Harvest Efficiency

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Growing a wide variety of crops to supply a CSA is difficult and can drastically decrease your harvest efficiency. Diversified farms are at danger of losing valuable time transitioning from crop to crop as each one has slightly different needs. There are greater demands on the crew to have a diverse set of skills for harvesting each different crop. While we will never be as efficient as farms that grow only a few different crops, over the years we have worked out systems that allow us to make the best use of our time. We hope our systems can help farmers who are increasing their crop diversity continue to maintain their harvest efficiency.

Planning: All of our fields are divided into 50 ft sections (eight 6ft beds) with a 12 ft. grass driving lane in between. This allows us to access the field in all weather conditions without creating compaction in the crop production areas while we also never have to carry a harvest crate more than 25 ft. Carrying produce long distances is hard on the body and increases the time it takes to harvest.

Our crop rotation is also planned according to harvesting. We plant the crops that are harvested at the same time in the same field or section. For instance we plant all of the leafy greens together: head lettuce, kales, leaf lettuce, broccoli rabe or all of our bunching roots together: radishes, baby beets, baby carrots, salad turnips. That way we don't have to drive all over the farm to get the harvest. We lose the most time by switching tasks, if the crew can just stand up and walk a few steps to the next crop our harvest time is decreased.

By grouping different families together in the same section we have to make sure we have a wide crop rotation. We still want to make sure we do not follow too closely with crops of the same family. A wide variety of cover crops are mixed into our rotation. We try to have half of our vegetable acreage in cover crops each season. The grasses and legumes break up the disease cycle and weed cycle in our vegetable fields (although we do have to be careful, some legume cover crops host the same diseases as our vegetable crops). Keeping careful records of our crop planting is important to make sure we don't follow too closely with the same family in the same bed.

Pest control: Another way to increase harvest efficiency is to have healthy, weed and pest-free crops. We use compost and a composted dried chicken manure product as a side dress for fertility. Another reason we include many legumes in our crop rotation is to increase our soil fertility without additional expensive inputs. Bed forming and stale seed bedding are important tools to create weed-free soil for our vegetable crops, especially for the direct seeded crops. We form raised beds two to three weeks before we plant a crop. Then we stale seed bed three to four times before we seed or plant the crop. Pest control options for the organic grower have also improved. We use floating row cover, scouting, beneficial insects, Entrust, and Dipel (Bt) for pest control.

Communication, Standards and Facilities: Once the crops are ready to harvest we make sure to have a system for clear communication and expectations with the harvest crew. We created a

harvest manual that has a sheet for each crop we grow. (You can find the harvest manual on our website at www.roxburyfarm.com) This sheet describes how to identify when a crop is ready to harvest, the harvesting technique, the tools needed, how to pack in the field, washing and storing techniques, and how to pack in the barn. We also train the crew on each crop but the harvest manual provides them a written description and reference if they forget something. The manual states the standards for how many boxes, heads, etc. we expect an average harvester to harvest in an hour. This gives the crew an idea of how long something should take and if it is taking much longer we can work on techniques to increase the efficiency.

We create a clear harvest schedule and keep to it each day. All of our harvesting is done by 1:00 pm each day. We don't want to harvest crops in the afternoon sun and heat. The crew has a written harvest list so that they can easily move from one crop to another. They know how many boxes/buckets to take to the field and what tools they will need. This reduces trips back to the barn. The list states how many bunches, pounds, or heads to put in each box. We have a same number in each box so that we can easily keep track of how many more bunches to make.

Two people manage the harvesting. This reduces tension among the crew when there is confusion, they can go to the harvest managers with questions. The harvest managers also make sure the crops in the boxes are up to standards. Below standard crops in the boxes reduces the washing and packing efficiency in the barn. The different tasks are divided up among the crew members and they keep to these tasks each day. For instance we have a crew that harvests the sweet corn each day and at the same time another crew is harvesting the tomatoes and peppers. That way everyone becomes comfortable in a job and knows the routine.

We grow a large amount of root crops so that we can continue to deliver crops until mid-December. There is a different system for these crops. We harvest all of our storage crops into 20 lbs buckets. We don't want to spend a whole day lifting heavy boxes. We lay out the number of buckets we will need for the whole bed so that time is not spent walking around for buckets. When one bucket is full the next bucket is right there. The full buckets are moved to the driving lane. We then empty the buckets into 20 bushel bulk bins carried by a forklift on a tractor. This system is used for all of our storage crops from winter squash to sweet potatoes.

We have a large well-lit barn for our sorting and washing. While we do a lot of sorting the field, the final sorting and packing are done on tables under the lights in the barn. The harvest manual also describes how we wash and pack all of our crops. The washing of the cut greens is the same for all of the greens. The number of peppers, squash, cucumbers, etc counted into a box is the same every day. We wash all of the bunched roots the same way. This keeps the washing and sorting moving efficiently in the barn.

While we grow many different crops, we work on creating systems that allow us to treat similar crops in the same way so that it seems that we only grow a few different crops. Emphasizing clear communication and having clear standards helps the crew to be as efficient as possible.