



EVALUATION OF CLOUD SEEDING IN THAILAND DURING 2018 TO 2020

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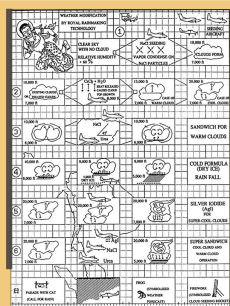


Figure 1 Weather Modification by Royal Rain Technology

INTRODUCTION

The cloud seeding operation in Thailand is performed mainly for the purpose of rain enhancement and rain redistribution at the target areas. DRRAA utilizes cloud seeding operation under the patent of Weather Modification by Royal Rain Technology.

OBJECTIVE To evaluate the efficiency of rain enhancement in royal rainmaking area according to Royal Rain Technology i.e. Cloud Formation Cloud Evolution and Rain Initiation.

METHODOLOGY

Sample selection criteria

1. Complete 3 Royal Rain Technology steps at the same target area. (Figure 3)
2. The Royal Rain Technology substances were seeded accurately.
3. The target areas had 25 km buffer zone from other Royal Rain Technology operation.

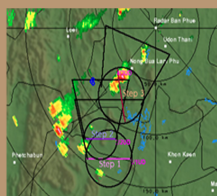


Figure 3 The Royal Rain Technology steps at the same target area.

Mirror target area method

1. The Royal Rain Technology substances dispersion area (Seed: S)
2. The area was not dispersed with Royal Rain Technology substances (Non-Seed: NS)
3. NS were created by Mirror target areas method (Figure 4) NS was parallel to S perpendicular to the wind direction.

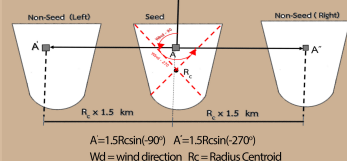


Figure 4 The creation of NS by using mirror target area method.

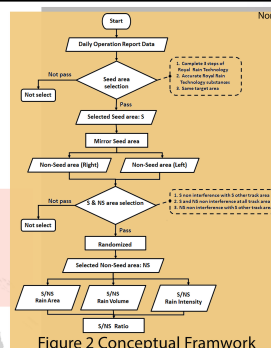


Figure 2 Conceptual Framework

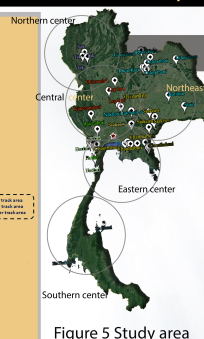


Figure 5 Study area

STUDY AREA : Five Royal Rainmaking centers and Weather Radar stations.

RESULTS

1. 39 samples : Dry season 21 and Wet season 18
2. Upperair Weather condition (Detyothin C. et al., 2018) Good 20, Moderate 13 and Poor 6

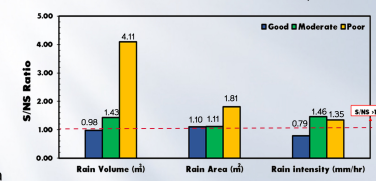


Figure 6 The result of rain properties analyzing to S/NS ratio following the seasonal.

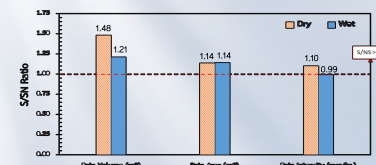


Figure 7 The result of rain properties analyzing to S/NS ratio following the weather conditions.

CONCLUSION

The evaluation of cloud seeding during 2018 to 2020 can be demonstrated that cloud seeding using Weather Modification by Royal Rain Technology in Thailand may increase rain volume and rain area to be higher than natural rain in designated targets. And the weather modification by Royal Rain Technology in Thailand can be efficiency performing during Dry season with the Moderate to Poor weather condition.

References

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Figure 4 Seed and Non-seed target area creation sample.

Data analysis

1. Randomized Non-seed target area. (Left or Right)
2. Rain properties comparison by single ratio method.

$$\text{Ratio (S/NS)} = \frac{\text{Seed (S)}}{\text{Non-Seed (NS)}}$$