



ICOS ancillary data workshop

Gembloux, September 2015





Cropland ancillary data

AGB

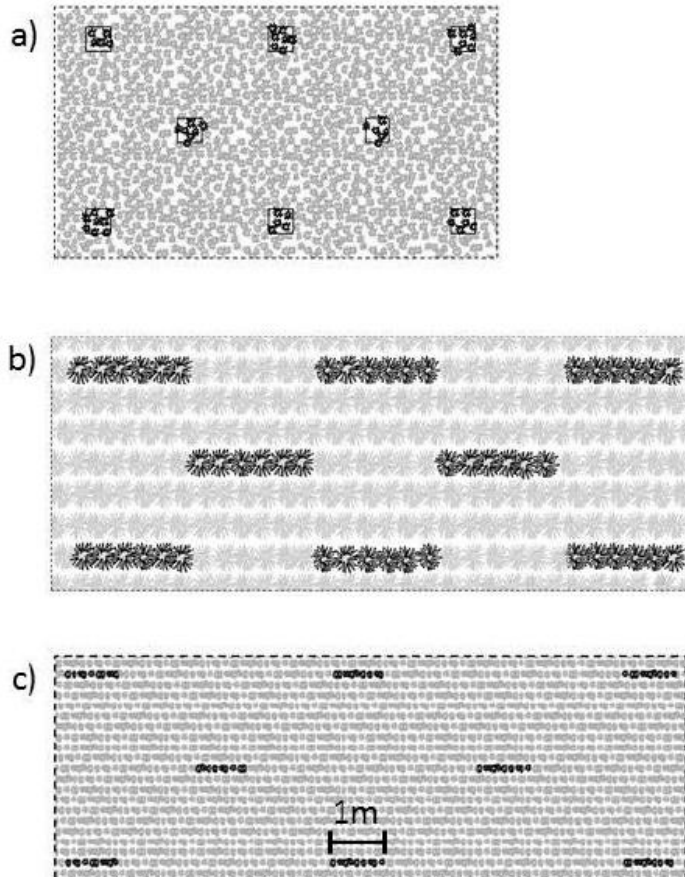
- AGB: Above ground Biomass
- definition: the dry matter (DM) of the Aboveground fraction of standing vegetation, expressed per unit of ground area
- Units: g DW m⁻²

AGB - methodology

- GAI: *destructive sampling*

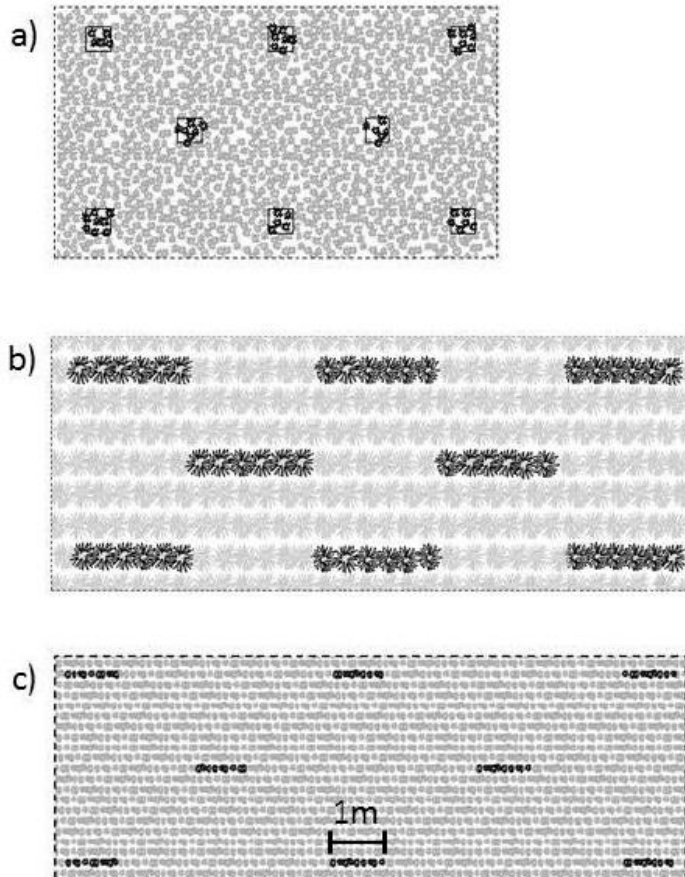


AGB – spatial sampling



- *(a) broadcast sown crops*
- *(b) row crops with uniform plant distance*
- *(c) row crops with irregular plant distance*

AGB – spatial sampling



a) Harvest 0.3 x 0.3 m

b) Harvest at least 6 plants (uniform planting distance)

c) Harvest 1m of plants (irregular planting distance)

At least 8 points per plot. But more is highly recommended

AGB – temporal sampling

- once at seasonal maximum AGB, if occurring before harvest
- once at harvest
- after each major disturbance, such as a storm event (to be judged by the PI, could be events that occur only once every 5 years which result in reduction in AGB, ...
- once in between two crop seasons if the field is vegetated: at the AGB peak of cover crops (timing based on PI judgement), voluntary regrowth or significant weed populations

Litter

- Definition: the dry mass of litter, expressed per unit of ground area
- Units: g DW m⁻²

Litter - methodology

1) Litter collection

2) Litter traps

- Method selection depends on soil type.
- Only mandatory for crops where relevant.

List of crops to be drawn.

Mandatory: collect harvest residue with collection method after harvest.

GAI

- GAI: Green Area Index
- definition: *the photosynthetically active surface area of standing vegetation, expressed per unit of ground area. (For Forests GAI = LAI)*
- Units: $\text{m}^2 \text{m}^{-2}$

GAI - methodology

1. Ceptometer



AccuPAR LP-80

SS1 Sunscan Canopy Analyzer

GAI - methodology

2. Digital hemispherical pictures



GAI - methodology

3. GAI: destructive sampling "clipping and weighing"



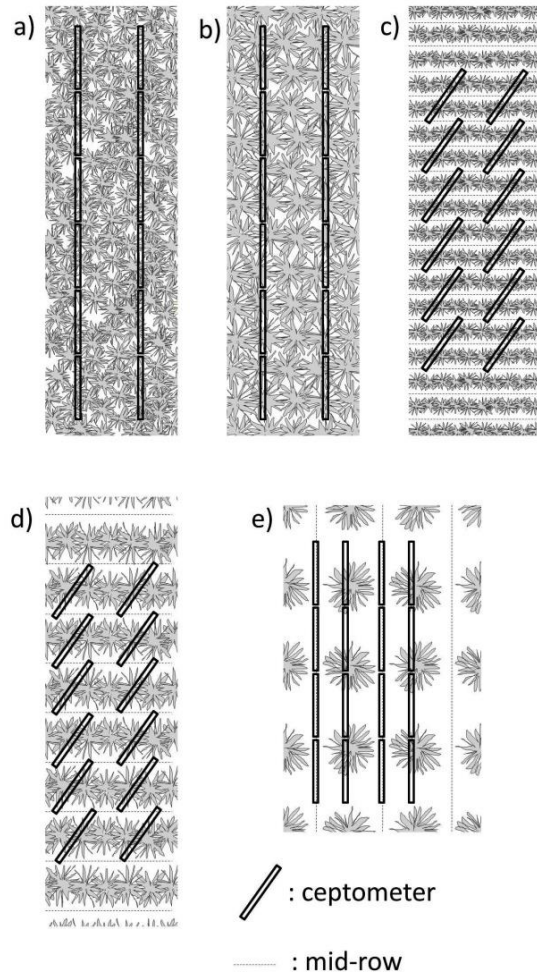
File	Edit	Font	Results
1	18.360	11.884	0 132
2	4.348E-4	27.667	0 100
3	50.862	8.169	0 132
4	1.338	20.717	0 132
5	2.958	18.524	0 132
6	2.174E-4	109.000	103 120

File	Edit	Font	Count	Total Area
Summary				
Slice				
forbs (2).jpg (blue)			45	180.956



GAI – spatial sampling design

1. Ceptometer

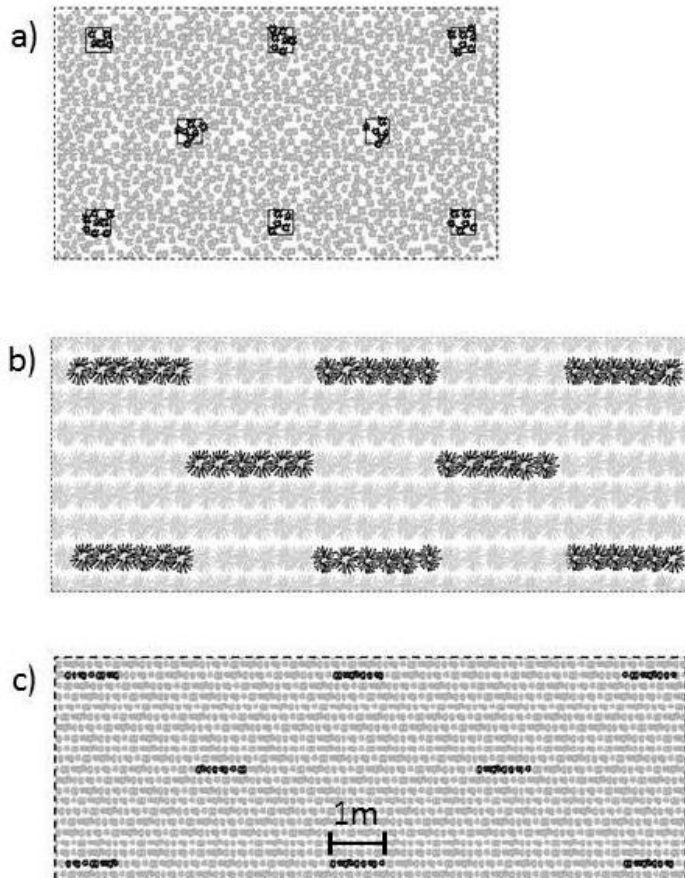


- *(a) broadcast sown crops*
- *(b) row crops with a closed canopy*
- *(c-d) row crops with an open canopy*
- *(e) single-spaced large-sized crop plants*

12 measurement points per location. At least two locations per plot.

GAI – spatial sampling design

2. Destructive sampling

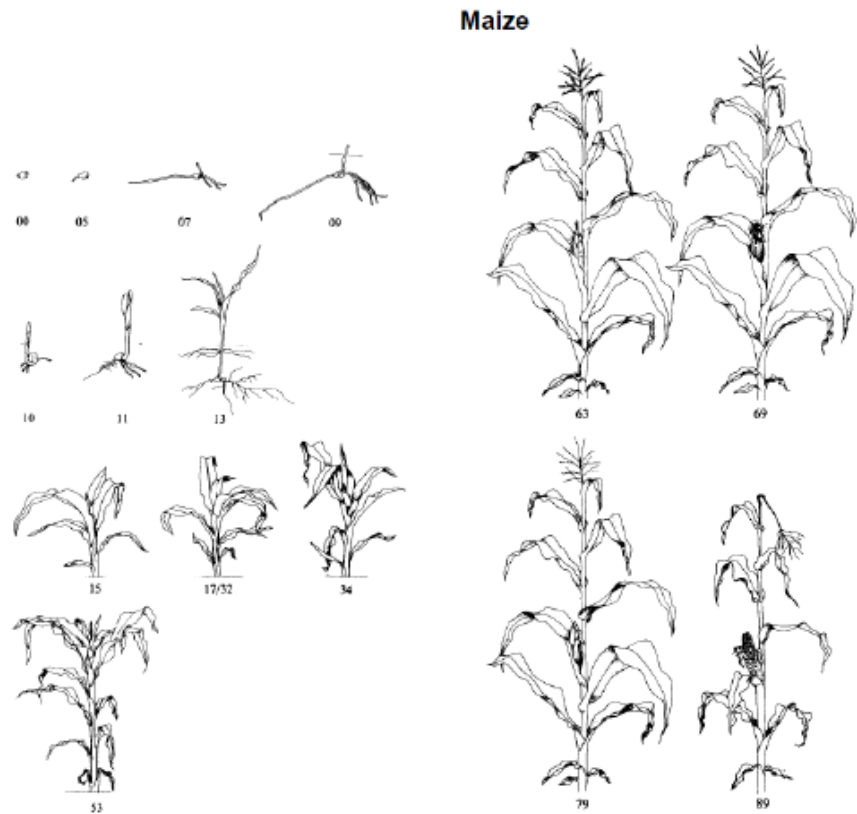


- *(a) broadcast sown crops*
- *(b) row crops with uniform plant distance*
- *(c) row crops with irregular plant distance*

At least two locations per plot

GAI – temporal sampling design

- Once during each development stage
- Depends on crop
- See appendix



GAI – temporal sampling design

- Validation of indirect (ceptometer) measurements with destructive measurements should be done once per year at peak GAI.