep’s wool pellets takes places much faster compared to those on conventionally used mineral fertilizer
- Impatiens, poinsettias, petunia, tomatoes, kohlrabi, and iceberg lettuce have been successfully cultivated with sheep’s wool pellets

Check group of ‘Primero‘ (with mineral fertilizer)

‘Primero‘(with 10 g pellets/ and mineral fertilizer)

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МОНПЕЛЛЕТС ХХК

Sep 2014 — Monpellets LLC was established in Mongolia

Nov 2015 — Test production of sheep wool fertilizer pellets (SWFP) in Germany using raw and unwashed Mongolian sheep wool. Laboratory testing in Germany confirmed the organic and premium quality of SWFP from Mongolian sheep wool.

April 2017 — **Groundbreaking** of the production plant in Tuv province, Erdene soum, around 60km south-east of Ulaanbaatar

Aug 2017 — Signing of the equipment purchase contract

Sep 2017 — Signing of project loan agreement with the Development Bank of Mongolia

DEVELOPMENT BANK OF MONGOLIA

Sep 2018 — Commissioning and very first production of Mongolian sheep wool fertilizer pellets

Dec 2019 — Export to Germany

March 2020 — Certification of Conformity

FiBL Forschungsinstitut für biologischen Landbau

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“Rich harvest, healthy food“

Our company’s mission is to contribute to the policy of the Government of Mongolia to process animal husbandry products and produce value-added products to increase the country’s export base and implementation of the Law on Organic Foods.

This new technology processes raw sheep wool to organic fertilizer without any additives. The sheep wool fertilizer can be applied to both fruit and vegetable plantations to increase harvest and provide healthy food.

EUROPEAN UNION

Monpellets® sheep wool fertilizer pellets fully complies with the EU Regulation No. 1069/2009 regarding health rules for animal by-products, which allows the export of Monpellets into the European Union

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MONPELLETS EFFECT

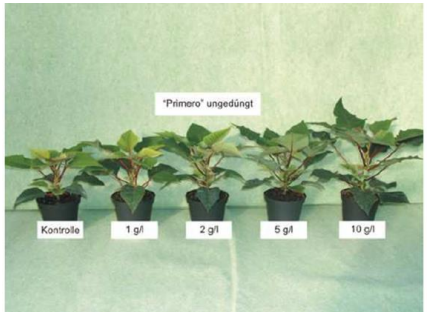
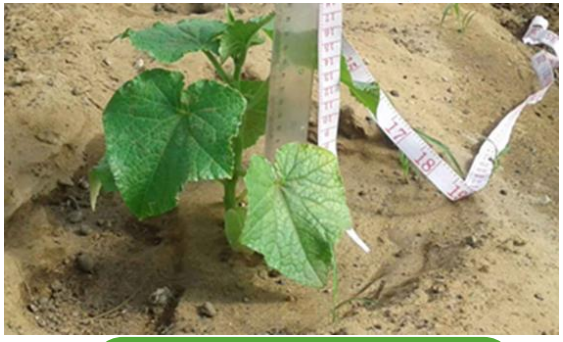


Abb. (57) Kontrollgruppe der Sorte ‚Primero' (mineralisch gedüngt)

Abb. (58) Sorte ‚Primero' (mit 10 g Pellets/l Substrat und mineralisch gedüngt)

Test in Mongolia, Bayankhongor Province, May 2019, in Greenhouse by Cucumber Plant



With organic fertilizer
at same time increase 17 cm;
color: green;
by highness of 40-50 cm,
first 5 sideshoots without flowers

With MONPELLETS
at same time increase 31 cm;
color: Dark green;
by highness of 60-90 cm,
every sideshoots are flowers

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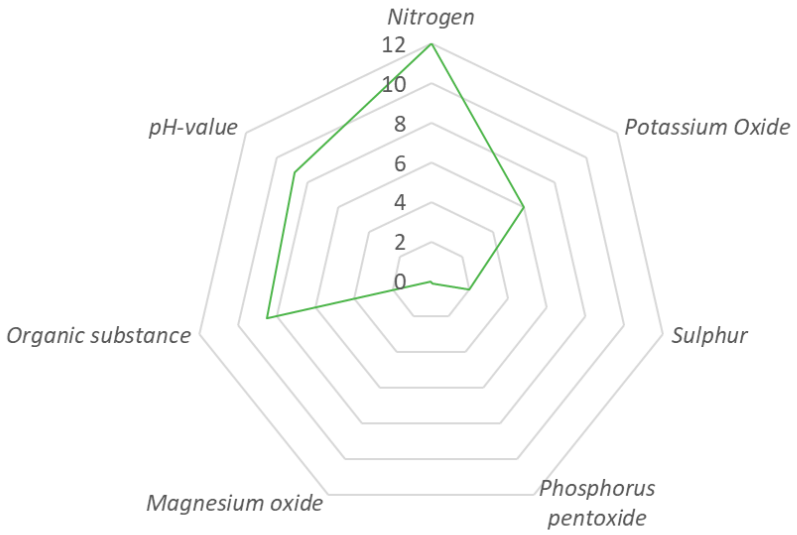
ORGANIC VS MINERAL FERTILIZER

Organic

Organic fertilizers are made of herbal or animal substances and must meet high standards in order to be approved for organic farming. Organic fertilizers are environmentally friendly and ensure sustainable plant cultivation. However, most organic fertilizers have a low nitrogen content of 2-4%.

Mineral

Mineral fertilizers have high nutrient contents such as nitrogen and potassium. However, mineral fertilizers contain heavy metals as well as radioactive elements. Also nitrogen compounds are washed out without being absorbed by the plant. This leads to a pollution of water and soil with heavy metals, nitrates and radioactive elements. As such mineral fertilizers cannot be used for organic farming.



NUTRIENTS	Unit
Nitrogen	10.45%
Phosphorus pentoxide (P2O5)	0.32%
Potassium oxide (K2O)	5.33%
Magnesium oxide (MgO)	0.47%
Natrium (Na)	0.38%
Sulfur (S)	2.11%
pH level	9.47

Monpellets

Monpellets is made out of 100% sheep wool and is a first-class organic fertilizer with high nitrogen and potassium content. It is environmentally friendly and ensures sustainable plant cultivation.
It meets strict EU regulation standards and is approved in Germany as organic fertilizer for organic farming.

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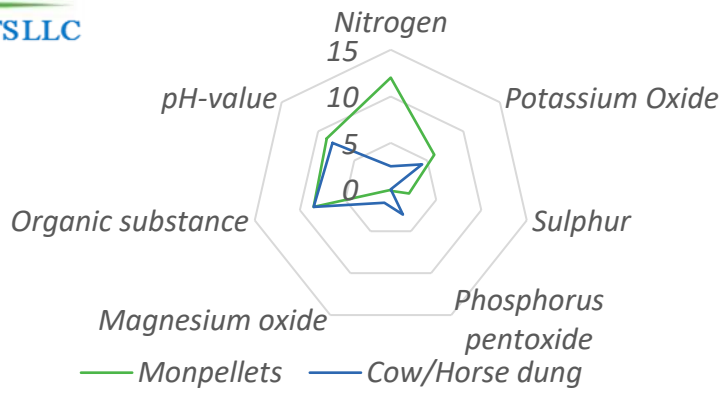
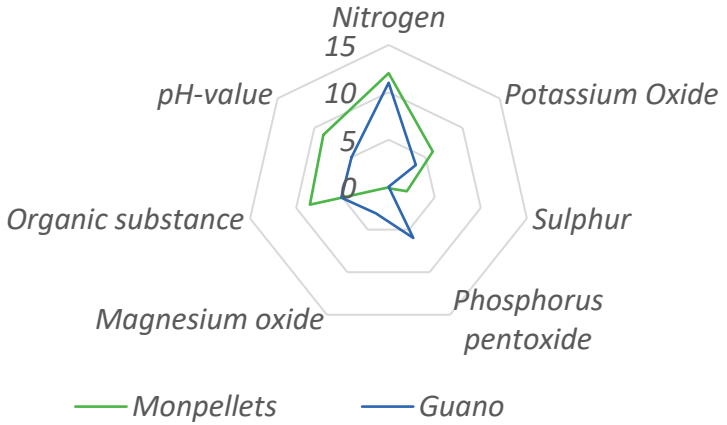
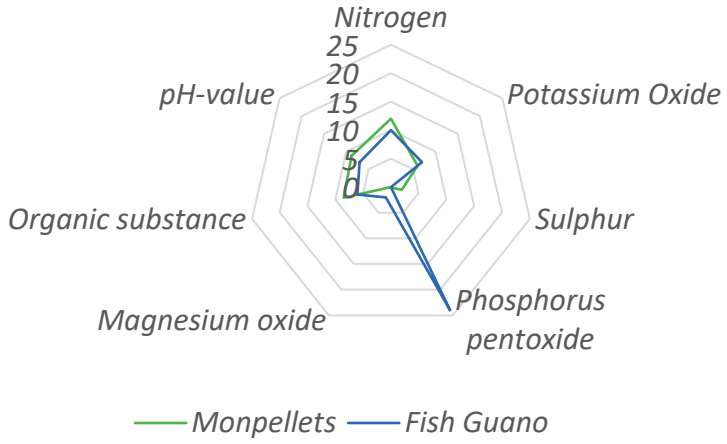
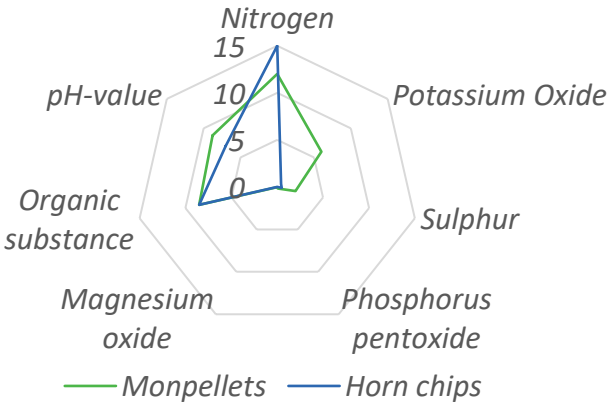
MONPELLETS VS ORGANIC FERTILIZERS









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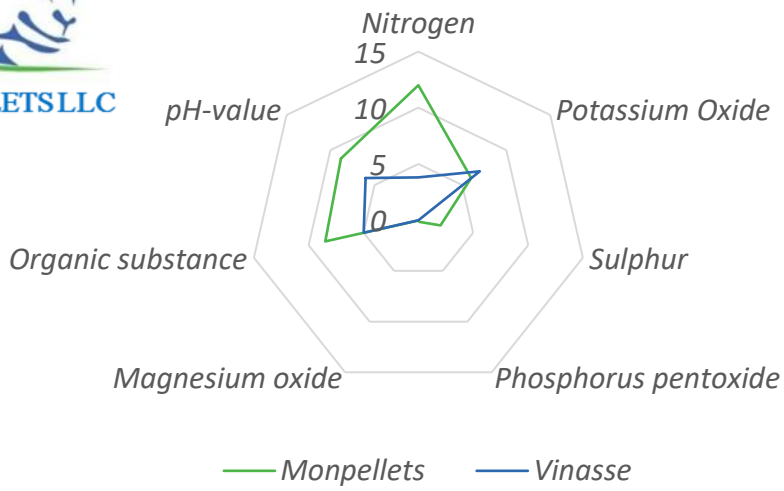
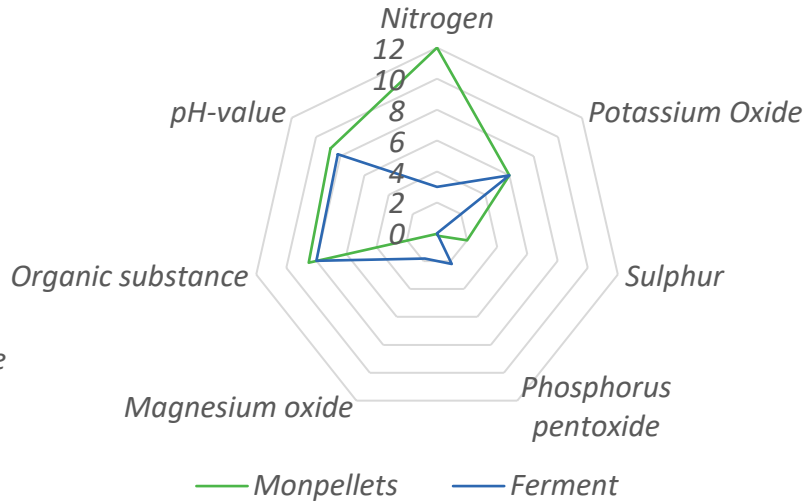
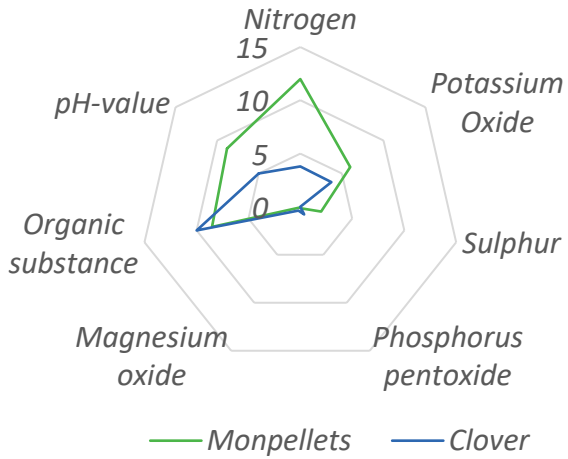
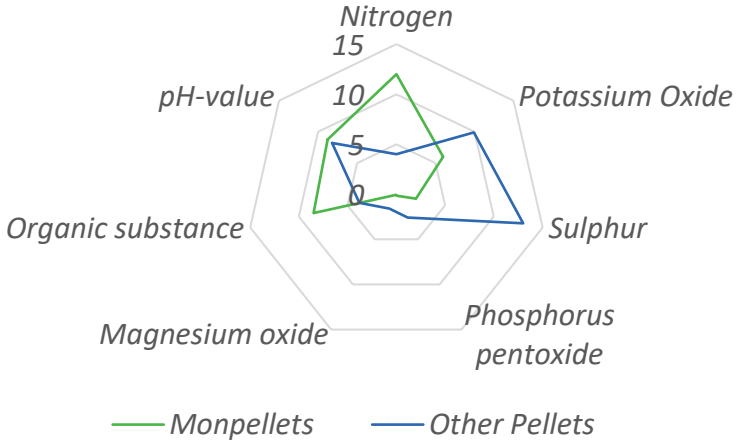
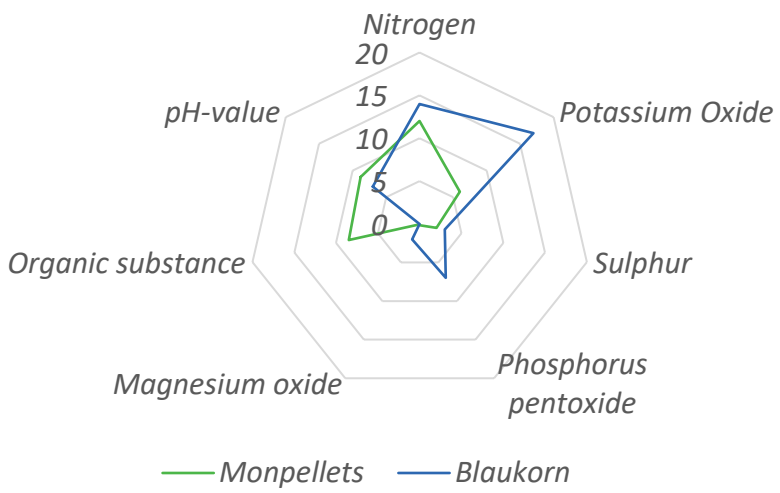
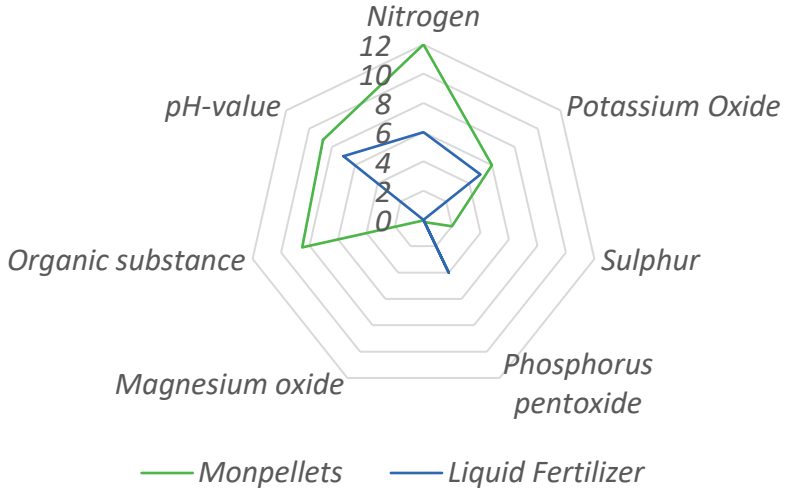









Nitrogen
20
15
10
5
0
Potassium Oxide
Sulphur
Phosphorus pentoxide
Magnesium oxide
Organic substance
pH-value
Monpellets
Blaukorn


Nitrogen
12
10
8
6
4
2
0
Potassium Oxide
Sulphur
Phosphorus pentoxide
Magnesium oxide
Organic substance
pH-value
Monpellets
Liquid Fertilizer

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APPLICATION

Monpellets should be applied under or around the plant roots and is to be covered by at least 5cm of soil. It supplies nutrients to the plant up to 10 months. Hence, one application can provide the plant with nutrients for an entire season. Given Monpellets can absorb and store water 3.5 times of its own weight it acts as a water reservoir for the plant. Monpellets can be stored for 2 years in a dry and cool environment.

Fruit Trees

250-400g per tree dependent on the nutrient needs

Potted and ornamental plants

10g for 1 liter soil
15g for 4 liter soil
20g for 7 liter soil
30g per 13 liter soil
50g per 21 liter soil

Vegetables

10-15g per plant or 50g per m2 for vegetables with low nutrient needs (lamb's lettuce, radish, pea, bean etc.)
15-30g per plant or 100g per m2 for vegetables with medium nutrient needs (iceberg lettuce, carrot, kohlrabi, cucumber etc.)
30-50g per plant or 150g per m2 for vegetables with high nutrient needs (tomato, leek, Chinese cabbage, cauliflower, brussels sprouts etc.)

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FIRST APPLICATION

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RE-APPLICATION

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