Workshop (Lecture 5).
Calibration of ahndheld PAE. Procedure, tools and calculations.

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- Use of different tools for calibration process
- Knapsack and handheld sprayers' calibration procedure
- How to measure/select all the working parameters

- **Use of different tools for calibration process.**

For this workshop it will be available different tools to help in the calibration process:

1. Clean non-leaking knapsack with appropriate working nozzle, equipped with a pressure regulator or a constant flow valve

2. Ruler for measuring swath width and length

3. Graduated measuring jug

4. Clean water

5. Stopwatch or watch with a second hand

6. Calibration record sheet

- **Knapsack and handheld sprayers' calibration procedure**

1. Fill the knapsacks spray tank to maximum rated capacity with clean water.

2. Make sure that the sprayer does not leak and the nozzle(s) work properly.

3. Set the correct operating pressure.

4. Prime the sprayer and fill the tank to the maximum rated graduation line or if there is no line fill to the top.

5. Spray into the jug for 1 min.

6. Refill the sprayer to the same level as in step 4 recording the amount of water required.

7. Measure out a distance of 25 m.

8. Walking at an even speed for 25 m, recording the amount of time taken to complete the task (this should preferably be done in the intended spray area to provide a reliable walking speed).

photo: betterspraying

9. Spray holding the nozzle at the required height and measure the swath width.

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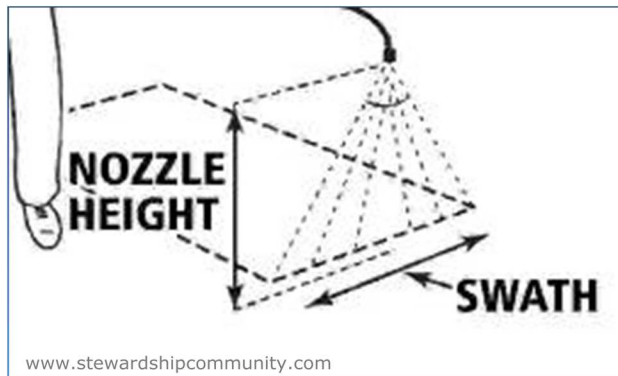
10. Using the calibration sheet find out the application volume per ha and record the data.

Knapsack sprayer calibration sheet

Date						
Name of sprayer operator						
Sprayer type:						
Sprayer pressure / bar						
Nozzle type						
Nozzle number	1	2	3	4	5	total
Volume sprayed in 1 min **V** / ml						
Nozzle flow rate **q** / l/min						
Nozzle height **h** / cm						
Swath or boom width **w** / m						
Time taken to walk for 25 m **t** / s						
Wakling speed **v** / m/s						
Application rate **R** / l/ha						

q = **V** / **1000**

v = **25** / **t**

R = **q** x **1000**/(**w** x **v** x **6**)