Excess growing season rain for Lombok and Flores - Indonesia

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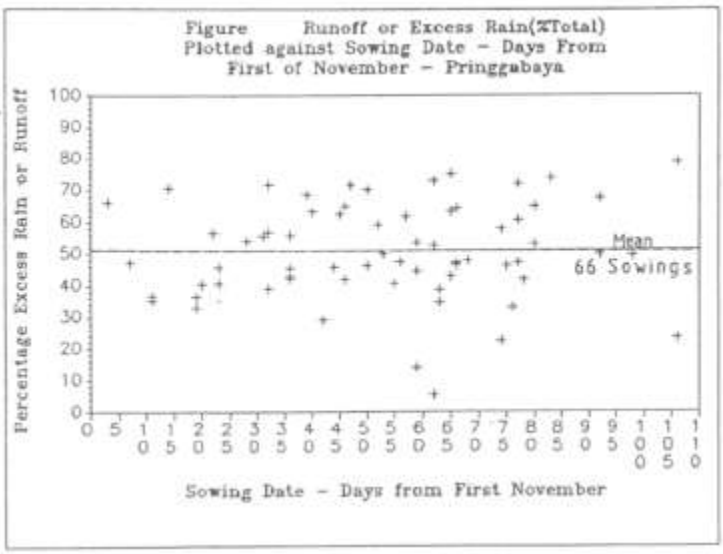
In the islands of south-east Indonesia, rain incidence and amount varies over short distances with much of the rain falling as afternoon storms following cloud buildup in the late morning. It is suggested that disturbances ('troughs', 'fronts') are a primary cause of rain rather than general monsoon or local orographic convergence. During the 'wet' there are rain periods of up to 14 days or more interspersed with similar periods of rainless days. Rainfall intensities of greater than 40 mm/hr are not uncommon. This paper examines the relation between sowing date and excess growing season rain.

Methods

Excess rain is defined as daily rain in excess of that needed to recharge the soil water store (ESW) set at 100 mm for the loam and sandy loam soils. The soil water balance program (1) outputs the total excess growing season rain and also expresses it as a percentage of rain over the growing season of 133 days.

Results and discussion

Data for Pringgabaya, a low rainfall high risk cropping area (1) show that mean excess rain for 66 sowings is 51%.



There is no decrease in percentage excess as sowing date is delayed even though mean growing season rain declines from 536 mm for November sowings to 369 mm for January sowings. At other sites there is also no decrease in excess rain with later sowings. Mean percentage excess rain ranges from 50 to 78% on Lombok and 29 to 64% on Flores.

On steeper slopes runoff and soil erosion necessitate contour farming, alley cropping and grassed waterways or bench terracing. Water conservation techniques such as 'tied ridging' are attractive but ties are difficult to maintain under high intensity storms. On flatter slopes excess rain can contribute to deep drainage and leaching of nutrients or waterlogging. At sites, where waterlogging is a problem, hilling up the rows or sowing on small raised beds is recommended.

1. Keefer, G.D., Ladewig, J., Diarini, P. (1989). Proc. 5th Aust. Agron. Conf., Perth.