



DOVES SWARMING over safflower plots at Yuma. Multiply an ounce and a half of seed per bird per day by several thousand birds, over a period of a month, and you can see where a valuable oilseed crop has gone.

Safflower Can Be Harvested Before the Doves Eat It All

By Ernest B. Jackson and Phillip A. Tilt

Wildlife specialists estimate that a white-wing dove will eat at least one and a half ounces of grain every day. This fact may seem insignificant by itself, but when you multiply it by several thousand and spread it out over a month or more, it takes on quite a different meaning. This is exactly what has been happening this year in many safflower fields throughout southern Arizona. Doves by the thousands have been sitting on safflower plants, picking the grain from the seed heads.

The dove population on four acres of experimental plots at Yuma was estimated to be between 1,000 and 1,500 every day beginning in early June. Continuous vigil was necessary to keep them away. Once they have started on a field, they quickly move in and gorge themselves every time it is left unguarded.

Get It Harvested Quickly

The simplest solution to this problem is to harvest the seed as soon as it is mature. Nothing is gained by letting it stand in the field another month.

Safflower planted at Yuma in December or January normally begins blooming about the second week in May. By mid-June all blooming has ceased and the seed is maturing rapidly. At this stage the plants are still green and succulent, and won't be dry enough to combine directly until mid-July.

During this long drying period, several things can happen: (1) Grain can be lost to feeding birds. (2) As the safflower plants dry up, summer

weeds such as sunflower can develop to the extent that they interfere with the harvesting by combine. And (3) Harvesting as late as mid-July leaves

little time for getting in a summer crop, such as grain sorghum.

Plantings Made at Yuma

To determine at what stage in the life cycle of the safflower plant the seed can be harvested without loss of yield or quality, an experiment was conducted on the Yuma Branch Experiment Station during the winters of 1961-62 and 1962-63. Replicated plots of gila safflower were grown under normal cultural procedures until the plants had completed flowering. Beginning when the last flowers had faded, plots were cut and windrowed each week until the normal harvesting time in July.

All plots were sampled for moisture content of stems, heads (including the bracts around the seed heads), and seed as they were cut and windrowed, and again after one week of drying in the field. Oil content and bushel weight of the seed were determined from samples taken when the plots were threshed for yield.

Visual indications of stages of maturity were the same in both years.

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Gila Safflower Windrowed at Seven-Day Intervals, Beginning When the Last Flowers Had Faded. Yuma Valley Experimental Farm

Time of Cutting Days After Last Flowers	Moisture Content									
	When Windrowed			After 7 Days In Windrow			Bushel Weight Lbs.	Oil Content %	Seed Yield ¹ Lbs./Acre	
	Stems %	Heads %	Seed %	Stems %	Heads %	Seed %				
1961-62										
0	65.9	54.0	—	8.4	7.0	—	36.4	35.8	2,790	
7	59.0	44.4	—	6.9	5.1	—	41.2	39.4	3,440	
14	58.3	18.6	—	4.5	3.4	—	43.5	40.2	3,670	
21	56.3	17.9	—	7.0	5.0	—	43.2	40.2	3,220	
28	53.1	6.2	—	4.1	5.1	—	43.9	40.4	3,920	
1962-63										
7	63.5	53.2	25.4	15.9	13.0	3.0	40.0	42.0	3,200	
14	65.0	6.8	4.1	4.2	2.4	1.8	39.8	42.0	2,780	
21	57.0	6.5	3.1	4.2	1.0	1.0	40.3	41.0	3,060	
28	13.8	1.0	0.7	—	—	—	40.4	42.1	3,040	

¹ Acre-yields calculated from 1/1089- and 1/2041-acre plots. All data are averages of four replications.

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A COSTLY LUXURY

"The penalty which we shall pay for failure to maintain a strong and vigorous research program in agriculture will be to supply the industry of agriculture with obsolete knowledge. Obsolescence of knowledge is a luxury which we can ill afford. This experiment station must be kept up-to-date if we are not to be saddled with obsolete knowledge" — Dr. Harold A. Young, retiring after long service as director of the Virginia Agricultural Experiment Station.

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Approximately one week after the last flowers had faded, the field began to exhibit a general appearance of yellowing or a fading green color. All flowers were dry and the tips of the bracts around the seed heads were just beginning to die.

Although plants cut at this stage were much too high in moisture to be threshed immediately, they were easily threshed after a few days of drying in the windrow. As shown in the table, oil content, bushel weight and plot yield indicated that the seed was mature in 1962-63 and almost mature in 1961-62.

For Windrow Harvesting

Two weeks after the last flowers had faded, the seed was mature in both 1961-62 and 1962-63, and could be safely harvested by windrowing. This stage of plant maturity was marked by a general appearance of ripeness throughout the field, with the green color almost gone. Perhaps the best indication of seed maturity was the seed heads themselves. They were beginning to turn brown and the bracts around the heads had died back from the tips. Occasional early heads were completely brown with no green color left in the bracts. The rest of the plant, however, was still green and high in moisture as is shown in the table.

These findings indicate that safflower can be windrowed or swathed between one and two weeks after the end of blooming. From normal plantings at Yuma, this stage occurs between the tenth and fifteenth of June; whereas, if the crop is left standing in the field until the plants are dry enough to combine directly, harvest is delayed for approximately one month.

Has Several Advantages

Some of the advantages from windrowing safflower as soon as the seed is mature are:

Mystery Picture Is A Strange Plant



Very few of our readers will recognize what kind of plant is pictured here. Note the heavy dark, serrated leaves and the tiny white blossom clusters.

It would be a striking plant anywhere. It is virtually unknown in Arizona, yet most of us couldn't get through the day without use of its product!

Look on Page 17 for the answer.

(1) Loss of seed to feeding birds is minimized. (2) The safflower crop can be removed from the land early enough to permit a July planting of grain or forage sorghum. (3) Summer weeds have less time to grow and

interfere with the seed harvest. (4) Where fields are already weedy they can be harvested much more easily by windrowing. Tough green weeds go through the combine much better after a period of drying.