Combi-trap assembly instructions

Neccessary material:

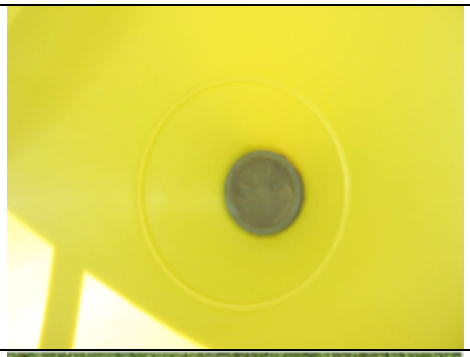
2 wooden poles, approx. 1.3-1.4 m, 4x4 cm to 5x5 cm
    sharpen or cut at one end to a peak to allow for easy driving into the soil
1 smaller wooden pole approx. 60 cm, 2x4 cm

Tools for mounting the trap:
    Heavy hammer
    Level to align poles and trap
    Power drill (or screwdriver)
    3 mm drill
    Screwdriver bits fitting to the enclosed screws

You will have to organize the above material yourself.

Enclosed in the package you should have received per one trap:

1 yellow funnel with two large and four small holes in the rim
1 rubber plug
1 aluminum tube
2 metal brackets to hold the tube
4 wood screws to attach the brackets to the poles
4 short L-shaped metal profiles to hold the windows to the funnel rim
8 metal screws with nuts to attach metal profiles to the windows and the funnel rim
2 plexiglass windows, each with a cut from the bottom or from the top
1 piece of metal wire to keep the trap upright

Assembly Preparations: First stuff the rubber plug into the funnel. Hammer it into the opening to plug it tight.	
Attach the small L-shaped metal profiles to the lower corners of the plexiglass windows. Don't fasten the nuts to hard, you may want to be able to twist them slightly later during mounting on the funnel.	

Position the two wooden poles at a distance of approx. 55 cm. If the soil is very hard, you may want to pre-drill the holes with a metal pole.	
Sink the two poles with the help of a heavy hammer into the ground.	

Make sure the poles are roughly vertically aligned.	
Insert the aluminum tube through the bigger holes in the plastic funnel. Hold horizontal at approx. 1.1 m above ground and attach on both sides with the metal brackets to the wooden poles. Use only 1 screw on the first side to be able to adjust height on the opposite side. 	 Some helping hands come in handy here.

Attach both screws on opposite side. Make sure the upper trap rim is horizontally aligned! Check with a level. When level, attach second screw on first side too.	
Mount the smaller wooden pole horizontally between the two vertical poles approx. 5 cm below the lower end of the funnel.	

Insert the metal wire through the small holes at the thin end of the funnel and twist ends around the horizontal wooden bar. It will stabilize the trap and allow to easily open it for regular emptying.	
Take the first plexiglass window (the one with the slit on the top side, opposite to the metal profiles!). Fit it into the funnel and align with the small holes drilled into the funnels rim. Don't bother to attach the screws yet.	

Take the second window and slide with its slit into the slit of the first window.	
Try to align the holes in the metal profiles with the remaining small holes in the funnel rim.	
Do not bend the plexiglass window too much or it might break! If no fit can be achieved, slide it up again, turn it around (left<>right) and retry again. If still no fit can be achieved, drill new holes in the funnel rim. Aim for a perpendicular orientation of the two window panes. Use a 3 mm drill for redrilling.	

Insert all 4 screws for the window panes. Tighten all screws now.	
Your trap is ready and set to be filled.	

We use plain water with a few drops of detergent to decrease surface tension. In case the traps should stand for several weeks, either replacement of the water will become neccessary or some conserving fluid is adviceable. Either method will prefent the water from becoming rotten with bacteria and fungi and thus starting to attract carrion-eating beetles in large numbers. We generally empty our traps once a week at fixed days and thus assure regular intervalls for later data analysis. To empty the trap, losen the twisted wire around the wooden crossbar and …	
… rotate the trap around the aluminum pole. Pour the trap-fluid through a fine nylon mesh into a large bucket.	

We use fine (0.2 mm mesh-with) PET screen-mesh stretched tight over the upper part of an old food-container, e.g. a mayonnaise bucket (you may get such e.g. from a restaurant).	
We cut out the flat part of the lid, leaving just the rim of it. Together with the upper part of the container, (cut free of the bottom), it forms a good size filter. We lay the nylon mesh over the rim of the container and snap the lid-ring over it. To fasten it even more we use hot-glue to fix the rim, the mesh and the lid together. We bought the PET mesh (product number 07-200/43, PET, with 0.2 mm mesh width) from http://www.sefar.com	
We then filter the fluid with the insects from the trap through this mesh into a bucket, by simply rotating the trap around the aluminum carrier-tube. Once the catch is filtered through this mesh, you can easily scrap the insects together with flat tweezers and transfer it to 70% alcohol for conservation. We buy the tweezers (Article B31a) from http://www.bioform.de The filtered fluid can be reused and poured back into the trap, once the latter has been re-errected and fixed in upright position with the metal wire.	

If not in use for part of a season, you may leave the trap empty and reversed in the field.	

I hope these instructions help in assembling and servicing the trap. If any questions should arise, feel free to contact us by mail (martin.obrist@wsl.ch) or phone (+41 44 739 24 66).

Wish you a successful catch!

15.05.2006 Martin K. Obrist

http://www.wsl.ch