DM accumulation, leaf area development and radiant energy interception were measured in *P. vulgaris* cv. Mwezi Moja, Canadian Wonder and Rose Coco grown at Nairobi in 1982. Max. interception of photosynthetically active radiation (PAR) occurred prior to max. leaf area. Interception was similar in all cv. before max. leaf area, but was greatest in Canadian Wonder after max. leaf area was achieved as the cv. had the largest leaf area. DM accumulation was similar for all cv. and was dependent on PAR absorption. Conversion efficiency increased to a max. at 60-67 days after emergence, reaching 3.6, 2.9 and 2.7% in cv. Mwezi Moja, Canadian Wonder and Rose Coco, resp. Efficiency then decreased as the crops matured and senesced. Extinction coeff. for IR and PAR were not constant.