KG2021

ÖISS Webinar

Kunstrasen ohne Mikroplastikinfill

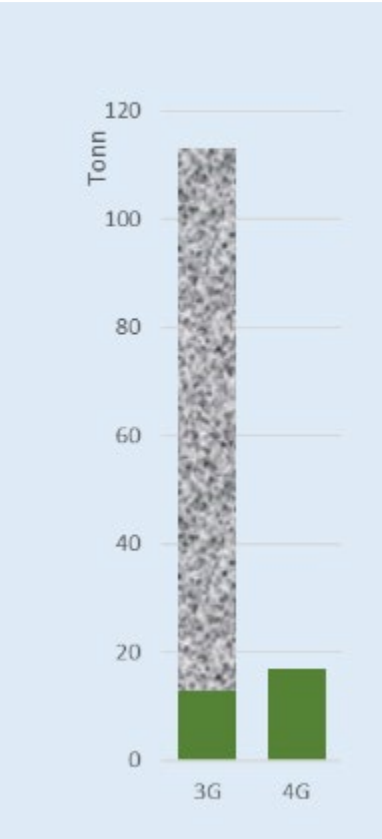
NTNU - Center for Sports Facilities and Technology

Bjørn Aas

Sep 17, 2020

KG2021 - a project on synthetic turf

Synthetic materials



Objective and measures

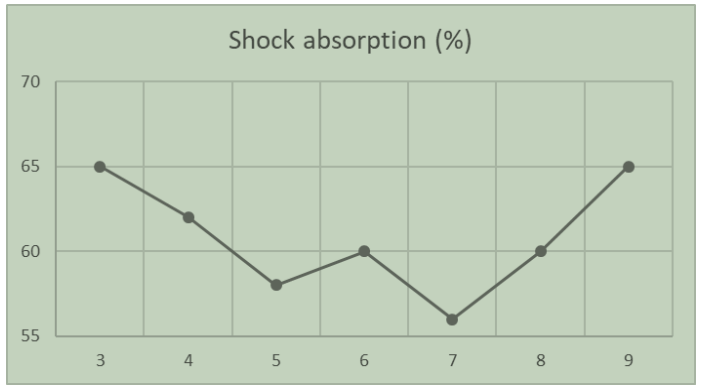
1. Reduce microplast pollution >80%
   - By reducing amount of plastics
2. Reduce heavy metal pollution >> 90%
   - By removing the harmful substances
3. Enable reuseable fraction >90%
   - Sand, infills, fiber…
4. Improve lifetime of products
5. Reduce life cycle costs
6. Ensure usability for all user groups

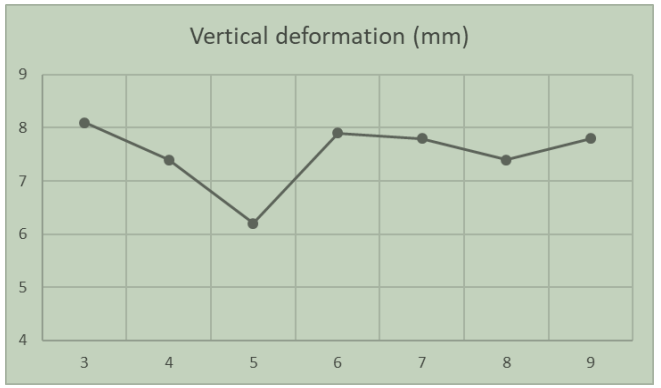
Findings after Year 1

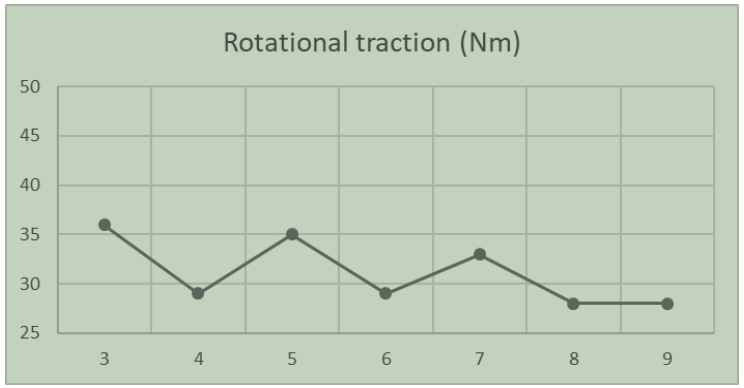
WP1 Sport

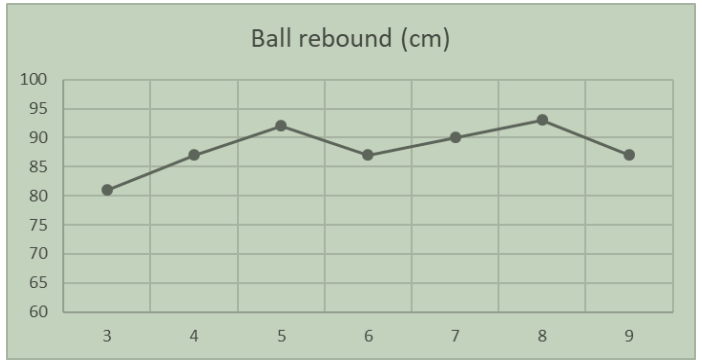
- Test methods subject to improvement
- Design for the users
  - Schools and playgrounds vs match arenas

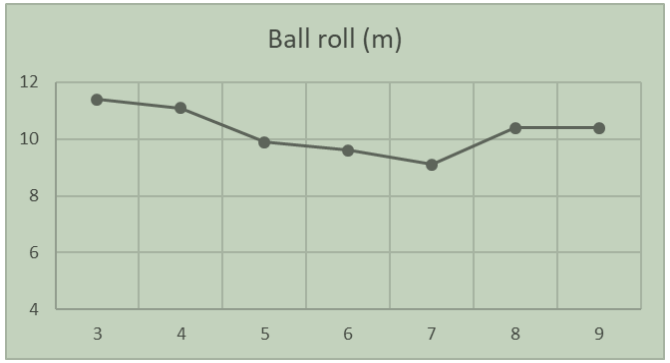
Field tests (Nordic Norm)











Preliminary results.

Organic and inorganic infills.

Identify the users (Norwegian numbers)

Top fotball

- 4 000 persons (Elite, 1.,2.,3.div)
- 150 fields (11-size)

Kids, youth, lower level seniors

- 350 000 users
- 1700 fields (5-7-9-11size)

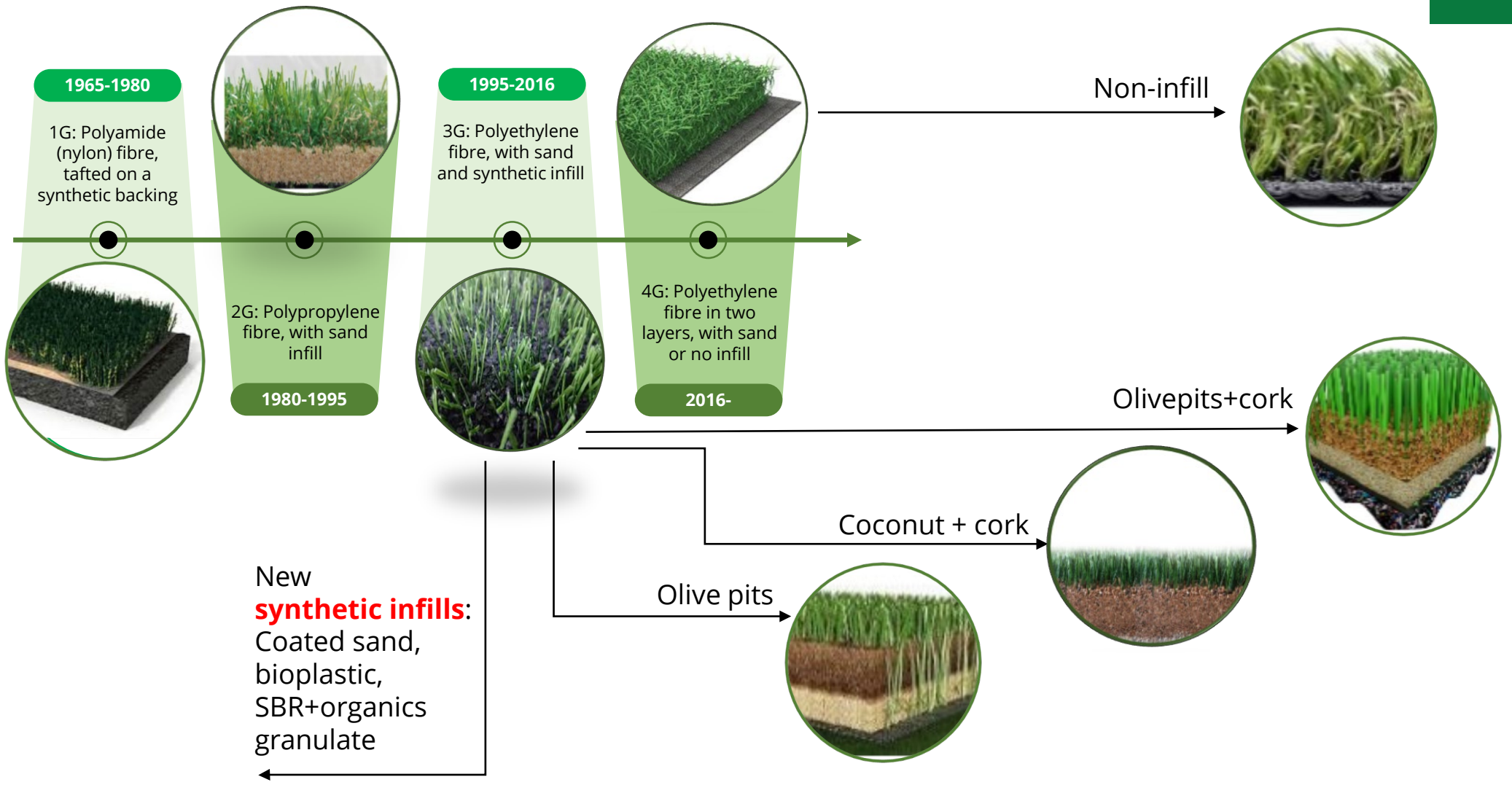
Findings after Year 1

KG 2021

WP2 System

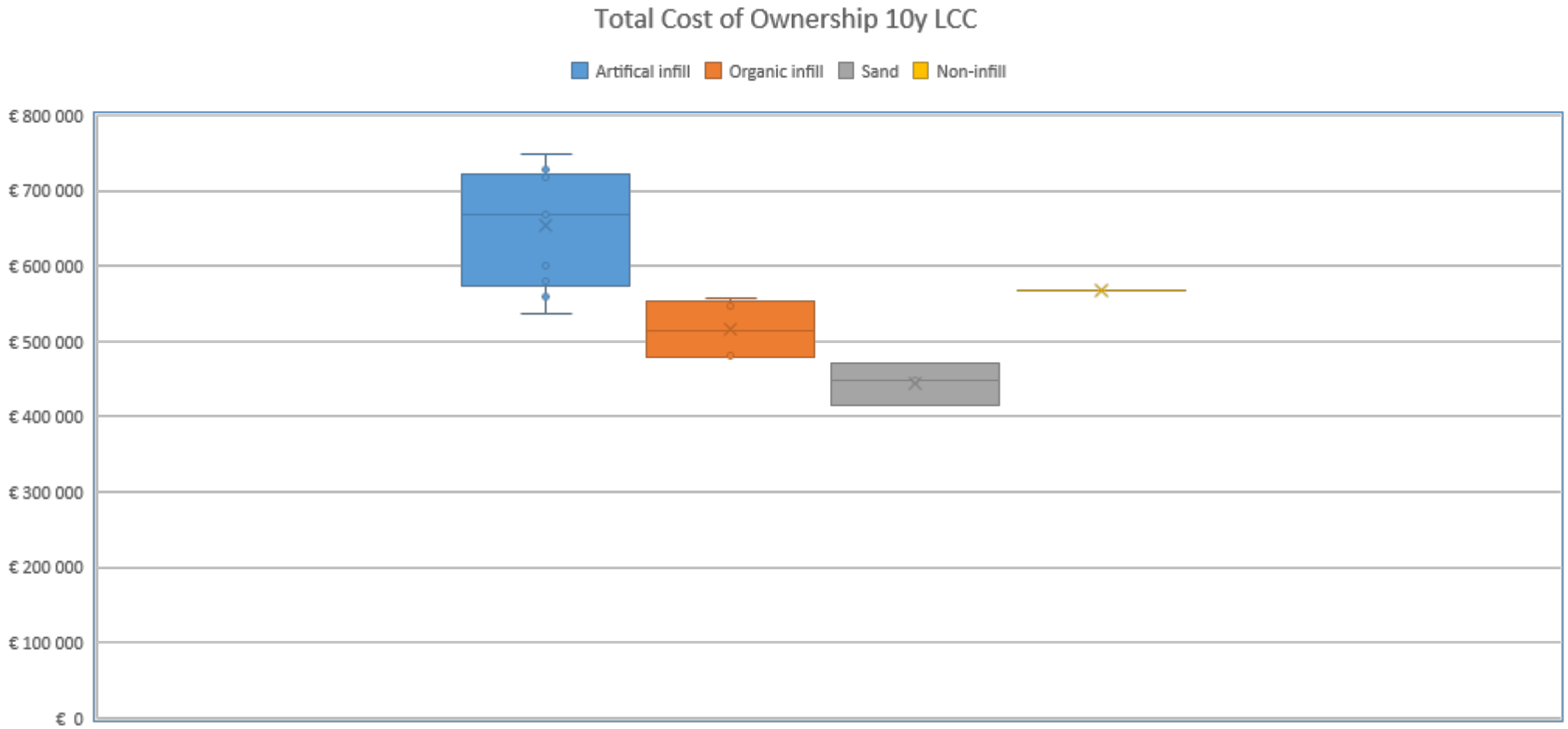
- System design (pad, turf, infill)
- Maintenance equipment, procedures
- Durability of fibers
- LCC

Turf systems and infills

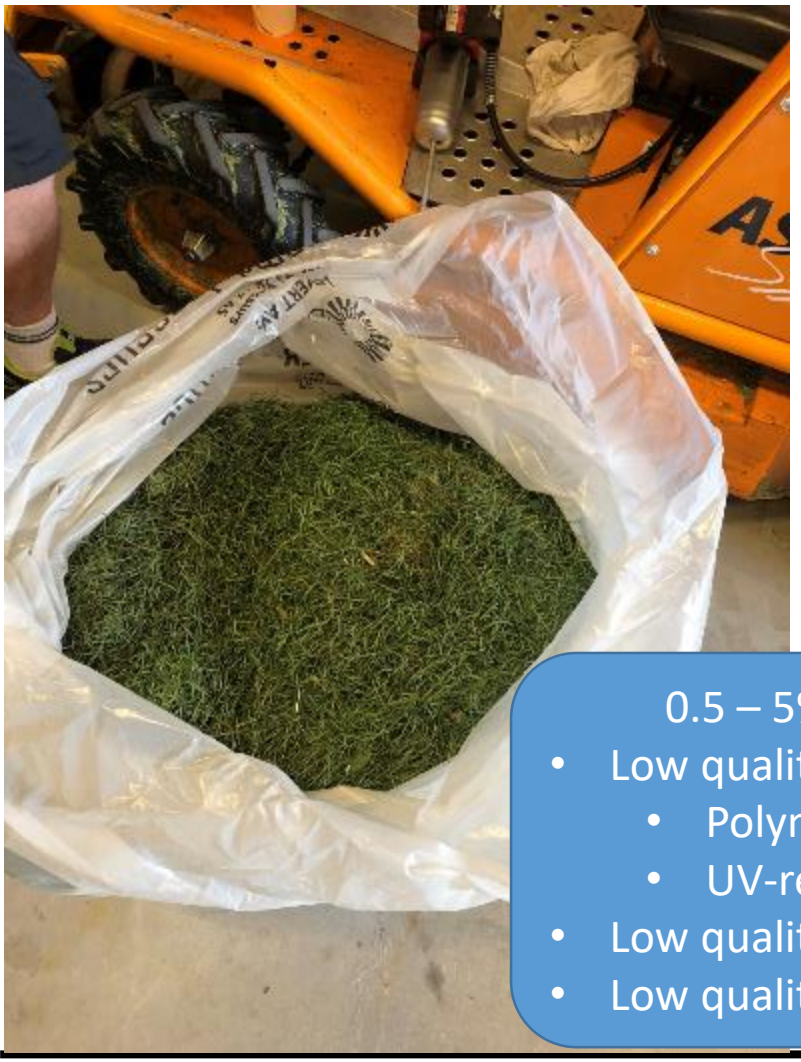


- Bjørn Aas – Center for Sports Facilities and Technology NTNU Trondheim Norway

LCC– Total Cost of Ownership



Fiber wear and tear – another challenge



0.5 – 5% loss/y

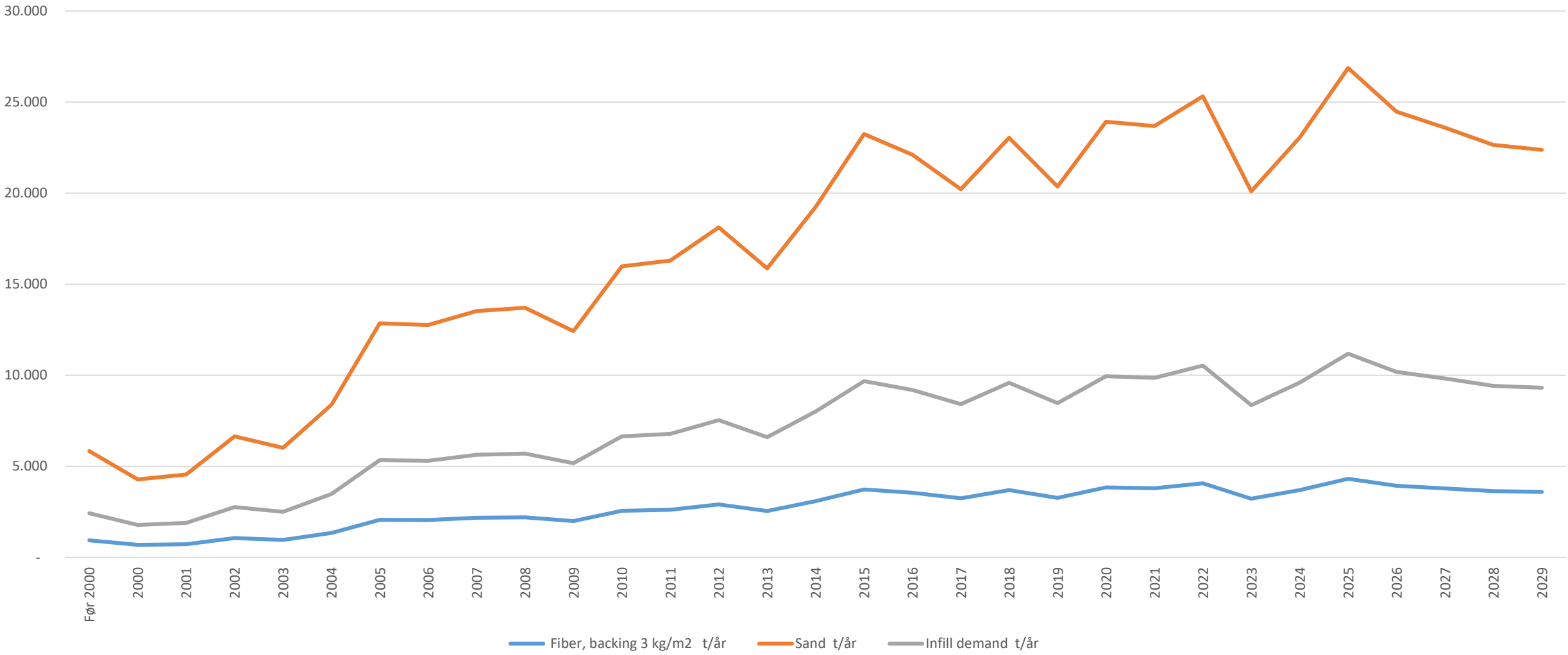
- Low quality fiber
  - Polymer
  - UV-resistance
- Low quality tafting
- Low quality backing

Findings after Year 1

WP3 Environment

- Remove polluting materials is low cost solution
- Reduce waste quantities is a kinder-egg:
  - Redused weight and volume
  - Reduced transport
  - Reduced demand of processing capacity
- Contaminated soil on, and beside the pitches

Waste q’ties: Trend analysis 2000-2029



KG2021

Thank you for your attention

Bjorn.aas@ntnu.no

https://www.ntnu.no/siat/kunstgress2021

www.godeidrettsanlegg.no