Enhancing the productivity in forage grasses on the European scale using interspecific hybridization

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Enhancing the productivity in forage grasses on the European scale using interspecific hybridization

- A first report of a *Festulolium* trial launched in 8 countries since 2012
- Why *Festulolium* ?
 - hybridization and introgression between at least 2 *Lolium* sp and 3 *Festuca* sp
 - an opportunity of response to Climate Change by breeding
 - a chance for better understanding what is adaptation in perennial grasses
 - to feed the general question in forage breeding :
to mix the genes or to mix the species (or both) ?

=> DM Yield in the year of establishment and 1st year of full exploitation

- 15 *Festulolium* varieties + 6 controls of parent species
- 9 trials x 3 blocks => 43 cuts overall

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Parent species differentiation

- better discrimination in locations of mild climate;
- at the advantage of Italian ryegrass;
- meadow fescue and perennial ryegrass often of less yielding;
- positive interaction of tall fescue in some locations and for a given cut

Parent species

- meadow fescue
- tall fescue
- perennial ryegrass
- italian ryegrass

Two first component diagrams following Covariance Analysis in each location (in T DM/ha)

X:1st comp.; Y: 2nd comp.; scale x:y = 2:1

Festulolium overall ranking

Festulolium Trial (9 locations)
1st year mean total yield

Festulolium Trial (France)
3rd year Spring yield x persistency

Amphiploid hybrid:

x L. multiflorum x F. pratensis

x L. perenne x F. pratensis

x L. multiflorum x F. glaucescens

Introgression from *Festuca* into *Lolium*

○ F. pratensis => L. multiflorum