Abstract

The irrigation area of Parsanga is located in Sumenep Regency, Madura Island of Indonesia. This irrigation area is 500 ha and the existing cropping pattern is paddy–paddy–second crop. There is water discharge deficiency due to the existing cropping pattern mainly in the dry season. Thus, this study intends to optimize the cropping pattern for 3 condition so that it can produce the maximum benefit of agricultural product. The first cropping pattern is paddy/second crop–second crop–paddy/second crop; the second proposition is paddy/second crop–paddy/second crop–second crop; and the third proposition is paddy–second crop–paddy/second crop. The optimization analysis is carried out by using the linear programming. The suggested three cropping patterns are not only able to solve the water deficiency; they can also present the more production benefit than the existing condition.

Key words: cropping pattern, irrigation, linear programming, optimization, Parsanga