Sperm concentration and motility are not sufficient in the accurate diagnosis of the patient's fertility potential. Assays that probe the functional activity of the spermatozoa are important. Occurrence of acrosome reaction and the recognition of zona pellucida by the head directed mannose receptors on the spermatozoa are two important steps in fertilization. The aim of the study was to evaluate the correlation between mannose ligand receptor (MLR) assay and acrosome reaction (AR) as well as between the above tests and sperm motility and morphology. Semen samples from 14 normal volunteers were analyzed by computer assisted semen analyzer and morphology smears by Kruger's method. Spermatozoa were assayed after 6 and 24 h of capacitation at 37°C in Ham's F-10 medium containing 3% human serum albumin (HSA). Hoechst-33258 (1µg/mL) was used to assess viability. Appearance of head directed surface mannose receptors were detected by the binding of fluorescein isothiocyanate labeled (FITC) mannosylated bovine serum albumin. Acrosomal status was simultaneously evaluated by rhodamine (RITC)-labeled pisum sativum lectin. FITC and RITC Type III patterns were similar at 6 and 24 h of capacitation. A strong agreement was seen between these patterns at 6 h (r = 0.80, P < 0.0007) and at 24 h (r = 0.80, P < 0.0008). Sperm morphology showed no significant correlation with MLR and AR binding patterns at both time periods. However, a good correlation was seen between motility and MLR (r = 0.65, P <0.01) at 6 h and between motility and AR (r = 0.66, P < 0.01) both at 6 and 24 h (0.51, P <0.06). Sperm morphology can not adequately predict the functional status of the spermatozoa. MLR assay is a reliable and inexpensive test, it is easy to interpret and may be used effectively in the assessment of male fertility potential.