



- 125 cows + young stock
- 450 ha of field

6 years crop rotation:

3 x grass - turnip rape
(autumn/winter) - field
pea - cereals

3 farmers

Milk yield 9000 kg/cow/a

Milking cows have one mixture



heifers and dry cows







Why without soya?

- .Self sufficiency; soya bean is less likely to manage in our conditions
- .Finnish dairy cows are mostly fed with grass + clover silage (no maize + lucern) -> turnip rape or OSR have shown to be more suitable than soya
- .Both practice and experimets have shown that it's possible to produce high milk yields by combining domestic protein sources like turnip rape, field pea and faba bean

Benefits of mixing different protein sources

Good quality silage BUT too low on crude protein:
you have to add more OSR

-> too much concentrates ?

-> too much crude fat on diet ?

-> energy loss ?

Keep the amount of OSR same and give more field pea

→ less cereals without losing energy (starch!)

→ level of concentrates doesn't rise

→ still higher protein level

Mixing in practice

Typical combination:

- *50% OSR

- *25% field pea

- *25% faba bean

- *Needs to be crushed by hammer mill

- *Daily amount/cow can vary from 0 up to 6kg depending on milk yield and silage quality

- *Grist milled cereals are offered separately (Or everything is mixed by contracting truckmill which includes both mill types.)

- *Total amount of concentrates max 12kg

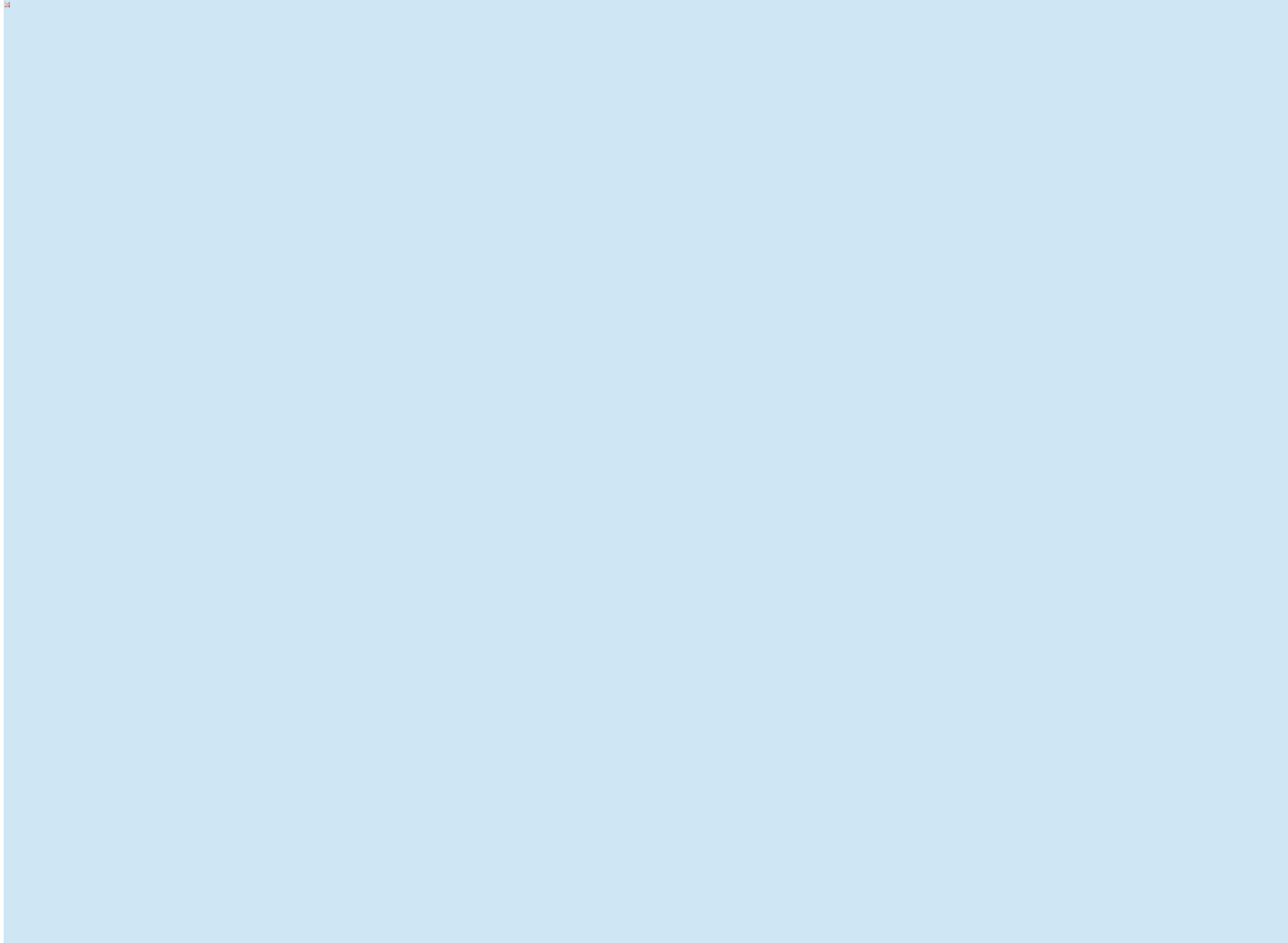
Picture: Mixture of pea+turnip rape cake+wheat+oat. Oat was very low on weight and went throught the grist mill nearly without crushing.



Whole rape seed

- .Less used
- .Very high fat content (crude fat 415g/kg dm)
- .Portion for dairy cows max. 1-2kg/d
 - even smaller amounts *seem* to help to keep milk yield up when forage is not optimal or when other protein sources are limited
- .Has to be crushed with a hammer mill
 - flour
 - doesn't last long storaging
- .Suitable for mixed ration systems or for top dressing

Red clover based silage: same farm, same year 2015 (not good year)



Lucern based silage: same farm, same year 2014

