Comparison of an Antennas

Antenna Length Antenna Parameters	Half wavelength dipole antenna (L= Lambda/2)	Folded dipole antenna
Structure	Wire Antenna	Wire Antenna
Return Loss	22.6 dB	42.6 dB
VSWR	1.160	1.015
Impedance	58 ohm	50.746 ohm
Directivity	1.89	1.604
Gain	0.157	111.2
Radiation Pattern	Apple shaped	Apple shaped

Conclusion:

- Both the antennae are wire structure antennae with the folded dipole having an extra lambda/2 wire connected in parallel with the HWDA with the help of metallic arcs.
- The return loss was found to be better in case of folded dipole antenna as compared to HWDA.
- The VSWR for both the antennae was found to be very close to the ideal value of unity. VSWR value for folded dipole was closer to 1 than HWDA.

- The impedance for folded dipole was expected to be in the range of 300 ohm but was calculated to be 50ohm i.e. perfectly matched with the Tx line this happened as a balun transformer was used for impedance matching. The HWDA gave a impedance of 58 ohm.
- The HWDA was found to be more directive with D=1.89 as compared to folded dipole antenna with D=1.604.
- The gain value for HWDA was found very low as compared to that of Folded dipole antenna
- The radiation pattern for both was found to be apple shaped.