them in flats or small pots. In no way will they grow as well as in the 2-gallon containers, which will be salable as budded plants next fall.

By taking the cuttings two months earlier than the general rule, we get two month's summer growth more, enough to get them into a regular growing cycle. They will go dormant normally, do not need artificial lighting, and are salable one year earlier.

REFERENCES

1 Brydon, P H 1964 The propagation of deciduous azaleas *Proc Inter Plant Prop Soc* 14 272

2 Wells, Peter 1970 Overwintering of deciduous azalea cuttings *Proc Inter Plant Prop Soc* 20 366

3 Henry, Rick and Paul E. Read. 1971. Propagating the new University of Minnesota hardy deciduous azaleas *Proc Inter Plant Prop Soc* 21 331

4 Markham, P 1976 Propagation of deciduous azaleas *Proc Inter Plant Prop Soc* 26-343

PROPAGATION OF RABBITEYE BLUEBERRIES

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Why grow rabbiteye blueberries? There are many reasons. They are excellent for homeowners since they not only provide fruit but can serve as screens or as ornamental plantings to provide fall color. With the correct choice of cultivars the homeowner or pick-your-own grower can have an 8 to 10 week bearing period.

Our operation is different from the usual in that we do everything in the open. Our main reason for choosing this method of operation is that the plants do not require the constant attention that is necessary if they are either in the greenhouse or in containers outside. Even our rooting of cuttings is done outside. Although we have been very happy about this system, we may in the future expand to include greenhouse and container production as well.

Our soil is a well-drained Norfolk sandy loam. We are, therefore, able to put our propagation beds right on top of the native soil. We have used a 1:1 peat:sand medium and have found it quite satisfactory. We have experimented with various other media, including pinebark, sawdust, and other materials. Some of these have also given very good results and, as costs

change, we may use the materials that we find are the most economical. Almost any medium is satisfactory if handled properly.

Since we have found it necessary to leave our plants unattended at various times, it has been important for us to have a dependable system for controlling the water supply. Our control system is our main innovation. We tried the electronic leaf but found that our water was too pure to conduct the current. Although that difficulty could be overcome, we found a second surprising problem at another time when we discovered the control was not operating. An insect lodged between the electrodes completely prevented the control's operation. We then substituted a system in which the control was operated by the weight of the water that accumulated on a screen fastened to a lever arm. The system worked very well except for the fact that the wind caused rapid fluctuations in the movement of the lever arm. If the screen and the control mechanism were protected from the wind, the water accumulation no longer matched that on the leaves of the plants since the screen was in a different environment.

When I purchase meat in the market, I observed that the scale fluctuated once or twice, then came to rest. I discovered that a mechanism called a dash pot is incorporated in the scale. This is simply a cylinder containing oil and a plunger that moderates the movement of the scale. In order to accomplish the effect of the dash bar, I filled a 6-gallon bucket with water and suspended an 8-inch basket from the lever arm into the water. This, of course, is on the opposite end of the lever arm from the screen. The screen can be made of any light material that will collect water and yet dry fairly quickly. We use a light-weight cheese cloth wrapped around a 7 in by 43 in cylinder constructed of 2 in by 4 in welded wire fence material. A mercury switch is fastened to the lever arm directly above the pivot point. The back part of the assembly is protected from water with a fiberglass panel. It is important when constructing a control of this type to have the lever arm on a sharp pivot point, as this will increase sensitivity. (Figure 1)

We take cuttings beginning middle to late June when the first flush is hard enough to break. Cuttings are taken from nursery and stock plants maintained on 6- by 12-foot spacing. It would be possible to take cuttings 8 months out of the year except for the fact that we also need time to handle other nursery operations. Most important of all, we must market the plants. Our mix is prepared by using a manure spreader so placed in beds spaced to allow driving through them. We provide 75% shade during the rooting process. We leave the cuttings in the rooting

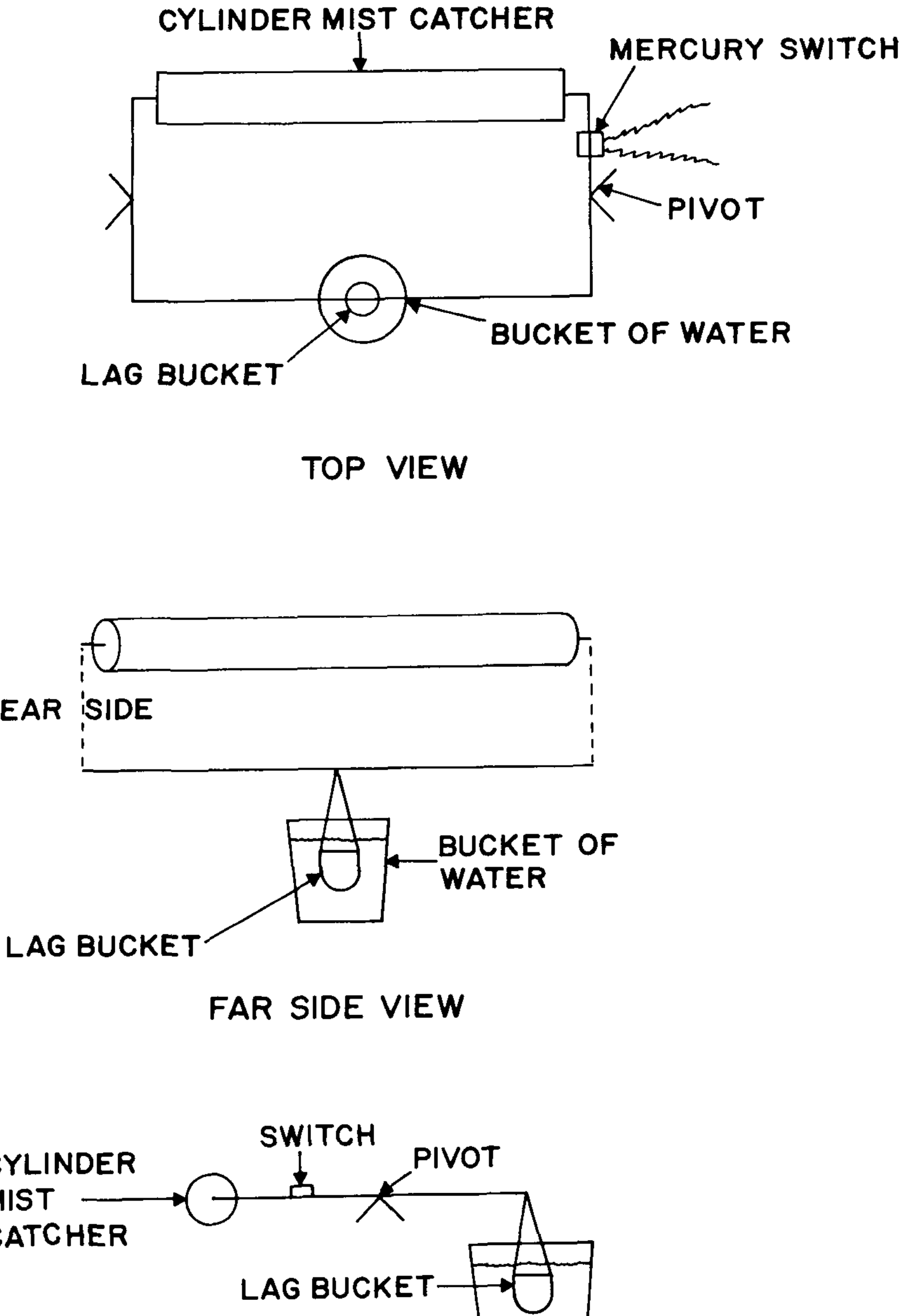

Figure 1. Water control mechanisms for mist showing lag bucket used to reduce fluctuations (Drawings by Stephanie Knopp, Athens, Georgia)

bed at least 2 years but can still have salable plants at the end of 3 years if for some reasons we do not move them sooner.

When plants are moved to the field, we level and compact the beds, then set the plants right on top of the soil through old sawdust placed to a depth of 5 to 6 inches on top of the soil. We use Rain Bird sprinklers in the propagation bed with a ⅛ inch or $^5/_{32}$ inch orifice with adjustable screw spreader. The Rain Bird sprinkler must have 50 to 60 psi pressure to operate and mist properly, although we ordinarily have no problem with water pressure, we do maintain a booster pump We also have a diesel-powered back-up for the propagation and irrigation system.

Our entire operation also includes the propagation of a few muscadine grapes. In addition, we have a pick-your-own operation that includes peaches, blueberries and grapes. We find that the sequence works out well as the peaches can be picked first, followed by the blueberries and then the grapes. Our propagation and plant sales are done at other times of the year.

We feel that satisfied customers are important. We encourage them to buy at least two cultivars of blueberries for good crop set.

MICROMAX — MICRONUTRIENTS FOR IMPROVED PLANT GROWTH[1]

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Abstract: A 3^5 factorial set of treatment combinations were developed to study the effects of iron, manganese, copper, boron, and zinc on growth and development of container nursery stock A computer was used to select ⅓ of the treatment combinations for the study and data analysis

Interactions were noted between iron and copper, iron and manganese, and copper and boron Plant growth and quality increased or decreased as the micronutrient ratios shifted This study revealed that the ratio among the micronutrients was a more important consideration than the rate of a particular micronutrient

In 1957, Matkin, Chandler, and Baker (3) wrote "since micronutrients are required in such minute amounts by plants and are natural components of peat, soil, fertilizer, and water, it is improbable that a soil mix would develop micronutrient deficien-

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