



Latest trends in grassland management in Finland

- Importance of soil health and roots

Anu Ellä

Regional Manager

MTK, Union of Agricultural producers of Southwestern Finland

+Private Grassland & Grazing expert

Finnish silage trends?

Back to the basis is the trend



Extreme conditions have increased



Especially developing livestock farms have lack of land (and possibly lack of money and time?)



It's typically the most effective way to produce **plenty of high quality grass-legume silage** instead of several different plants

Grassland is very trendy now!

- Especially in Western Finland the reputation of the grassland production used to be "just grass" in the middle of the big arable fields
- Nowadays livestock farmers are proud of their most important fields –the grassland fields!

WHY?

- Effective results (milk&meat)
- Importance for soil health (deep roots)
- Carbon sequestration





Same actions = Same life

- *If you want different results, you´ve got to move different*
- What worked 20 years ago, isn´t working the same today. How about in 10 or 20 years?



High density establishment
with multiple grass mixtures



High yield and clear targets



Good quality and knowledge
of the analysis results



**Good management and
quality grass-legume silage**
is "the secret" of the best
livestock farms in Finland



The most developing
farms in Finland dare to
try new, but still
concentrate on the basic

Best practises in grassland discussion groups farms



Long term planning and fast plan B



Multiple grass mixtures; the multiple and deep roots, drought&wetness + winter hardiness, N fixation and feeding quality



High density of the grassland –broadcast seeding, succesful establishment with suitable cover crops



3-4 years rotation or 4-5 years + successful over-seeding –for example in the Autumn



Right timings –observing, pre-samples and analysis results



Nutrient balance + herd health



Soil health



Comparing practices, targets and results in farmers discussion groups



Searching and adapting new ideas and knowledge also from abroad

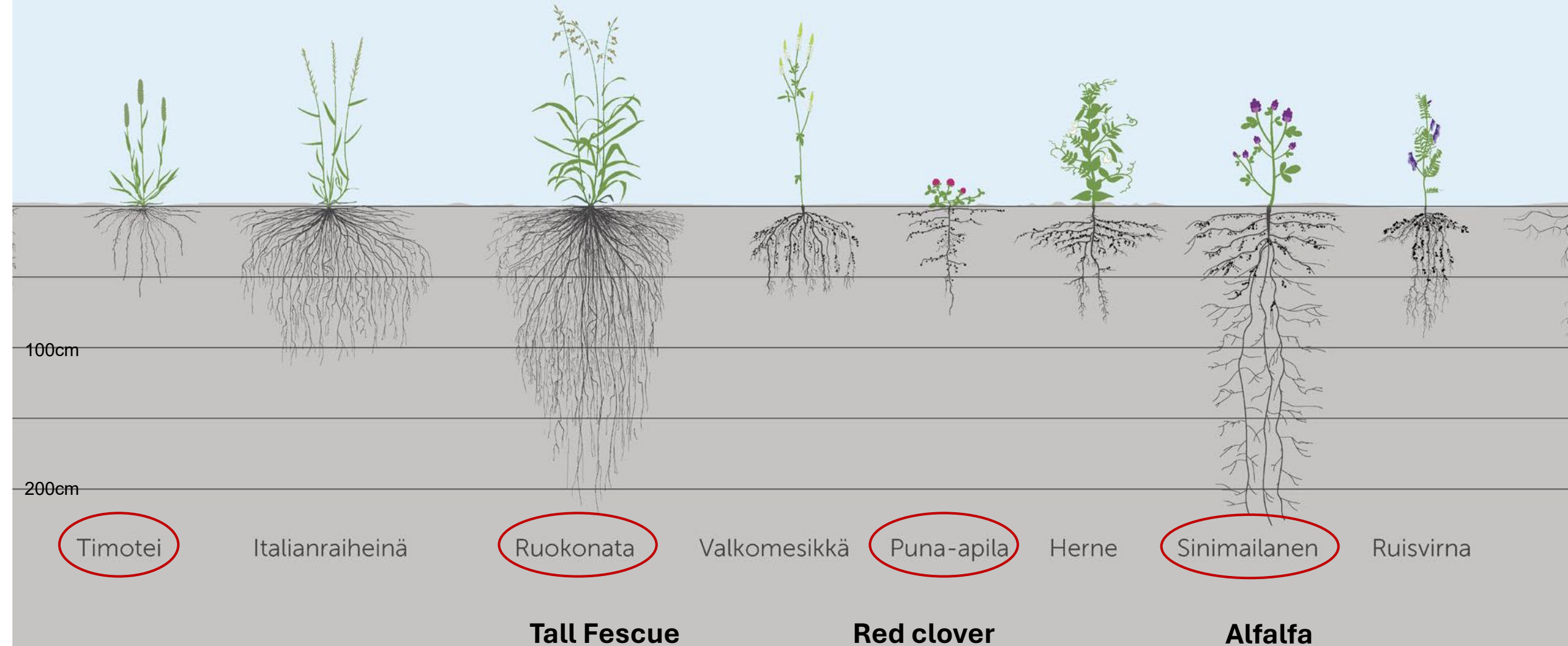
Every year it's too wet, dry, hot and cold...

- **Well growing roots absorb plenty of nutrients**
- Well-structured soil has holes, micro organisms and clay soil crumbs are durable
- The pores of well-structured soil allow water and air to move and roots to grow
- Soil structure improves when deep-rooted plants are used
- Good roots store carbon and moisture

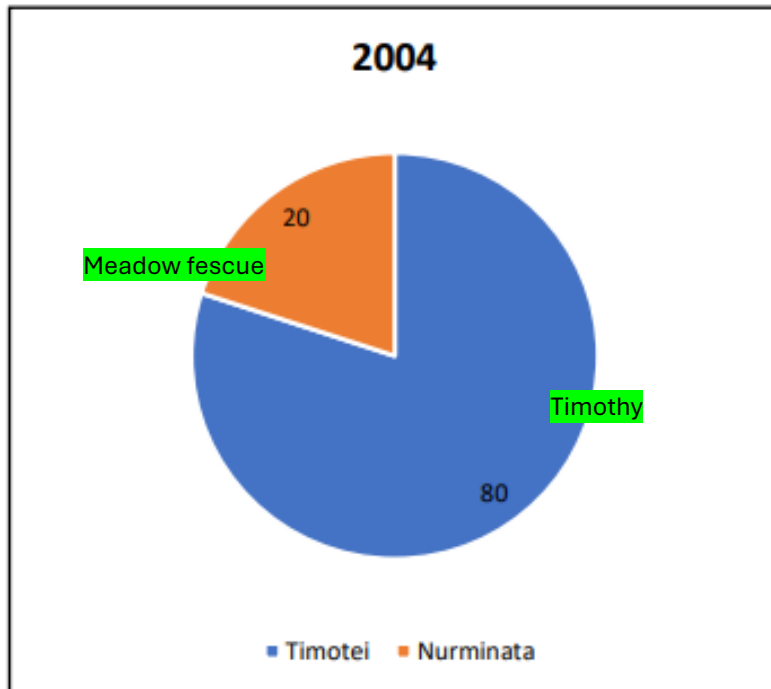
Good quality soil benefits both the farmer and environment



Hard drought in the Spring or Summer? Very wet in the Autumn? Extreme conditions?



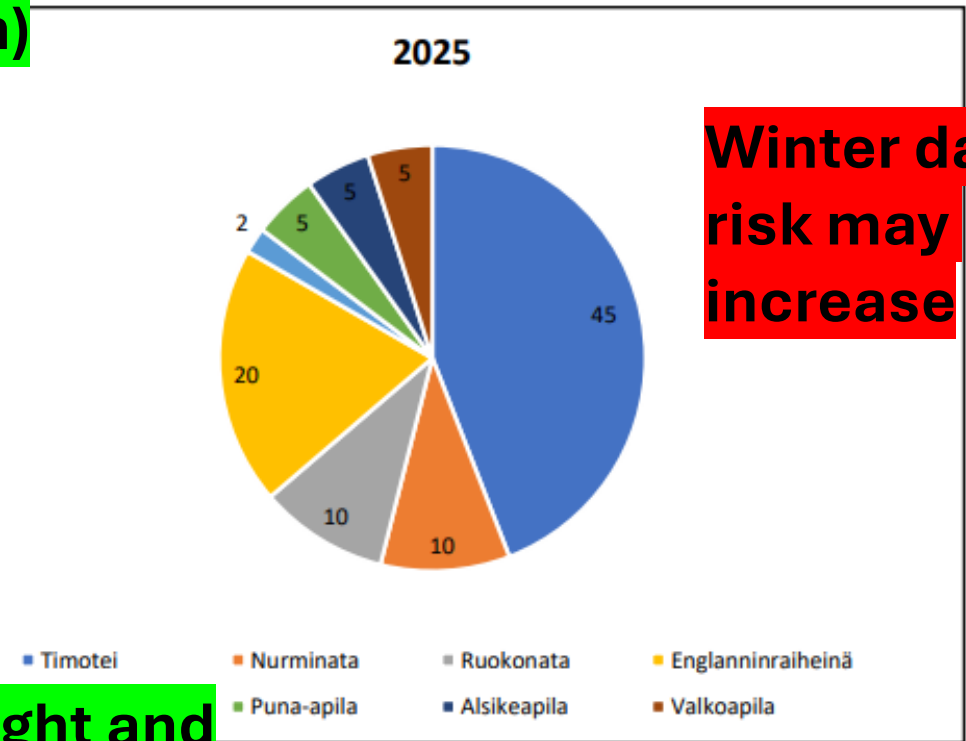
Multispecies grass mixtures = Southern Finland



Versatile rooting system (+biological N fixation)

Better crop density & higher yield

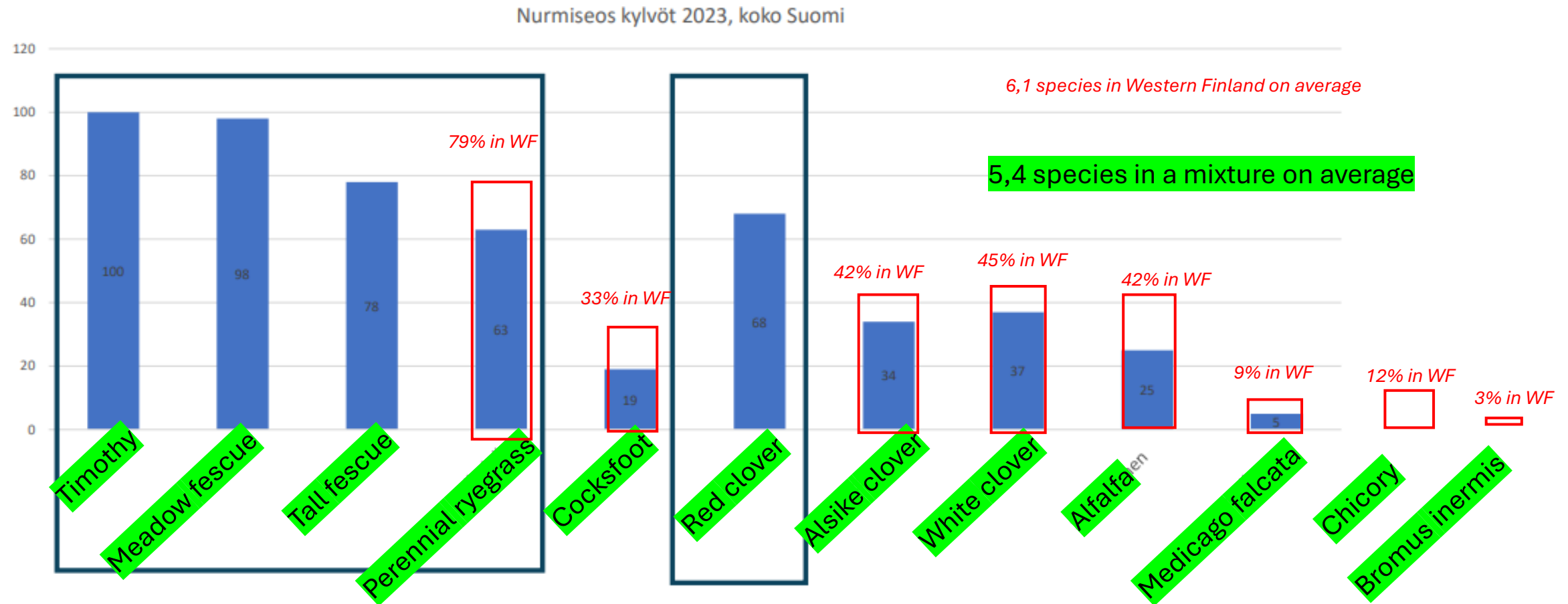
Better drought and wetness tolerance



Winter damage risk may increase

Establishment of silage grasslands in Finland

- The grass mixtures contains typically 4-8 different species





The rootsystem tells
the story of the soil

- *Oxygen, nutrient balance, water?*

Sustainable Silage pilot farm: Koliha Oy

900 bulls unit and dry seasons:

- New rental fields with soil issues
- Timothy based grass mixtures + low roots didn't work
- **New multiple grass mixtures**



Testing mixtures of high clover content in difficult soil type

- By the end of the first silage season (established a year before) there was a difference in soil
- The clover sides soil already started to get better and even smelled better



**Sustainable
Silage -hanke**
Koliha Oy

Interreg  Co-funded by
the European Union
Central Baltic Programme
Sustainable Silage

ProAgria

Root nodule activity was generally low compared to root nodules of clover in the same fields.

Alfalfa showed high stress to almost everything (Spectra Crop), when at the same time for example white clover or tall fescue were having low stress



Alfalfa challenged our pilot farms



Pilot farmer: Antero Lähteenmäki



Alfalfa challenges

To realize the challenges -> to be able to succeed later

- Alfalfa only grows near ditches
- Ice damage causes destruction -> the structure of **top soil**
- Sometimes alfalfa only grows in the edges of the fields: is this because of 0 N or no mowing or trampling?
- On a pilot farm a **starter N-fertilization** improved not only the growth and quality of grasses but also alfalfa's growth and quality compared to 0 N
- **Alfalfa is sensitive to a lack of micronutrients (i.e. Mn)**
- Alfalfa can't stand the time of the **third mowing** in mid-September. Or winter comes too early compared to the 3rd mowing and Autumn resting period.
- Although Alfalfa may look dead during the Spring, it may be making a partial comeback

*Pilot farmers with alfalfa:
Samuli Kallio, Markku Peltonen, Lähteenmäki MTY, Koliha Oy*

Some ideas from UK

- “Chicory and plantain fight the drought”
- “High nutrient uptake (for example P)”
- “Natural antiparasitism”



Soil surface structure challenges on pilot farms

- Nutrient balance challenges, when the top soil was like a cover for oxygen and water absorption
- Some interesting results with chicory in very dry fields: **High nutrient uptake!**
- Plantain would have been potential aswell, but it didn't survive even southern finnish winters



*Pilot Farm:
Herrakunnan Lammas Oy*

Mowing height + 10 cm



- The root system stops growing for about 1-2 weeks when mowed
- If there ´s more photosynthesis left, it ´s easier task for the plant to start re-growth
- Better carbon sequestration and yield

Check your roots and soil!

- The **root rot** is a problem caused by cutting the plants
- The fungal diseases (Fusarium) enters the plant
- It weakens the crop and reduces the yield
- An usual reason why the clovers won't survive for more than 2-3 years



- Multiple grass mixture, higher mowing height
- Avoid useless cultivation procedures like over-seeding for no reason
- **Realizing, that this will easily happen in the later rotation years (nutrients + density)**





Smell it!

- Healthy soil smells fresh
- If it smells more like potato cellar, it's not good news
- Water management problems and lack of oxygen cause musty smell
- Extensive root system and plenty of worms freshen up the soil





—

Thank You!

Anu Ellä

E-mail:

anupella1@gmail.com

