

# Westside Dust Plots

## slight encouragement in trials hindered by climatic conditions

Lloyd Brown

One species of grass, among the 11 varieties of legumes and grasses—planted in December 1952—in test plots in the southern San Joaquin Valley, showed promise in December 1953.

The test plots—of about 500 acres each, and fenced—were established in Fresno, Kings, and Kern counties to introduce plants and develop management practices to alleviate the Westside dust problem.

Trial plantings of grasses and legumes, in rows about 1,300' long, have been made each year beginning in the autumn of 1951.

Poor plant growth because of lack of rainfall in two seasons out of three has prevented any significant observations on grazing.

In 1952, adequate rainfall produced good plant growth and the rows fertilized with ammo-phos—16-20-0—applied at the rate of about 44 pounds per acre—responded very satisfactorily.

*Schismus arabicus*, a grass native to the Mediterranean area, was first noticed on the Westside Plains some seven or eight years ago. The plant seems to root firmly in the soil and is therefore resistant to wind action. Stockmen reported

that stock liked the grass and it seemed to be a good forage plant.

No extensive stands of *Schismus* were found but plants were scattered over much of the Westside area.

Seeds of the new grass were collected and in early December, 1952—after good early rains—the three test plots were planted with:

*Schismus arabicus*

Crested wheat, *Agropyron cristatum*

Tall wheat, *A. elongatum*

Intermediate wheat, *A. intermedium*

Pubescent wheat, *A. tricophorum*

*Stipa rosengurtii*

Indian ricegrass, *Oryzopsis hymenoides*

Wimmera ryegrass, *Lolium subulatum*

Smilo, *Oryzopsis miliacea*

Rose clover (*Trifolium hirtum*) and bur

clover (*Medicago hispida*)—inoculated

with nitragin—were seeded at the rate of two pounds per acre each in rows one through 18.

Growth in the test plots started very well and good stands were obtained. However, subsequent rains were light and the plots—along with the native cover on the Westside—dried up in March. The plants did not mature enough to produce seed.



*Schismus arabicus* invading slick spots. The plants are growing where the soil had cracked the previous summer. Hence the tile-like appearance.

Apparently none of the perennials in the 1951 or 1952 test plot plantings survived the summer of 1953.

In the fall of 1953 *Schismus* plants were found to have invaded slick spots where the soil contains more alkali than adjoining vegetated areas. Apparently the seed produced by the 1952 plantings had been broadcast by the wind to lodge in cracks in the soil—caused by its drying out—and had taken root.

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## PIPE SYSTEMS

Continued from preceding page

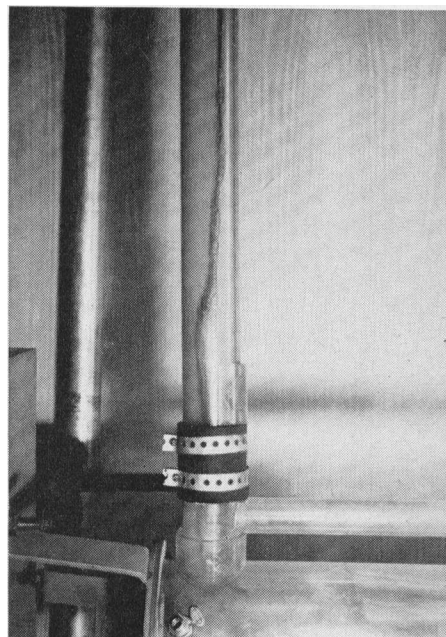
problems as far upstream as the automatic feature is provided. Operation can be completely automatic. There is no opportunity for air entrainment.

Without air entrainment, and with correct design, the semiclosed distribution system provides positive stability in operation.

The hunting of float valves in series is a very real possibility if design is not correct. If the oscillatory properties of the float and valve happen to be matched in just the right way to the characteristics of the pipe and stands, serious surging can result.

Successful conversions of open systems to semiclosed systems have been made on a number of farms on the steeper slopes in southern California. Some valves used had hunting difficulties but most installations were remarkably successful.

Air bubble forming below an overflow stand. The vent shown is closed.



The question of water hammer has been raised in regard to semiclosed systems. The factors which make for stability cause a lag in response of the valves for which a foot or two freeboard must be provided in the stand, but as observed in the field, there appears to be no appreciable hammer. Opportunity for hammer would occur with fast closing manual valves on deliveries. Such valves can well be avoided except where deliveries are made directly from a stand. The storage in the stand can absorb most of the shock.

The analyses and model studies currently under way indicate that material improvements can be made in the operation of all three systems.

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