This study aims to calculate the yield, water content, levels of capsaicin, and the color of chili powder on drying temperatures and different time and temperature and duration determine the optimum drying chili powder to produce according to quality standards. The benefit of this research are generally able to provide information to farmers and entrepreneurs processors chili on the effects of drying on the yield and the resulting color pigments in chili powder. This research uses Rancanan Acak Lengkap (RAL) which consists of treatment with 1 factor repeated 4 times. Testing continued with the test statistic if BNT treatment effect. The treatment used in this study are as follows : A1 Long drying 9 hours, A2 Long drying 12 hours, A3 15-hours duration of drying and A4 18-hours duration of drying. The optimal duration of drying. The optimal duration of drying to produce high-quality chili powder is on 15-hour drying time. And the drying for 15 minutes producing chili powder with yield 11,7% and color values asta 3457,1

Key word : capsaicin, chili powder, drying, temperatures