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In this study, three levels of nitrogen (0, 40 and 80 kg/ha) and five levels of phosphorus (0, 20, 40, 80 and 160 kg/ha) were tried in randomised block design with three replications on rainfed wheat crop at Selakui (Dehradun) during 1980-84. The quadratic response surface function was fitted in each year separately and for pooled yield data of four years for describing yield-fertilizer relationships. With the help of these equations, physical and economic optimum doses of nitrogen and phosphorus were worked out and discussed in

the paper. With the help of pooled yield quadratic response surface equation marginal products, yield isoquants, marginal rate of substitution and least cost combination have been worked out and the yield-fertilizer relationships are presented.