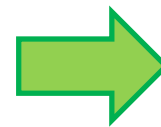
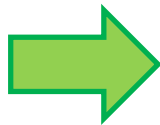


Close the system!

Catch crops with legumes can reduce N leaching and increase productivity in organic system

Chiara De Notaris, Peter Sørensen, Jim Rasmussen, Jørgen E. Olesen

Catch crops can reduce the actual N loss by 40-70 %
(Tonitto et al., 2006)



Legume-based CC = extra N (BNF)

The long term crop rotation experiment (1997)

Cropping systems:

- **O4**: organic (legume based CC)
- **C4**: conventional (non-legume CC)

4 treatments:

C4 (F= mineral fertiliser)	O4 (M= manure)
+CC +F	+CC +M
	-CC +M
	+CC -M

4th cycle of the experiment
(2011-2014)



	O4/ C4
1	Spring barley ^{+CC}
(2)	Hemp
3	Pea-barley ^{+CC}
4	Spring wheat ^{+CC}
5	Potato ^{+CC}

Legume-based catch crops: reduce N leaching and increase productivity in organic systems

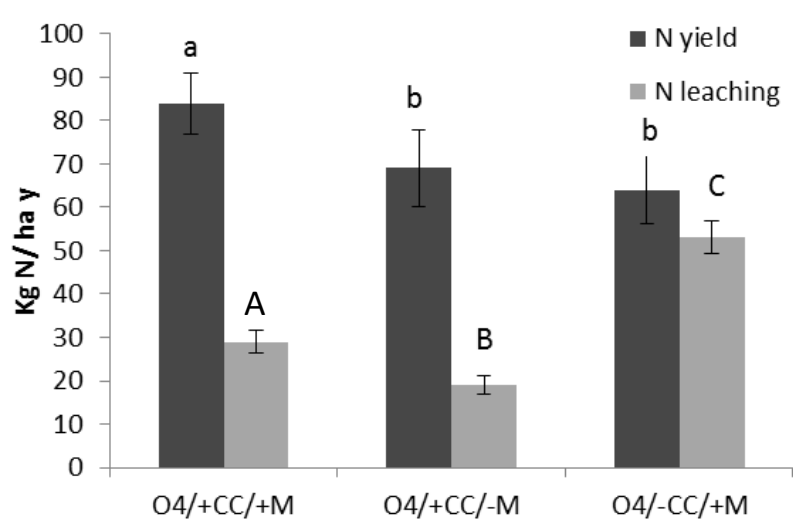


Figure 1: average N yield and N leaching in the organic system (O4)

	Non-legume (C4)		Legume-based (O4)	
	+CC/+F	+CC/+M	+CC/+M	+CC/-M
N** in CC	24 a	28 a	44 b	
BNF** in CC	-	11 a	26 b	
N* leaching	25 a	29 a	19 b	

*(kg N/ha y)

+ in aboveground biomass