



## Engineer Says Vegetable Growers In Era Of Mechanization

Pennsylvania vegetable growers have entered an era of total mechanization including seeding, harvesting, and packaging, according to an Extension agricultural engineer at The Pennsylvania State University.

Burton S. Horne told the Vegetable Growers Conference recently that "the total harvester era is well launched and complete success will be met in the 1970's. The functions of the total harvester will be precise, controlled, monitored, and react to poor quality fruit and adverse harvesting conditions."

He also said considerable research is now being centered on the problems encountered in direct seeding vegetables. The difficulty here lies in "singulating" the small and irregular shaped seeds. In addition, problems of soil crusting may delay or prevent plant emergence.

Coated seeds can be "singulated" and spaced in the row fairly accurately with currently available planting units. Seed coated with clay, vermiculite, sugar and sand mixtures have been used in field trials and a number of these coated seeds are available commercially.

"In certain cases, however, inconsistent germination has re-

sulted by using these coated seeds," Horne said. "perhaps because of too tightly packed coatings which restrict the supply of oxygen to the seed."

Vacuum pick-up devices for planting "naked seeds" have performed well in the laboratory, but under field conditions, vibration and dust become major problems, the ag engineer stated. Precision plate planters, as all planters for small uncoated seeds, produce misses or doubles depending on the machine adjustment and operating speed.

"The 'packaged environment' concept has been initiated whereby the necessary plant nutrient requirements, weed control, protection against herbicide damage, favorable soil contact, and moisture relationship are met during planting," Horne emphasized.

Pellets, tablets, capsules, wafers, and the vermiculite seed tablet have resulted from this approach. In addition, several cylindrical shapes as well as spherical and cone shaped tablets were tested.

"In spite of the many technological advances needed to achieve total mechanization in vegetable production, the major problems will undoubtedly be solved before 1980," Horne said.

### Price Advances

I'm aware of the scarcity of bedding for all types of livestock and the recent price advances. With many farmers growing more corn and less small grain, this condition could get more severe in the future. Winter wheat growers can increase both the yield of wheat and the straw by top-dressing about the middle of March with a nitrogen fertilizer. This extra plant food will help yields more on poor soils or on sand or shale fields that are to be seeded down to a grass-legume mixture should not be given the normal 40 to 50 pounds of actual nitrogen per acre. The extra growth on the grain will decrease the legume stand. A straight Spring seeding, or an early August seeding without any nurse crop, is advised for the new grass stand.



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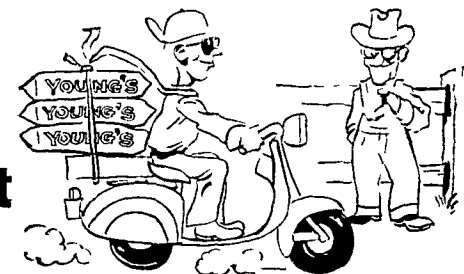


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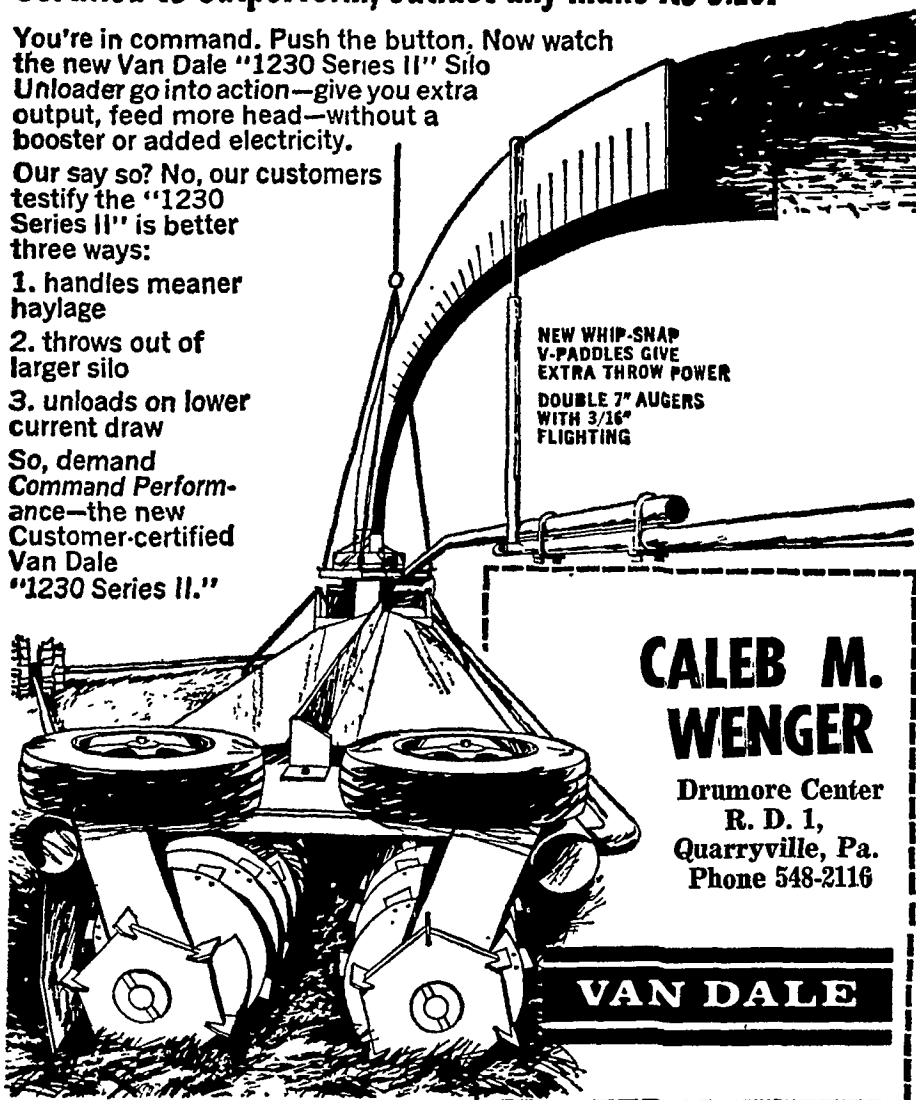
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